

Graduate transition to work: From qualifications and skills towards ‘horizontal expertise’

Jelena Popov

PhD in Education

Institute of Education, University College London (UCL)

Word Count: 83 741
Supervisor: David Guile
Date: March 2018

I, Jelena Popov, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

A handwritten signature in blue ink that reads "Jelena Popov". The signature is written in a cursive style with a large initial 'J' and 'P'.

Table of Contents

LIST OF FIGURES	6
LIST OF TABLES	8
ABSTRACT.....	11
ACKNOWLEDGEMENTS	13
CHAPTER 1: INTRODUCTION TO THE THESIS	14
1.1 THE BACKGROUND, THE PROBLEM AND THE AIM OF THE RESEARCH	14
1.2 PERSONAL REFLECTION ON THE TOPIC	15
1.3 OVERVIEW OF THE STUDY.....	17
PART I. THE SUBSTANTIVE ARGUMENT	21
CHAPTER 2: THE LEARNING DIMENSION OF GRADUATE TRANSITION TO WORK: CURRENT PHASE AND TWO GAPS	22
2.1 INTRODUCTION	22
2.2 THE CURRENT PHASE IN RESEARCH AND THINKING ON EDUCATION TO WORK TRANSITION: UNEMPLOYMENT, AUSTERITY AND EMPLOYABILITY	25
2.3 TWO GAPS IN THE LITERATURE ON GRADUATE TRANSITION: THE CONCEPT OF SKILLS AND THE TWO RESEARCH PARADIGMS	30
2.3.1 THE GAP BETWEEN THE POLICYMAKERS', EMPLOYERS' AND RESEARCHERS' CONCEPTS OF GRADUATE SKILL	31
2.3.2 THE SECOND GAP: QUALITATIVE AND QUANTITATIVE RESEARCH ON GRADUATE TRANSITION	37
2.4 THE LEARNING DIMENSION OF GRADUATE TRANSITION TO WORK: GAPS AND RESEARCH QUESTIONS	43
2.5 CONCLUSION	45
CHAPTER 3. THE CURRENT LEARNING DIMENSION OF GRADUATE TRANSITION: 'SKILLS AND COMPETENCES' DISCOURSE.....	46
3.1 INTRODUCTION	46
3.2 COMPETENCES AND SKILLS IN THE WORKPLACE	47
3.2.1 THE COMPETENCE APPROACH AND THE CLASSICAL SELECTION MODEL	47
3.3 COMPETENCE MODELS IN HIGHER EDUCATION: GENERIC SKILLS AND DUAL COMPETENCE.....	53
3.3.1 COMPETENCE APPROACH IN HIGHER EDUCATION: THE 'GENERIC SKILLS' MODEL	55
3.3.2 THE COMPETENCE APPROACH IN HIGHER EDUCATION: 'DUAL MODEL OF COMPETENCE'	58
3.4 THE COMPETENCE/SKILLS APPROACH AND LEARNING ACROSS CONTEXTS	62
3.5 CONCLUSION	65
CHAPTER 4. THE LEARNING DIMENSION OF GRADUATE TRANSITION: LEARNING ACROSS CONTEXTS	67
4.1 INTRODUCTION	67
4.2 LEARNING ACROSS CONTEXTS: THREE MODELS.....	68
4.2.1 EXPERIMENTAL LEARNING MODELS IN PSYCHOLOGY: BEHAVIOURISM AND COGNITIVISM ...	70
4.2.2 SITUATIVE PSYCHOLOGICAL APPROACHES TO LEARNING	77
4.3 FROM LEARNING APPROACHES TO LEARNING METAPHORS: 'TRANSFER AND APPLICATION' AND 'CHANGING PARTICIPATION'	80
4.4 CONCLUSION	87
PART II. THE METHODOLOGICAL ARGUMENT	89
CHAPTER 5. THE LEARNING DIMENSION OF GRADUATE TRANSITION: HORIZONTAL EXPERTISE FRAMEWORK.....	90
5.1 INTRODUCTION	90

5.2 CULTURAL-HISTORICAL ACTIVITY THEORY'S (CHAT) ACCOUNT OF LEARNING ACROSS CONTEXTS: MOVING ON FROM THE 'TRANSFER DILEMMA'	91
5.2.1 LEARNING ACROSS CONTEXT AS 'CHANGING PARTICIPATION IN CHANGING PRACTICES'	97
5.2.2 LEARNING ACROSS CONTEXT AS 'CONSEQUENTIAL TRANSITION'	100
5.2.3 THE SOCIOCULTURAL AND DIALOGICAL ACCOUNT OF LEARNING ACROSS CONTEXTS AS 'BOUNDARY-CROSSING'	104
5.2.4 LEARNING ACROSS CONTEXT AN ASPECT OF HORIZONTAL EXPERTISE DEVELOPMENT AT WORK	108
5.2.5 LEARNING ACROSS CONTEXTS AS RECONTEXTULISATION	111
5.3 TOWARDS A NEW CONCEPTUAL FRAMEWORK FOR THE LEARNING DIMENSION OF GRADUATE TRANSITION: THE HORIZONTAL EXPERTISE FRAMEWORK	116
5.3.1 THE GRADUATE HORIZONTAL EXPERTISE FRAMEWORK AS A MODEL OF GRADUATE EXPERTISE DEVELOPMENT	120
5.4 CONCLUSION	122
CHAPTER 6. RESEARCHING THE LEARNING DIMENSION OF GRADUATE TRANSITION: A CHAT-BASED MIXED-METHOD APPROACH	124
6.1 INTRODUCTION	124
6.2 THE MIXED-METHOD RESEARCH TRADITION	124
6.2.1 QUALITATIVE AND QUANTITATIVE RESEARCH TRADITIONS: PARADIGMS AND METHODOLOGIES	125
6.2.2 A MIXED-METHOD ARGUMENT FOR SOCIAL RESEARCH - COMBINING THEORETICAL FRAMEWORKS, METHODOLOGIES AND METHODS	132
6.3 CHAT AND RESEARCH METHODOLOGY	140
6.3.1 CULTURAL-HISTORICAL ACTIVITY THEORY: A DIALECTIC ORIENTATION, AND IMPLICATIONS FOR RESEARCH PRACTICE	141
6.3.2 THE CONTRIBUTION OF CHAT TO THE MIXED-METHOD ARGUMENT AND THE SYNTHESIS PROBLEM	149
6.4 CHAT-BASED MIXED-METHOD RESEARCH AND THE STUDY OF HORIZONTAL EXPERTISE	160
6.5 CONCLUSION	169
PART III. THE EMPIRICAL ARGUMENT	171
CHAPTER 7: THE LEARNING DIMENSION OF GRADUATE TRANSITION – A QUANTITATIVE STUDY OF REFLEX DATA AND HORIZONTAL EXPERTISE	172
7.1 INTRODUCTION	172
7.2 CHAT-BASED APPROACH TO EXTANT SURVEYS	173
7.2.1 SURVEYS AS ARTEFACTS IMBUED WITH REPRESENTATIONS OF PROFESSIONAL COMMUNITIES	174
7.2.2 SECONDARY ANALYSIS AND THE RE-PURPOSING OF EXTANT SURVEYS FOR A NEW RESEARCH PROJECT	178
7.3. REFLEX DATA SET – CULTURAL ARTEFACTS RE-PURPOSED FOR THE ANALYSIS OF HORIZONTAL EXPERTISE	180
7.3.1 REFLEX SURVEY: COMMUNITIES, MODELS OF LEARNING AND RE-PURPOSING FOR HORIZONTAL EXPERTISE	181
CONCLUDING REMARKS FOR REFLEX ANALYSIS	200
7.4 CONCLUSION	203
CHAPTER 8. HORIZONTAL EXPERTISE DEVELOPMENT IN INTERNSHIPS: METHODS OF ANALYSIS AND EMERGING THEMES	205
8.1 INTRODUCTION	205
8.2 INTERNSHIP AS A FORM OF GRADUATE TRANSITION AND A SITE FOR EXPERTISE DEVELOPMENT	206
8.3 METHOD AND METHODOLOGY FOR RESEARCHING HORIZONTAL EXPERTISE IN AN INTERNSHIP	208
8.3.1 FOCUS GROUP METHOD AND HORIZONTAL EXPERTISE RESEARCH	208

8.3.2 THE ANALYTICAL FRAMEWORK FOR DISCUSSION GROUPS ON HORIZONTAL EXPERTISE IN AN INTERNSHIP	220
DATA COLLECTION	221
STRATEGY FOR DATA ANALYSIS.....	224
RESEARCHING HORIZONTAL EXPERTISE IN AN INTERNSHIP – RESEARCH PROCESS AND EMERGING THEMES IN THE DATA	226
8.4 EMERGING THEMES AND INTEGRATION OF INSIGHTS INTO THE INTERNSHIP EXPERIENCE	233
EMERGING THEMES IN THE DATA	234
8.5 CONCLUSION	269
CHAPTER 9. THE LEARNING DIMENSION OF GRADUATE TRANSITION TO WORK AND HORIZONTAL EXPERTISE FRAMEWORK – INTEGRATION AND DISCUSSION OF INSIGHTS.....	271
9.1 INTRODUCTION	271
9.2 THE INTEGRATED MIXED-METHOD RESEARCH FRAMEWORK AND FOUR PRINCIPLES OF MIXED-METHOD INTEGRATION	272
9.3 HORIZONTAL EXPERTISE FRAMEWORK – INTEGRATION OF INSIGHTS AND IMPLICATIONS FOR THE STAKEHOLDERS	275
REVISITING HORIZONTAL EXPERTISE AND INTEGRATING QUALITATIVE AND QUANTITATIVE EVIDENCE.....	276
9.4 THE HORIZONTAL EXPERTISE FRAMEWORK AND EDUCATIONAL RESEARCH COMMUNITIES	285
HORIZONTAL EXPERTISE FRAMEWORK AND IMPLICATIONS FOR CHAT	285
MIXED-METHOD APPROACH – IMPLICATIONS AND POSSIBILITIES	294
9.5 LIMITATIONS AND FUTURE DEVELOPMENTS OF GRADUATE HORIZONTAL EXPERTISE RESEARCH DEVELOPMENT	301
9.6 CONCLUSION	304
APPENDIX A: MIXED-METHOD RESEARCH DESIGN OF THE THESIS.....	344
APPENDIX B: STATISTICAL ANALYSIS OF REFLEX SURVEY	345
REFLEX SURVEY	345
DATA ANALYSIS AND EXPLORATION	351
CONCLUSION.....	366
APPENDIX C: QUALITATIVE STUDY OF HORIZONTAL EXPERTISE	368

List of Figures

- Figure 1.1 The three interrelated arguments of the thesis
- Figure 2.1 The learning dimension of transition from HE to work
- Figure 2.2 An overview of two gaps in the graduate transition literature
- Figure 3.1 The classical selection model, adapted from Binning and Barrett (1989)
- Figure 3.2 From generic competence in professional practice to a generic skills approach in higher education
- Figure 4.1 Learning across contexts: Approaches, metaphors and the transfer dilemma
- Figure 4.2 The main unit of analysis in behaviourist research on learning
- Figure 4.3 The main unit of analysis in cognitivist research on learning
- Figure 4.4 Cognitive approaches to transfer
- Figure 4.5 The main unit of analysis in situative research on learning
- Figure 4.6 The person/context relationship in cognitivist and situative approaches
- Figure 5.1 Cultural-historical and sociocultural mediation-by-dialogue
- Figure 5.2 Activity theory and mediation-by-activity
- Figure 6.1 Two traditions in social science and their sources
- Figure 6.2 The dialectic critique of common epistemological dichotomies
- Figure 6.3 Mixed-method research design and the foci of different mixed-method approaches
- Figure 6.4 The analogy of dialectical relations between a thread, strand and fibres
- Figure 6.5 The methodological assumptions of CHAT, as discussed so far
- Figure 6.6 Toulmin's argument model (adapted from 2003 [1959])
- Figure 6.7 Argument structure in social research
- Figure 6.8 CHAT-informed mixed-method research design
- Figure 6.9 Mixed-method research design for horizontal expertise

Figure 6.10 Quantitative and qualitative data and expertise development in and after an internship

Figure 7.1 The substantive/ representational and material aspects of surveys

Figure 7.2 First job skill demand “Extent to which first job demanded more knowledge and skill than you could offer”

Figure 7.3 Skills utilisation on the first job “Extent to which your first job utilised your knowledge and skill”

Figure 8.1 Speech genres as co-developing with activity

Figure 8.2 Double dialogicality of discourse and speech genres

Figure 8.3 Prompts and horizontal framework

Figure 9.1 The integrated framework for mixed-methods research

Figure 9.2 The process of graduate horizontal expertise development

Figure 9.3 Identity renegotiation in transition to work as an intersection between professional identity, the identity project and the conduct of everyday life

List of Tables

Table 2.1 Four phases of graduate transition research

Table 2.2 The logic of the NQF system (adapted from the official website) (European Commission 2017)

Table 2.3 Skills of graduates that employers highly value based on employer surveys

Table 2.4 Large-scale survey studies on graduate transition adapted from Raffé (2014)

Table 2.5 Variables used to describe the transition process in CHEERS and REFLEX

Table 3.1 Comparison between job analysis ('psychometric model') and competency analysis ('competence model') from Schippmann *et al.* (2000) in Smit-Voskuijl (2012)

Table 3.2 Competence models in higher education

Table 3.3 Key generic skills in the new economy ('information society') (Tynjälä 2008)

Table 3.4 Dual model of competence

Table 3.5 OECD's dual concept of reading or literacy competence in PISA

Table 4.1 Three main learning approaches in the learning across contexts debate

Table 4.2 Two clusters of psychological approaches to learning that map onto the distinctions between the cognitivist and situative accounts

Table 4.3 Two metaphors of learning, adapted from Sfard (1998)

Table 4.4 Four approaches to transfer and application and implications for conceptualising graduate transition

Table 5.1 Situative approaches and CHAT

Table 5.2 The contribution of Lave's work to the learning dimension of graduate transition (Lave 1988, 1996a, 2008; Lave and Wenger 1991)

Table 5.3 Two forms of human learning and development in across practices (Beach 1999, 2003)

Table 5.4 The contribution of Beach's work to conceptualising the learning dimension of graduate transition to work

Table 5.5 Dialogical mechanisms of learning on the boundary (adapted from Akkerman and Bakker 2011a)

Table 5.6 The contribution of the work of Akkerman and Bakker (2011) for the graduate learning dimension

Table 5.7 Boundary-crossing concepts (adapted from Engeström *et al.* 1995)

Table 5.8 The contribution of the work of Engeström *et al.* (1995, 1997, 2003) to the graduate learning dimension

Table 5.9 Three underpinning assumptions of recontextualisation (adapted from Guile 2014)

Table 5.10 The contribution of CHAT-based models of learning across contexts to graduate expertise development

Table 5.11 Three conceptual accounts of context

Table 5.12 Graduate horizontal expertise framework and three main learning challenges

Table 6.1 Differences between positivism and interpretivism (adapted from Lincoln and Guba 1985)

Table 6.2 Typical relationship between theoretical framework, methodology and method in the social science literature

Table 6.3 Conventional distinctions between two research methodologies (adapted from Hammersley and Atkinson (1995)

Table 6.4 Possible combinations of theoretical approaches and methodologies in mixed-method research (Crotty 1998)

Table 6.5 Three popular strategies for mixing methods in one research project

Table 6.6 Thematic overview of mixed-method literature, adapted from Johnson, Onewzbugie and Turner (2007)

Table 6.7 The relationship between the collective and the individual plane

Table 6.8 CHAT-based research assumptions outlined so far

Table 6.9 Research design, quantitative/qualitative tradition and horizontal expertise

Table 6.10 Design of horizontal expertise research

Table 7.1 The two moments in the dialectic nature of artefacts

Table 7.2 The main principles and actions for the secondary analysis of skills surveys

Table 7.3 REFLEX as symbolic and material artefacts of policy communities

Table 7.4 Key competences in REFLEX survey

Table 7.5 The logic of the ‘trends driven’ approach to competence analysis in REFLEX

Table 7.6 Reflex indicators and horizontal expertise in an internship

Table 7.7 The differences between degree-only and internship group in REFLEX

Table 7.8 Length of job search and first salary

Table 7.9 Two strategies for finding work upon graduation

Table 7.10 Logistic regression predicting the likelihood of internship group to say the degree and the first job were closely related

Table 7.11 Perceived overeducation of interns and degree-only students

Table 7.12 Years of overeducation for the first job

Table 7.13 Differences between internship and degree-only graduates in REFLEX

Table 8.1 Monological and Dialogical approaches to language, cognition and communication (adapted from Linell 1998)

Table 8.2 Double dialogicality of discourse (from Markova et al. 2007)

Table 8.3 The analytical tools for dialogic discourse analysis (adapted from Markova *et al.* 2007)

Table 8.4 Research design of focus group research on internship

Table 8.5 Focus groups and interview participants

Table 9.1 Mediating factors in mixed-methods social research

Table 9.2 The synthesis of evidence and the explanatory framework (i.e. interpretive inferential links)

Table 9.3 The skills/competence and horizontal expertise models of graduate transition to work

Abstract

The problem tackled within this thesis is that graduate expertise is commonly discussed in terms of ‘employability skills’, ‘generic and specific skills’ and ‘talent’. Most of these discussions use the terms ‘skills’ and ‘competences’ as umbrella terms to try to capture what I will show is actually a complex learning process that takes place across the boundaries of higher education and work.

The main aim of this thesis is to show that there is merit in (i) introducing an explicit learning perspective into the graduate transition to work discussion (i.e. the learning dimension of graduate transition), (ii) drawing on dialectical learning models which take into account learning in the complex real world context, and historically new forms of expertise, to develop this learning perspective (i.e. the graduate horizontal expertise model) and (iii) drawing on and implementing dialectic methodology which considers the complementarities and distinctive contributions of quantitative and qualitative research to learning (i.e. the integrated mixed methods framework).

In order to show that the learning dimension of graduate transition is better described in terms of graduate ‘horizontal expertise’ development and researched using the ‘integrated mixed methods framework’ I developed three interrelated arguments: (i) the substantive, (ii) the methodological and (iii) the empirical. With respect to the substantive argument, I draw on the learning perspectives (sociocultural and cultural historical activity theory) to develop a tentative framework of the learning dimension – the horizontal expertise framework. Then, with the methodological argument, I develop basic principles for researching the learning dimension using a mixed methods approach, taking into account the fundamental premises of the horizontal expertise framework. Finally, in considering the empirical argument, I conduct

secondary analysis of the REFLEX and a dialogical discourse analysis of students' experiences of doing an internship, bringing these two insights together. Finally, I revisit the substantive argument and extend and fine-tune the horizontal expertise framework, as explored through the concept of internship in light of the empirical findings.

Acknowledgements

I am most grateful to David Guile for the mentorship and for the wonderfully challenging ZPD. I would also like to thank Dr Denise Hawkes, Professor Paul Morris and Professor Karen Evans and my examiners Professor Anne Edwards and Dr Lynne Rogers for helpful comments and encouragement. I am grateful to professor Asa Makitalo for helping me understand sociocultural research methods and Dr Golo Henseke for his help on the quantitative chapter. I am thankful to my scholarship provider, ESRC, for the generous support.

Finally, I would like to thank my parents, family and friends for love and support over the past four years. A very special thanks to Sergey for sharing this journey with me day in and day out and to my mom, Slavica, who continues to inspire with her generosity, kindness and optimism. Last but not least, I consider myself extremely fortunate to have been the part of the “545” community of colleagues-who-became-friends who made the PhD journey fun, the CHAT reading group where we explored the most obscure CHAT papers on the Internet, and the ‘London Stories’ community for keeping my feet firmly on the non-PhD, non-academic ground.

Chapter 1: Introduction to the thesis

1.1 The background, the problem and the aim of the research

Issues surrounding youth transition to work have been of concern to policy-makers for almost forty years. More recently there has been an increasing interest in graduate transition to employment among policy-makers, employers and academics, not least because ‘one-fifth of the world cohort is now enrolled in higher education’ (Schofer and Meyer 2005). The most recent wave of interest was particularly fuelled by the 2008 recession across the Organisation for Economic Cooperation and Development (OECD) countries and the rising rates of graduate unemployment (e.g. European Commission 2016, OECD 2016, OECD 2017).

The main discourse for framing and discussing graduate transition to work has been the skills discourse, which explains graduate expertise in terms of acquisition of specific and generic skills. In fact, according to the OECD, skills ‘have become the global currency of 21st century economy’ (OECD 2012a).

In contrast to this, a number of critical researchers have challenged some of the basic assumptions of the dominant skills discourse, showing that the relationship between the economy, policy and graduate skills is much more complex (Brown, Lauder and Ashton 2011). In this sense, sociological research on youth transitions, social capital and national transition systems has been invaluable in pointing out the shortcomings and inconsistencies of the dominant discourse.

The specific point of concern of this thesis is that what is missing from policy and research discussions about graduate skills (e.g. ‘employability skills’) is, paradoxically, the critical analysis of graduate learning and expertise development. The main paradox of graduate transition discussions is that, despite the longstanding interest in graduate employment and

employability by policy-makers and researchers, the field is still heavily under-theorised (e.g. Holmes 2017). Moreover, the main concepts of graduate skills and competences are largely treated as a black box (i.e. as products of a mysterious learning process). The two extremes in the academic research on graduate transition to work are, on the one hand, that the concepts of skills and competences are used axiomatically to denote graduate expertise and, on the other, that these concepts are criticised for being little more than markers of social class and privilege.

Thus, for educationalists and policy-makers alike, what is crucial with respect to graduate transition to work is to understand the associated learning challenges and to devise ways to support young people in developing their expertise for the competitive social world. It is evident that more research is required on this topic.

The aim of this research is to show there is merit in introducing the learning perspective into graduate transition to work research, because this perspective can generate new insights for the graduate transition field. Specifically, the aim is to show that there are compelling reasons to think about the learning dimension of graduate transition in terms of graduate horizontal expertise development. In particular, I will first establish an analytical focus on the learning dimension of graduate transition to work and will then bring into dialogue two research traditions: the graduate transition research and the learning research tradition.

1.2 Personal reflection on the topic

I have become interested in the topic of graduate expertise as a result of my own experience of studying and working in different countries and as a result of my academic interest in learning theories. As a psychology student in Serbia I was dissatisfied with the lab-based and statistics-oriented research in academic psychology. I preferred working in the domain of

applied social research and as an interim policy research officer in the regional employment agency. Soon after graduation I ventured into working in HR and in an adult education institution. I also sought training in counselling psychology as a way to explore yet another career path. The underlying motivation was to use the rich insights from my psychology degree and apply them to real-world problems. Yet I found none of the career paths particularly appealing at the time. After shuffling between different career trajectories I decided to broaden my disciplinary horizons and I applied to do a Master's degree in Education Policy and Management at the Institute of Education in London.

My MA degree was broad, complex and interdisciplinary, and it focused on extended essay writing. This enabled me to broaden my thinking beyond the paradigmatic constraints of the psychological disciplinary approach. I became particularly interested in critical approaches to some familiar topics, such as human learning and development. Moreover, I became, first, intrigued and then interested and enthusiastic about post-Vygotskian thinking about human learning and development. These approaches helped me to rethink the topics of learning and expertise development, as well as enabling me to articulate my dissatisfaction with the dominant psychological paradigm that I was previously trained in. This energised my interest in doing a different kind of psychology and a different type of research. This dialogue with the two psychologies (the differential/cognitivist and cultural psychology) is at the core of this thesis as well (e.g. Chapter 3 and Chapter 4).

Towards the end of my MA degree I became a full-time trainee in the European Commission Directorate for Education for five months. As a trainee I was given the opportunity to be fully immersed in the work of the unit and as a result developed a keen interest in the different cultures, languages and goals of educational policy and research. Most of all I became interested in the fact that researchers and policy-makers are 'talking past each other', a

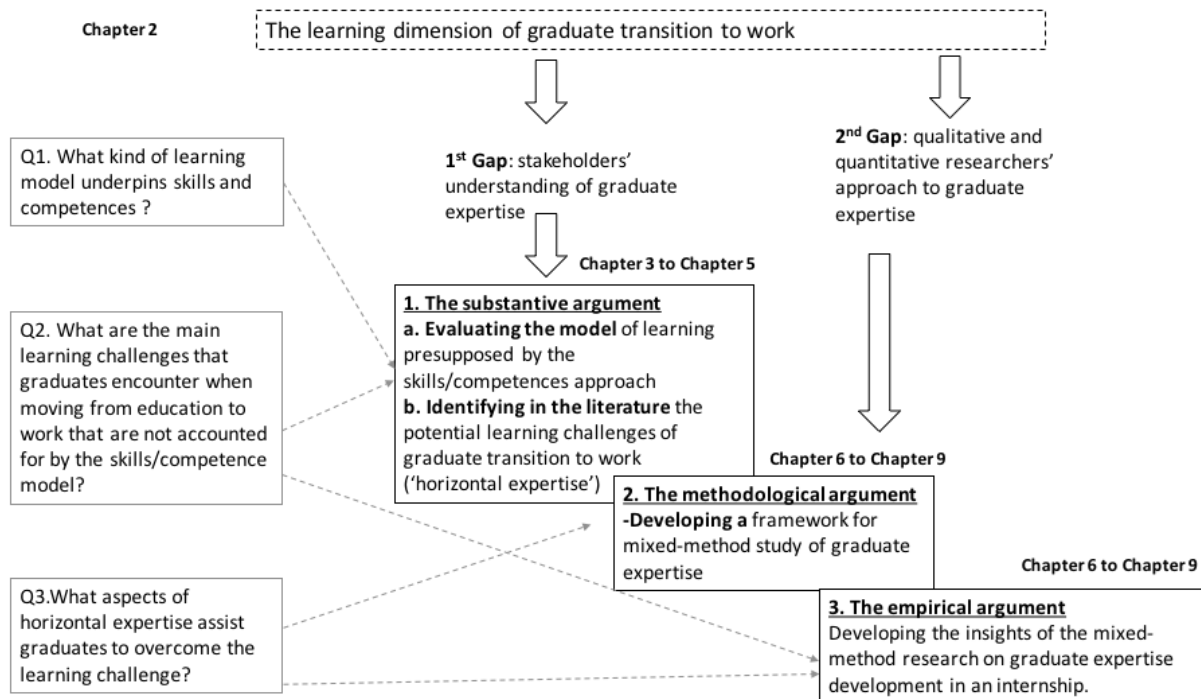
situation which I have witnessed several times in both the academic and in the policy contexts. This experience impacted my thinking and research profoundly, as is evident in one of the main goals of my thesis, which is to put policy concerns and academia in dialogue with respect to their shared concerns around graduate transition to work.

I have arrived at the topic of this research, I believe, precisely because my interest in post-Vygotskian work honed my focus on the learning dimension of human practices and because I was engaged in working with and making sense of policy, through both my MA degree and the traineeship. The idea of bringing together two seemingly disparate, separate traditions of thinking was the starting point for this thesis.

1.3 Overview of the study

In this section I will set out the synopsis of this thesis. It consists of three parts (Figure 1.1), which correspond to three interrelated arguments: the substantive, the methodological and the empirical. These three arguments are linked with the three research questions.

Figure 1.1 The three interrelated arguments of the thesis



In Part I (the substantive argument) I outline the problem with the dominant model of the learning dimension of graduate transition to work, suggest that a new model is needed and offer an alternative substantive framework – the ‘graduate horizontal expertise framework’. At this stage of the thesis, the framework is tentative, and as such I revisit it in light of my empirical studies in Chapter 9.

In Chapter 2 I describe the historical and social context of graduate transition to work, identifying: (i) the main discourse of the learning dimension of graduate transition as ‘skills and competence’ discourse, and (ii) the main methodology as polarised into quantitative policy research and qualitative research of graduate experiences. Then, in Chapter 3, I show that the skills and competence model of the learning dimension of graduate transition to work does not satisfy the criteria of learning models because it does not sufficiently distinguish (i) how learning takes place, (ii) the role and meaning of context for learning, and (iii) how people learn and perform across contexts.

As an alternative, based on the discussions in Chapters 4 and 5, I develop my own model of the learning dimension of graduate transition to work which is grounded in robust learning theory (the ‘graduate horizontal expertise’ model)

In Part II (the methodological argument) I develop the basic principles for the dialectic methodology for the research of graduate horizontal expertise in order to ensure that there is consistency between the assumptions of the substantive model (‘horizontal expertise’ model) and the methodology. In Chapter 6 I develop the foundational principles of the ‘integrated mixed-method framework’ that overcomes the quantitative/qualitative research dichotomy. I further develop this framework in Chapter 7 in relation to a secondary study of skill surveys and in Chapter 8 in relation to a focus group study of students’ experiences of internships. Finally, in Chapter 9 I bring together different threads of the framework and present the integrated mixed-method framework I developed.

In Part III (the empirical argument) I describe two empirical studies of horizontal expertise. In Chapter 7 I outline my approach to the secondary analysis of quantitative skill data set, showing the insights that the secondary analysis generated with respect to horizontal expertise. Namely, I show that graduates who have developed horizontal expertise in an internship position themselves differently in relation to their first job.

In Chapter 8 I outline my empirical study on graduate transition to work in an internship. I show how a focus group method and dialogical discourse analysis could be used in line with CHAT (Cultural-historical activity theory approach) methodological assumptions to generate new insights about horizontal expertise development. For instance, I show how graduates use internships to develop an understanding of the world of work, the professional field, their expertise and their identity.

In Chapter 9 I present four principles of integration which allow me to synthesise the insights from the quantitative study (Chapter 7) and the qualitative study (Chapter 8). I draw implications from my studies for the communities of stakeholders who may gain insight from this thesis, such as the graduate transition researchers and policy-makers, the youth research community, the CHAT research community and the mixed-method research community.

Part I. The substantive argument

Chapter 2: The learning dimension of graduate transition to work: current phase and two gaps

2.1 Introduction

For several decades now there has been increasing interest in the issues surrounding graduate employment or graduate transition from higher education to work (Brzinsky-Fay 2014).

Following the 2008 recession, and a new wave of high youth unemployment across the EU and OECD countries, a variety of stakeholders – policymakers, the public and researchers – have shown a renewed interest in graduate transition to work (Brzinsky-Fay 2014, European Commission 2016, OECD 2016, OECD 2017).

From the policy side there has been an accumulating sense of urgency to address the issues surrounding graduate employment (Stern and Wagner, 1999, European Commission/EACEA/Eurydice 2016, OECD 2016). For instance, across the EU monitoring and improving successful transition to the labour market became one of the key priorities of the EU 2020 strategy (Boateng *et al.* 2011), graduate employment became one of the benchmarks in 2012 and the member states were invited to set up expert groups on graduate employment by 2014 (Council of the European Union 2012). The UK government has also been releasing graduate employment statistics on a quarterly basis since 2014 (BIS 2014).

The dominant way in which the policy-makers are framing the problem of graduate employment is in terms of the failure of the education institutions and graduates themselves to acquire labour-market relevant skills and become employable (for an overview of the employability discourse see Tomlinson and Holmes 2017). A good example of the dominant

policy discourse on graduate employment is exemplified in the following quote from the OECD Secretary-General Angel Gurría, from the launch of the OECD's new skill strategy:

Skills have become the global currency of 21st Century economies. They transform lives and drive economies. Governments must invest more effectively in the education and skills that people will need in tomorrow's workplace. They need to deploy talentpool more strategically so that these investments translate into better jobs and better lives. (OECD 2012a)

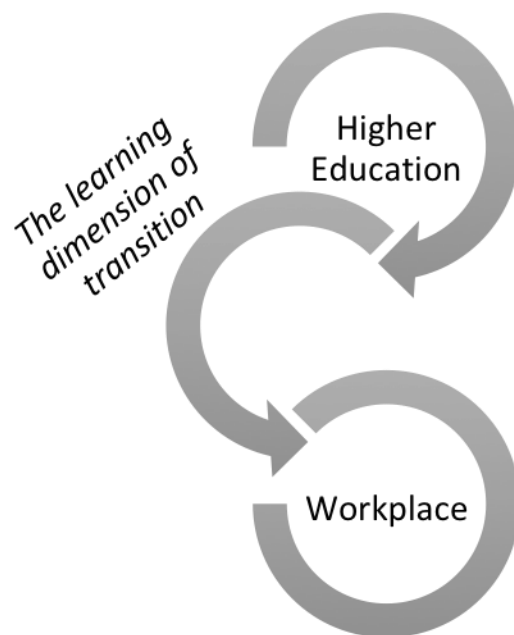
The OECD, as an influential international organisation in the field of education, expanded its focus from skills in compulsory schooling to adults' skills (OECD 2013a; OECD 2013b) and began developing an assessment tool for higher education graduates (AHELO) to determine what higher education graduates 'know and can do' (Tremblay *et al.* 2012). This was followed by a range of private sector initiatives seeking to annually rank universities across the globe based on the employability of their graduates (Emerging 2016, QS 2017). In contrast to this, the critical academic research, as I will show, has revealed the flaws of the dominant discourse of graduate employment by criticising the 'employability skills' discourse (e.g. Tomlinson 2017).

However, I will show that, despite renewed discussion about what skills (including personal attributes, identities etc.) make graduates employable, what is still missing from the broader critical research in graduate transition is a systematic enquiry into *what* graduates learn when they move from education to work that enables them to secure graduate jobs. To this end I will focus on internship, by which I mean the experience of movement between education and work for young people, secured through their own agency in order to develop their expertise. This differs from other research on internship learning, which has also adopted a learning perspective but focuses on the experiences of graduates in an internship in a particular sector (Lundsteen 2011).

The objective of this chapter is to show that there is merit in establishing an analytical focus on ‘the learning dimension’ of graduate transition to work. By the learning dimension of graduate transition I am referring to the learning trajectory or process of expertise development across the institutions of education and work (see Figure 2.1). This learning perspective on graduate transition to work stands in stark contrast to the traditional assumption that graduate learning ends upon graduation (Hesketh 1998).

To achieve my objective of showing why it is important to analyse the learning dimension of graduate transition I will undertake the following. First, I will briefly outline the current phase of graduate transition research.

Figure 2.1 The learning dimension of transition from HE to work



Secondly I will explore two gaps in the literature which need to be filled: (i) the meaning of the terms graduate skill and competence, and (ii) discussion of qualitative and quantitative research on graduate expertise in the literature on graduate transition. The existence of these two gaps, I will argue, is why the current phase of graduate transition policy and research

needs to take into account the analytical perspective of learning theories and conceptualise the learning dimension of graduate transition to work better.

2.2 The current phase in research and thinking on education to work transition: Unemployment, austerity and employability

There are at least three phases of graduate transition research that preceded the current phase since the 1950s (Goodwin and O'Conner, 2007). I will mention but not review the first three phases in detail, their main characteristics are outlined in the table (Table 2.1). I will focus on the key trends of the current phase of graduate transition to research and in particular on the trends that constitute two gaps in the contemporary graduate transition literature.

Table 2.1 Four phases of graduate transition research

	1950-1970	1970-1990	1990-2008	2008-
Economy	<p>Post-war economic boom of industrialised countries in the West</p> <p>National economies</p> <p>Low unemployment</p>	<p>Oil crisis, global recession</p> <p>Globalisation of economic markets</p> <p>Industrialisation of developing markets</p>	<p>Restructuring of capitalist economy</p> <p>New supranational blocks: the EU project</p> <p>Knowledge-based economies and ICT boom</p>	<p>Economic recession 2008</p> <p>Austerity measures</p>
Education and work	<p>Functionalist and human capital frameworks</p> <p>Education is preparation for stable and routine work in bureaucratic organisations</p> <p>Education provides people with general skills, while specific skills are picked up at work</p>	<p>Credentialist and human capital framework</p> <p>Realisations that the relationship between education and work can be ambiguous and contradictory</p> <p>Rise in numbers of educated youth, yet high unemployment</p>	<p>Role of education to supply highly skilled workers able to compete in global economy</p> <p>Tightened relationship between education and work, education as enabling successful work performance</p> <p>Decline of occupational labour markets and emergence of 'entry tournaments'</p>	<p>Oversupply, over qualification, graduatisation of jobs</p> <p>Graduates compete for entry to labour market not solely based on qualifications but also via internships, work experience, etc.</p> <p>Doubts about idea that there is constant growth for high skilled labour</p>
Graduate transition	<p>Linear unproblematic transitions</p> <p>Transition research: socialisation and youth culture</p> <p>Sociological research emerges as a discipline of youth studies</p>	<p>Sociologists critically engage with ideas around labour market and youth</p> <p>Emerging need to develop new conceptual repertoire to explain transitions of post-1970s generations</p>	<p>Transition patterns are non-linear and diverse</p> <p>Examining idea of skills and expertise</p>	<p>Graduate transitions complex and unpredictable</p> <p>Emerging need to examine concept of skills in relation to graduate transition to work</p>

To recap quickly, after the post-war economic boom in most Western industrialised countries (Wilson and Woock 1995) the transition to employment took place against the background of

the dominance of national economies, good welfare provision and bureaucratic organisational models (Wilson and Woock 1995). The dominant view of the time about the relationship between education and work was that of preparing students for their role in the organisational hierarchy by rewarding behaviours and skills related to rule-following, predictable outputs and routine (Brown *et al.* 1997). The belief in meritocracy, specific to the time, was bolstered by the view that work organisations and educational institutions operate on rational and scientific principles. In this period youth unemployment was low and transition to work of compulsory school leavers was considered to be 'unidirectional and linear' (Cieslik and Simpson 2013), albeit, as some have pointed out, following the trajectory of class reproduction (Bynner *et al.* 1997).¹ Moreover, the number of graduates was proportionally lower than today² (Bolton 2012).

Subsequently, from the 1970s onwards graduate transition took place against the backdrop of the restructuring of the global markets, limited economic growth and technological development (Wilson and Woock 1995; Brown *et al.* 1997; Cieslik and Simpson 2013). The context of graduate transition to work now involved increasing educational requirements for jobs and a rising number of higher education graduates (Payne 1985; Schofer and Meyer 2005; Bolton 2012). These developments contributed to educational qualifications becoming a less reliable predictor of labour market destinations. The received wisdom of the time, reinforced by human capital thinking, was that work was becoming more technologically sophisticated and, thus, that it required a more educated workforce with a range of relevant skills. In contrast to this, the critical researchers of the time argued that qualifications and years of education were not necessarily proxies for expertise but rather proxies for social group membership (Berg 1970; Collins 1971, 1979). For instance that qualifications signal to

¹ Nevertheless, in recent years some authors have challenged this view of seamless transitions to work and argued that oversight may be due to researchers focusing on structural aspects of transition and not individual accounts.

² For instance, in the UK the participation in the 1950s was 3.4 percent (as opposed to 33 percent in 2000)

potential employers the beliefs and values of the candidates associated with their social background).

Finally, from the 1990s researchers and policy-makers were getting to grips with the newly restructured capitalist economy by considering the knowledge-based economy as a strategy for the generation of wealth (World Bank 2002; European Communities 2004; Adler 2004; Keep 2012). In this context there was an awareness and recognition that (i) graduates as highly skilled are the main agents of the new economy (Drucker, 1993; Ashton and Green 1996), and that (ii) new forms of graduate expertise were emerging – the ‘symbolic analyst’ profile of worker that uses information to solve new problems and continually renew expertise (e.g. Reich 1991). The concept of ‘graduate skill’ and ‘graduate employability’ entered the vocabulary of policy-makers and researchers alike (Adler 2004; Keep 2012). The pervasive characteristics of the transition were the further expansion of tertiary education, a rising number of higher education graduates and the diversification of transition pathways relative to the completion of education and the commencement of working life (France 2007; Furlong and Cartmel 2007).

Finally, I take the current phase of graduate transition research to have started with the financial crash in 2008 and the 2010 Eurozone recession. The recession led to political polarisation which influenced policy uncertainty and slowed policy reforms more generally (Funke *et al.* 2015). Moreover, the effects of the recession worsened the living and working conditions for many young people across the OECD countries (Brzinsky-Fay 2014). The weakness of the *laissez-faire* approach of the market economies became apparent (e.g. the rise of inequality, economic instability), and ‘the ideological mood has changed rapidly’

(Hodgson 2009:1205) creating an impetus for more critical considerations of the new economy³ (Piketty 2014; Varoufakis 2016).

The idea of a knowledge-based economy that was previously policy and research orthodoxy was criticised for being ‘prescriptive and insensitive to real developments in the economy and workplace’ (Wyplosz 2010; Warhurst and Thompson 2012:43). The assumption that ‘the demand for skilled labour was really growing’ was under scrutiny (Green 2011:i). Instead it was argued that the increasing number of graduates and stagnant number of graduate jobs (i) led to an oversupply of graduates which spiralled into unemployment, over-qualification of graduates and 'graduatisation' of previously non-graduate occupations (James *et al.* 2013), and (ii) created a situation of intensified competition for graduate jobs in which the graduate market creates the ‘losers’ of the competition who have to settle for low wages and more precarious forms of employment (Brown, Lauder and Ashton 2011). This echoed the criticism from a decade before about the risk of ‘congestion’ and ‘overcrowding’ on the graduate labour market (e.g. Mason 2002; Brown 2003; Brown, Hesketh and Williams 2003).

In the context of protracted transitions and congested graduate labour markets there is an extended and delayed selection process of graduates due to the competition for knowledge intensive jobs (Mardsen 2007). Mardsen described this as ‘extended entry tournaments’ for graduate jobs (Mardsen 2007). To gain positional advantage graduates entering these occupations are increasingly more likely to ‘bear more of the cost of gaining experience’ (Mardsen 2007:980). As some researchers have suggested young people, with the support of their families, tend to take on different strategies to gain a competitive advantage on the graduate labour market (Brown, Lauder and Ashton 2011). For instance, internships have

³ This is also evidenced by the range of protests and social movements against inequality, austerity and corruption during this period, such as Occupy Wall Street in 2011, the anti-austerity movement in the United Kingdom in 2011, and the creation of new left-wing political parties such as *Podemos* in Spain in 2014.

become an increasingly common way for students and graduates to gain experience at work before their first employment (High Fliers Research 2015). However, in my research on graduate expertise development in an internship (see Chapters 7 and 8) I will use a different definition of internship (see also section 2.4).

Furthermore, in the current phase the concept of graduate qualifications and skills was criticised vehemently by researchers. Firstly, it was argued that that qualifications were not seen as a straightforward proxy for the skills of graduates, and skills were not seen as the determining factor of employment. For instance, the social background of candidates (Ashley 2010; Holmes *et al.* 2012), the prestige of higher education institution (Chillas 2010) and the type of qualification (de Lange, Gesthuizen and Wolbers 2014) all play a part in graduate employment. Secondly, some raised important questions about skill and expertise development and highlighted it is important for graduate transition researchers to be clearer about where and how the relevant work-related skills and competences are developed (James *et al.* 2011; James *et al.* 2013) and whether different types of skills need to be differentiated to capture better the graduate transition to work challenges.

In what follows below I will show that there are two gaps in the recent research on graduate transition to work that result from the loosening of the relationship between graduate qualifications, skills and employment.

2.3 Two gaps in the literature on graduate transition: The concept of skills and the two research paradigms

There are two gaps in the recent research on graduate transition to work that I will explore in more depth. The first gap is that although different stakeholders may use the same terms to describe the learning dimension of graduate transition to work ('skills' and 'competences')

these terms acquire a different meaning in policy, employment and research practice. The second gap is that graduate transition research tends to be polarised between large-scale quantitative and qualitative research. Whereas the former uses qualifications as aggregate measures of graduate expertise the latter focuses on the lived experience of transitions.

Figure 2.2 An overview of two gaps in the graduate transition literature



2.3.1 The gap between the policymakers’, employers’ and researchers’ concepts of graduate skill

Although different stakeholders may use the same terms (‘skills’ and ‘competences’) there is a tendency to treat the concepts that depict graduate expertise development as a ‘black-box’ so that the same terms (‘skills’ and ‘competences’) acquire different meanings in policy, employment and research practice. For instance, policy-makers see graduate expertise in terms of the accumulation of various domain-specific and generic skills certified through

qualifications and skills assessments. Employers approach graduate expertise in terms of the assessment of individual talent and ability to perform a particular job in a particular industry. Researchers differ in the extent to which they reflect on the meaning of graduate skill and competences.

Thus, to take the discussion between the stakeholders further, what needs to be clarified is, first, to what extent does the ‘skills and competence’ model reveal the relevant aspects of graduate expertise development, and second, what are the key learning challenges of graduates’ movement between education and work that are underexplored by the ‘skills and competence’ model?

Policymakers’ approach to graduate expertise

Policy-makers see graduate expertise in terms of an accumulation of various domain-specific and generic skills and competences as certified through qualifications and skills assessments. Qualifications and skills assessments are the two main ways in which policy-makers in education conceptualise graduate expertise. For instance, qualifications are proxies of expertise endorsed by the European Commission (European Commission [EC] 2013) and the standardised measures of key skills (e.g. literacy, numeracy and problem) are developed by the OECD (OECD 2013b). These two approaches to graduate expertise are seen as complementary. For instance, the OECD’s educational indicators are used for policy monitoring and formulation of recommendations by the EC (see Education and Training Monitor 2013, 2014) and the proportion of higher education graduates is one of the educational benchmarks set by the EU education strategy ‘EU2020’ (European Commission 2014).

There has been a shift in policy-makers’ thinking about graduate expertise away from qualifications and towards skills and competences as proxies for employment, and, more recently by new proxies such as the ‘experience of work’ (e.g. internships, traineeships). This shift from qualifications to skills and competence is exemplified in the outcomes-based approach to education that policy-makers have been advocating for and that underpins a range of large policy initiatives such as the National Qualifications Frameworks (NQF) initiative (see Mulder 2014). As shown in Table 2.2 the NQF initiative has been set up as a tool for ‘the modernisation of education and training systems’ (Bjornavold and Coles 2010:7) by re-describing the national qualifications systems in terms of (i) ‘statements of what a learner knows, understands and is able to do on completion of a learning process and (ii) the description of learning outcomes in terms of knowledge, skills and competence’ (European Parliament and European Council 2008:4). The skills, competences and knowledge that describe a qualification constitute ‘neutral descriptors’ of one’s expertise according to Bjornavold and Coles (2010).

Table 2.2 The logic of the NQF system (adapted from the official website) (European Commission 2017)

Levels	Knowledge	Skill	Competence
	In the context of EQF knowledge is described as theoretical and/or factual	In the context of EQF skills are described as: Cognitive (involving the use of logical, intuitive and creative thinking), and Practical (involving manual dexterity and the use of methods, materials, tools and instruments)	In the context of EQF competence is described in terms of responsibility and autonomy.

Furthermore, the OECD has been developing standardised assessments for skills and competences (Bottani 1994; Salganik *et al.* 1999). The OECD was one of the early

proponents of the competence agenda in education but their most well-known empirical research is precisely the assessment of the cross-curricular, generic competences or cognitive 'skills' (e.g. 'understanding, evaluating, using and engaging with written text' [OECD 2013b:21]). The link between the two types of competences, as I will show in subsequent chapter is 'a complex one' (OECD 2013b:96). Nevertheless, the generic skill/competence assessment at the national and regional level became another influential skills proxy (Chapters 3).

Employers' approach to graduate expertise

Employers approach graduate expertise in terms of the assessment of individual talent and ability to perform a particular job in a particular industry. Unlike the policy-makers who are focused on the types of skills and competences necessary for all the graduates, employers are interested in selecting the best graduates for the post with 'talent', 'ability', and 'potential' for leadership roles in particular industries (Pollard *et al.* 2015). In the context of expansion of higher education (i.e. the rising number of graduates) employers have become interested in attuning their selection practices so as to attract the best and brightest graduates (Brown and Hesketh 2004). In this respect, due to the aforementioned changes in the workplace, there has been a shift in employers' practices towards diversifying the pool of potential graduate candidates (Pollard *et al.* 2015). For instance, a trend in graduate recruitment has been (i) 'a move from job-related to person-related methods of recruitment and selection', such as attitudes and personality of applicants (Branine 2008) (see also the competence approach in the next chapter), and (ii) the use of internships to recruit graduates for jobs (Korkki 2011; Mortimer 2013).

In discussions between policy-makers and employers there is a widespread perception that employers are generally dissatisfied with the skills of graduates (Hay Consulting 2015). The

voices of employers in the skills debate are commonly represented through large surveys commissioned by policymakers. The surveys are focused on identifying trends in the skills that employers value. For instance, in Table 2.3 below I show some of the (generic) skills that employers reported as highly valued in new recruits. What is notable is that 'the use of the language of skills, abilities, attributes and so on has been introduced by those engaged in higher education policy matters, rather than emerging from employers themselves' (Holmes 2006:3). This had led some researchers to question the extent to which employer surveys are a good measure of their satisfaction with graduate recruits (e.g. Keep 2012; Pollard *et al.* 2015).

Table 2.3 Skills of graduates that employers highly value based on employer surveys

Sources	Highly valued skills
The International Employer Barometer (Archer and Davison 2008)	Communication skills, team working skills, integrity, intellectual ability, confidence, character/personality, planning and organisation, literacy (good writing skills), numeracy (good with numbers), analysis and decision making
Flash Barometer of Employers perceptions of graduate employability (Gallup 2010)	Team-working skills, sector-specific skills, communication skills, computer skills, ability to adapt to and act in new situations, good reading/writing skills, analytical and problem solving skills, decision-making skills, numerical skills and foreign language skills
Edge Foundation's Employees' perception of the employability skills of new graduates (Lowden <i>et al.</i> 2011)	Team-working, problem-solving, self-management, knowledge of the business, literacy and numeracy relevant to the job, ICT knowledge, good interpersonal and communication skills, ability to use own initiative but also to follow instructions.

Research approach to graduate expertise

Researchers differ in the extent to which they reflect on the meaning of graduate skills and competences (Tomlinson 2012). For instance, much of the educational research on graduates

routinely uses the concepts of skills and competences so as to capture aspects of graduate expertise (e.g. Katz 1993; Prince *et al.* 2004; Berridge *et al.* 2007; Bridgstock 2009, 2011).

However, some researchers have raised questions about the tendency among stakeholders to treat graduate expertise development (i.e. learning that leads to graduate expertise) as a ‘black-box’ without clarifying the nature of graduate expertise and the process of expertise development. A reflexive stance on skills is characterised by the research-based critiques of the dominant view of skill (Brown *et al.* 2003; Brown and Hesketh 2004; Cranmer 2006; James *et al.* 2011; James *et al.* 2013) and alternative accounts of graduate capability (Brown and Hesketh 2004; Tomlinson 2010).

Other researchers posed questions about whether graduate expertise is an individual property or a work-related quality (Attewel 1990; Stasz 2001) as well as to what extent disciplinary thinking shapes discussions about skills. For instance, whereas economists and psychologists consider skill to be largely an individual property, sociologists tend to see it as a property of work (Green 2013). Finally, researchers of workplace and professional learning in particular industries examined how and what graduates learn when they join a particular professional practice. For instance, research has been carried out on workplace learning of novice professionals (Lave and Wenger 1991; Eraut 1994; Billet 2002; Evans *et al.* 2006; Allan *et al.* 2015), the use of different forms of knowledge between education-based and work-based curricula (Evans *et al.* 2010; Allan *et al.* 2015) and internship as a site of expertise development (Lundsteen 2011; Guile and Lahiff 2011; Guile forthcoming).

This critical strand of research with a focus on the learning dimension of work represents a powerful alternative to the mainstream thinking outlined above. My research will follow on with this legacy of bringing the learning perspective into research on graduate expertise

development between education and work, extending this argument substantively and methodologically.

2.3.2 The second gap: Qualitative and quantitative research on graduate transition

In this section I will show that graduate transition research tends to be polarised between large-scale quantitative and qualitative research. Whereas the former uses qualifications as aggregate measures of graduate expertise the latter focuses on the lived experience of transitioning. This polarisation reflects the two longstanding paradigmatic research traditions of quantitative and qualitative research (Onwuegbuzie and Leech 2005) (see Chapter 6). The purpose of this section is to show that, despite some notable exceptions,⁴ the research on graduate transition has not systematically engaged with the mixed-methods argument in order to bridge the gap between qualitative and quantitative research. Thus, I will suggest, the learning dimension of graduate transition to work should consider the contribution of mixed methods research.

Quantitative studies of graduate transition

It has been argued in the literature that the surge in youth unemployment and increased interest of policy-makers resulted in the expansion of large-scale, cross-sectional and comparative quantitative research on transition to work in the 1980s and 1990s (Raffe 2014). Large-scale quantitative transition research became the dominant paradigm in transition research (see Cohen and Ainly 2000; Bynner 2001; Furlong, Woodman and Wyn 2011). The motivation behind much of the quantitative studies was to learn ‘what works’ in different

⁴ A classic example is the series of mixed method and comparative Anglo-German studies on the labour market transition which looked at transitions from vocational education to the labour market (see Bynner and Roberts 1991). Later studies involved following up some of the participants a couple of years later to understand typical transition patterns (see Evans and Heinz 1994) and exploring the trajectories of young people in East Germany adding more comparability to previous data (Evans, Behrens and Kaluza 2000; Evans *et al.* 2001).

countries (i.e. policies, measures, reforms) and could be emulated in other countries (Raffe 2014). In Table 2.4 the main international studies on graduate transition are listed.

Table 2.4 Large-scale survey studies on graduate transition adapted from Raffe (2014)

Year	Name	Description
1998	'From school to work'	Comparing national data on the association between education and work in 13 countries
2000	'Making transition work' (OECD 2000)	Synthesis of 14 national case studies of transition from initial education to working life
2001, 2003	'Comparative Analysis of Transitions from Education to work' (CATEWE)	Used European Labour Force Survey (EULFS) and integrated five national transition surveys
2003	'School-to-work Transitions in Europe'	Analysis of the ad hoc module of EULFS survey about school-to-work transition
2003	'Youth Unemployment and Social Exclusion'	10 country survey on marginalisation of 18-24 year olds
2005	'Educational Expansion and the Labour Market'	Five-country study of the effects of educational expansion on the relations between education and the labour market
2005/2009	GLOBALIFE project	14 country investigation on how national structures mediate the transition to adulthood
2006	CHEERS project	Survey of HE graduates in 12 countries to investigate characteristics of students, their competences and labour market outcomes
2008	'Transition from Education to Work in EU Neighbouring Countries' (ETF 2008)	Project that used EU Labour force survey ad hoc module to analyse transition of young people in three countries
2011	'REFLEX project'	Survey of HE graduates to investigate characteristics of students, their competences and labour market outcomes
2011	'Making the transition'	Comparing national data on the association between education and work in 10 countries

As evidenced above the large-scale transition studies either derived data from large-scale national surveys with general purpose (e.g. UK Labour Force Survey, cohort studies such as

the 1970s British Cohort Study, PIAAC data) or specifically designed surveys for graduate transition to work research (e.g. most of the studies in Table 2.4). More recently, with the increased popularity of monitoring of graduate transition to work, higher education activity data about graduates and their destinations six months after graduation is being regularly recorded (e.g. Destinations of Leavers from Higher Education (DLHE) in the UK).

The process of transition tends to be conceptualised in the quantitative research as ‘the period between the end of individuals' primary involvement in education or training and their stable settlement in a work position’ (Müller and Gangl 2003:1). However, there are debates about whether or how the quality of first employment should also be taken into account (Ryan 1999). The outcomes of transitions to work can also be expressed through occupational status, job satisfaction, match between graduates’ education and occupational status, security of employment and access to on-the-job training (Hannan *et al.* 1996). However, the speed of transition and the employment rate upon graduation are also commonly used proxies for the ‘smoothness’ of graduate transition to work (Boateng *et al.* 2011).

The findings of these studies converge around the point that graduate transition to work in Europe is generally smooth (Sagi 2009), especially five years post-graduation and that, relative to their peers without a higher education degree, graduates are faced with favourable opportunities on the labour market (Raffe 2014). For instance, Gangl (2003) the results of his analysis of the European Labour Force Surveys (EU-LFS) argues:

Hence, even if this evidence could be read as indicating some LM integration problems among university graduates, these certainly seem to be of a more transitory character. Highly qualified individuals are able to overcome the problems of finding an appropriate foothold in the market fairly quickly and with apparent ease. (p. 177-178)

Another important finding, especially for the empirical part of this thesis (Chapters 7 and 8), is that work placements and internships contribute the most to a successful transition to work (Lowden *et al.* 2011; Raffe 2014).

In Table 2.5 show the variables that graduate transition surveys use to describe the transition process. The aspects of transition the surveys take into account are prior education and training, educational achievement, biographical information, job seeking strategies and employers' recruitment practices (Teichler 2009:29).

Table 2.5 Variables used to describe the transition process in CHEERS and REFLEX

Survey	Input variables	Outcome variables
CHEERS Students graduated 1994/1995	Qualifications Years of schooling, grades, HE grades, courses, teaching methods	Current job (type of employment, type of work, sector, size and type of company, earnings)
REFLEX students graduates 2005/2006	Prior employment Training & apprenticeship Work experience during the degree	Job satisfaction (meets expectations, appropriate for level of education...)
	Time spent abroad Time spent abroad studying and working, Work experience during HE study	Security of current employment (permanent, temporary)
	Specific skills Experience with computer software, language proficiency; Lists of competences that graduates found they had that were useful to their jobs	Transitioning to work - Length of job search - Length of employment during the three years of graduation
	Socio-biographic attributes Age, gender, ethnicity	

Some researchers have pointed out the need for a more theoretically-informed approach to quantitative transition research especially with regard to how the process of transition is operationalised – whether as a ‘process’ or as a ‘one-off event’ (e.g. Brzinsky-Fay 2014).

Longitudinal data has been described as having the potential to capture these complexities (Brzinsky-Fay 2014). For example, cohort studies in the UK, such as the 1970 British Cohort

study (BCS70), which follows a group of people born in the same week, have been a useful resource with respect to the transitions of young people. This data enabled researchers to compare the educational and work patterns of several generations of young people (e.g. Brooks [2009] used the Youth Cohort Study of England and Wales [YCS]). Moreover, new longitudinal graduate research studies, such as the 'Next Steps' survey or LYSP (Longitudinal Study of Young People in England), contain information about the education and work experiences of young people in England, and thus provide interesting new avenues for researching graduate transitions quantitatively. However the use of longitudinal data on transition in policy research is still rare (Ryan 1999) with some good examples in Canada (e.g. The Youth in Transition Survey [YITS]).

Thus, in large-scale quantitative surveys the learning dimension for graduates is represented using well-established proxies such as qualifications and years of education. Moreover, the specialised surveys tend to take into account a wider set of 'learning related' factors such as work experience, involving a list of competences and questions about one's expertise. However, what is missing is the perspective on the agency of individuals to negotiate and make sense of their attributes and the opportunities they encounter. The longitudinal surveys on graduate transition have been praised for having the potential to capture the transition process more comprehensively, but these studies are still rare. In Chapter 7 I will analyse one of these surveys, REFLEX, in more depth to show that some of the variables from the data set could be useful for generating quantitative evidence about graduate expertise.

Qualitative research on graduate transition

In contrast to the quantitative research, qualitative research on graduate transition tends to focus on the lived experience of graduates who are making the transition to work, through interviews, focus groups, and diary methods. This is important as qualitative research offers a

unique insight into how social markers and personal and social characteristics of graduates are experienced, shaped and negotiated by individuals.

Graduate transition to work is typically researched sociologically in terms of how different social markers (e.g. gender, race, class) impact the experience of transition (Morley 2001; Schoon and Eccles 2014). Research into how the prestige of a higher education institution influences the opportunities of students upon graduation (Moreau and Leathwood 2006; Tholen *et al.* 2013) is a good example of this strand of qualitative work.

Furthermore researchers also qualitatively tend to explore the ‘complex interactions of individual agency and structural influences’ (Evans 2002:247). For instance, how graduates develop different strategies to present themselves successfully with employers (Brown and Hesketh 2004), how they develop their ‘graduate identity’ in the process of looking for work (Holmes 2015), or the ‘aspects of selfhood and emotional entanglements’ involved in life upon graduation (Finn 2017:421). Moreover, how employers use the construct of identity when hiring graduates (Hinchliffe and Jolly 2011) is considered.

Finally, in the domain of the sociology of youth (e.g. Furlong, 2009), transition to work is conceived more broadly as a ‘core transition to adulthood’ and ‘the backbone for implementing one’s aspirations and to coordinate participation in the spheres of family life, consumption and citizenship’ (Heinz 2009:4). This research perspective examines how young people learn to ‘navigate’ and ‘manage’ transition to work and adulthood, especially with respect to the wider social and historical context (Evans 2007; Heinz 2009). For instance, the experience of university students’ plans for the future during the economic recession (Aronson *et al.* 2015; Di Blasi *et al.* 2016) or the new living arrangements of young graduates (e.g. Heath and Kenyon 2001) are illustrative of this broader perspective on graduate transitions.

Thus, qualitative research takes a broader and more nuanced view of the graduate transition process in order to shed light on the specific aspects of the transition process (e.g. negotiating identity) or on the specific factors shaping the process of transition (e.g. gender, class, cultural capital).

2.4 The learning dimension of graduate transition to work: Gaps and research questions

In the previous section (2.3) I showed that the relationship between higher education and work in the contemporary context is characterised by simultaneous decoupling (i.e. unpredictability of labour market outcomes for graduates) and tightening (i.e. qualifications became necessary but insufficient for graduate employment) of the relationship between education and work. Moreover, the contemporary graduate labour market is characterised by an oversupply of graduates, competition and extended tournament for graduate jobs. In this context graduate transition to work has become protracted and individualised (i.e. the generational age markers of when to finish education, gain employment, start a family, have diversified). Moreover, graduates are expected to pursue different strategies in order to gain positional advantage on the graduate labour market, one of these being the use of internships.

There is a common sense meaning of internship which is usually associated with unpaid or low-paid work for the purpose of gaining work experience or a qualification (Burke and Carton 2013; English Oxford Living Dictionaries 2017). This differs from my definition of internship in which individuals exercise their agency to move between the boundaries of education and work. In other words, I will consider an internship as (i) a movement between education and work that students and graduates secured themselves, and (ii) as a site of expertise and identity development.

Finally, I showed that there are two gaps in the graduate transition literature with regards to the learning dimension of transition. The first gap is that graduate expertise is treated as a ‘black-box’ and that different stakeholders tend to use the same terms (‘skills’ and ‘competences’) for graduate expertise to denote different ideas about the performance of graduates at work. The second gap shows that graduate transition research tends to be polarised around the two paradigmatic research traditions: large-scale quantitative research, which uses qualifications as aggregate measures of graduate expertise (or direct skill assessment in the case of the OECD), or qualitative research, which focuses largely on descriptions of the transition experiences of young people.

My argument is that there is a need in critical research and policy to conceptually develop the learning dimension of graduate transition to work from the vantage point of robust learning theories. This focus on the process of learning would enable policy-makers, researchers and practitioners to move beyond the ‘black box’ concepts of skills and competences, and pose more relevant questions with regard to how graduates can be supported on their way to the labour market by relevant institutions.

In relation to the two gaps I identified I will formulate three research questions. The first research question will entail examining the value of skills and competences as learning concepts (Chapter 3). In other words, I will explore the learning status of skills and competence models of graduate learning.

Question 1: What is the learning status of skills and competence and what kind of learning model underpins them?

The second research question is related to the first and will entail drawing on robust learning theories to build a learning model of graduate transition to work which will focus on the challenges for graduates of moving between education and work.

Question 2: What are the main learning challenges that graduates encounter when transitioning to work that are not accounted for in the skills/competence discourse?

Finally, the third research question is methodological. It will explore how the learning dimension of graduate transition can be researched using a mixed-method design.

Question 3: What aspects of horizontal expertise assist graduates to overcome the learning challenge?

2.5 Conclusion

In this chapter I established the analytical focus of this thesis - the learning dimension of graduate transition to work. I showed that graduate transition research could be divided into four phases and that the last phase could be described in terms of two gaps that critical researchers need to address. The two gaps, I showed, suggest that it is necessary to examine (i) the extent to which the 'skills and competence' model reveals the relevant aspects of graduate expertise development such as the key learning challenges of graduates' movement between education and work, and (ii) the contribution of mixed-method design to researching the learning dimension of graduate transition to work. The three research questions I outlined above address these two gaps. Next I will show that skills and competences as models of graduate expertise do not reveal one of the key learning challenges of moving between education and work – the role of the context of learning and performing.

Chapter 3. The current learning dimension of graduate transition: ‘Skills and competences’ discourse

3.1 Introduction

In the last chapter I showed that skills and competences are the main analytical categories in research and policy discourse about graduate transition to work. In the ‘skills and competences’ transition model the learning challenges of graduate transition to work are framed in terms of graduate employability and the possession of generic and specific skills. I argue, as explained earlier, that the ‘skills and competences’ transition model provides only partial engagement with the issue of graduate transition. To explain why this is the case I will address my first research question: ‘What is the learning status of skills and competence and what kind of learning model underpins them?’ I will do this by examining the learning assumptions of the ‘skills and competence’ model of graduate learning. I will show that the skills and competence model does not reveal the real learning challenge of graduate transition to work, which is the challenge to successfully move between educational and workplace contexts, because it does not pay sufficient attention to the role of context in learning and performance.

The outline of this chapter is as follows. In the first section I will locate the term competence in relation to the practice of employee selection in order to show what made the concept attractive to educationalists. In the second section I will look at the main competence models in higher education, namely the ‘generic skills’ model and the ‘dual competence’ model. In the third section I will show that the ‘skills and competences’ model of graduate learning does not adequately capture the key learning challenge of graduate transition. The learning

challenge for graduates is to learn to perform successfully across the two different contexts (i.e. higher education and work) in a ‘competitive social world’ (Bridges 1993:43).

3.2 Competences and skills in the workplace

In this section I will show that the main shortcomings of skills and competence models in graduate transition discussions stem from the foundational ideas of the competence approach in personnel selection practice. I will show that, as a variant of the personnel selection model, the competence model is underpinned by ambiguous epistemological assumptions about the relationship between the individual, their performance and the (workplace) context.

Specifically, although competence approach promised to empirically focus on individual characteristics that underpin successful context-specific performance, it did not conceptualise what makes context-specific performance distinctive.

This is because, I will show, it inherited from the dominant, psychometric approach, to personnel selection the tendency to under-theorise the role of organisational context in individual performance and to describe the context in strictly empirical terms (e.g. through job or competence analysis). This ambiguity towards the role of context for human performance, as I will show in the next section (3.3), is carried over into the competence approach in education.

3.2.1 The competence approach and the classical selection model

Personnel selection is an organisation's ‘way to ensure that employees have the abilities to work’ by ‘matching the key knowledge, abilities, skills of candidates with the job demands’ (Gatewood, Field and Barrick 2015:3). The ‘skill matching’ principle between the characteristics of the job candidate and the requirements of the job is fundamental to

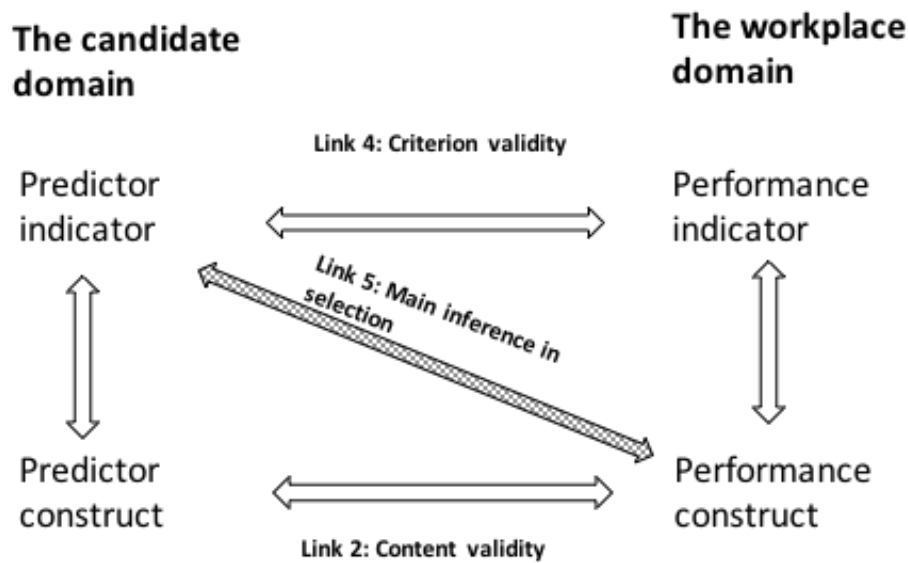
selection practice (Gatewood, Field and Barrick 2015:3) and, I will show, together with the competence model the matching principle has been carried over into higher education.

The decision-making process in personnel selection begins when an organisation has to develop a particular selection programme that will help make and justify hiring decisions. Below I show Binning and Barrett's (1989) model of decision-making in personnel selection, still highly relevant today in selection practice and research (Ployhart and Schneider 2012).

The model shows three sets of assumptions that underpin every personal selection programme (including psychometric and competence models): assumptions about the role of organisational context for successful performance, assumptions about successful candidates and assumptions about how candidate attributes and work performance are linked (see table 3.2).

When the human resource specialists create a selection programme they begin with the description of performance on a particular job and deduct a list of attributes of the candidate that underpins that performance. When selecting a job candidate the human resource specialists start with the candidate domain and, assuming that the main inference is correct, make generalisations about the performance of an individual in the workplace domain.

Figure 3.1 The classical selection model, adapted from Binning and Barrett (1989)



The psychometric model of selection emerged at the beginning of the 20th century in the historical context of industrialisation, the expansion in size and complexity of organisations, and the standardisation of work (Schultz and Schultz 2011). Personnel selection practice as a branch of occupational psychology was of particular importance, initially, to governments and the army and, subsequently, to business (Vinchur and Koppes Bryan 2012). The key emphasis in the psychometric approach is on the predictor domain. This domain is conceptualised in line with the legacy of differential psychology which examines individual differences in stable psychological characteristics such as ability, personality, and motivation (Chamorro-Premuzic et al., 2011: xvi). These were the key constructs that describe the underpinnings of a person’s performance at work (Schmitt 2012). Because of the focus on stable psychological characteristics that underpin performance of individuals in a variety of contexts (e.g. personality trait of consciousness is believed to affect person’s performance not solely in the workplace but variety of other contexts) the model does not give emphasis to the workplace context (Milward 2005; Ployhart 2006). The psychometric approach assumes that there are important commonalities across organisations in terms of what kind of candidate

attributes they need. As a result there is ‘an underlying belief that context is no longer important [...] for understanding performance at work’ (Ployhart and Schneider 2012:51).

Instead, we suggest that a neglect of context in selection research creates a scientific literature that is necessarily incomplete because it focuses on validity and not on the cumulative effects of context on elements of the personnel selection process and performance as well. We need to study personnel selection within the broader organizational context rather than ignore it or reduced it away with statistical methodologies (Ployhart and Schneider 2012:51)

Hence, the key aspect of the pervasive model of personnel selection practice is that workplace performance depends predominantly on individual attributes that person brings in the workplace and that match the workplace requirements. The generative role of workplace context is in this model backgrounded. This idea was to some extent retained in the competence model in the workplace.

In the 1970s the nature of work was changing rapidly, which brought about the need for recruiting a new profile of employees with a particular combination of skills and attributes (Fernandez-Araoz 2014). The new profile of worker – flexible and with diverse skills – was replacing the profile of the bureaucratic man (Adler and Heckscher 2006). It is in this context that the competence approach emerged in the 1970s as ‘a new technique’ (Boyatzis 2007) and a collection of ‘best practices’ (Campion *et al.* 2011) in human resource management (HRM) that could replace the ‘old fashioned and inflexible’ methods in personnel selection (Smit-Voskuil 2012).

The novelty of the competence approach in the selection practice is that it is focused on deriving a list of specific characteristics of persons (i.e. competences) that are closely related to successful organisational performance. What was implicit in this shift is that the competence analysis aimed to align selection with the goals of a particular organisation and thus align closely with performance and person indicators. In other words, there was a shift

towards greater appreciation of the context of performance. For instance, McClelland (1973) argued that the competence approach aims to bring closer together the performance and predictor domains ('the best testing is criterion sampling' p.7). This is illustrated in the following quote:

If you want to know how well a person can drive a car (the criterion), sample his ability to do so by giving him a driver's test. Do not give him a paper-and-pencil test for following directions, a general intelligence test, etc. As noted above, there is ample evidence that tests which sample job skills will predict proficiency on the job (McClelland 1973:7).

However, the competence approach made no significant contribution to developing the theory of performance. This was one of its main shortcomings. For instance, it is evident that the competence approach laid out by McClelland (1973) also conceives of 'context' broadly and in strictly empirical terms. The 'context' analysed to derive a set of competences could be a particular job, a company, a particular professional domain (e.g. management profession, service industry, army [see Viswesvaran and Ones 2002]) or, more broadly, a societal or life domain (e.g. person's communication skills, patience, goal-setting [see McClelland 1973:9]). Context was then analysed whereby excellent and average performing individuals are compared to derive key competences which differentiate the excellent performers from the average ones (the 'behavioural event interview' BEI method). Alternatively, a 'top-down' approach to analysing performance in context involves gathering information about the ideal candidate profile from organisational leaders, managers and co-workers. This 'trends driven' approach is pervasive in education (McClelland 1998; Campion *et al.* 2011) and particularly in generic skill model in higher education I will describe in next section.⁵

⁵ Whereas McClelland (1998) endorsed the first method, the latter he saw as an easy and inexpensive way to carry out competency analysis, albeit with modest 'accuracy' and 'effectiveness'.

Table 3.1 Comparison of psychometric and competence models based on the main dimensions of the classical selection model from Schippmann *et al.* (2000) in Smit-Voskuijl (2012)

	Psychometric model	Competence model
Performance domain	Knowledge, Skills, Abilities and Other Attributes (KSAOS) related to the job Job analysis results in job specification and worker specification	Competences that distinguish average from superior performances on job / competences that managers rate as highly relevant for the job Competence analysis (behavioural event interview or ratings)
Predictor domain	General and specific cognitive abilities (e.g. intelligence, numeracy, problem-solving); personality traits (e.g. Big Five personality traits model) IQ test, cognitive ability type, personality test, integrity tests	Competences as combinations of skills, knowledge and attributes important for successful performance in a particular context Criterion-based interviews, assessment centres, behavioural event interview
Inferential links	Criterion validity as the dominant form of evidence for relationship between predictors and performance	Content validity as the dominant form of evidence for relationship between predictors and performance

Therefore, on one hand the competence approach showed more sensitivity to organisational context when describing individual performance than the dominant psychometric approach (e.g. it is only concerned with those personal attribute that correlate with organisational performance). On the other hand, much like the other personnel selection models, did not define nor theorise organisational context. This led to the broad usage and meaning of the terms ‘context’ and ‘competence’ as denoting any individual attributes that underpin any successful domain performance. In other words, competence became both a ‘specific’ attribute (e.g. a communication competence of a senior economist in the equity research sector of HSBC bank) and a ‘general’ attribute (e.g. a communication competence of banking professionals). This ambivalence towards the context of performance is evident in the two dominant techniques that arose to empirically describe the performance domain: (i) the organisation-specific approach that incorporates corporate values, strategies and objectives into HR practices (Miller *et al.* 2001) and ‘links jobs to organizational goals and strategies’ (Schmieder and Frame 2007:86), and (ii) the broad-competence approach which refers to the

In this section I have shown that the competence approach operates on an ambiguous notion of performance in the workplace context.

Hence, what is missing from the workplace competence approach is a definitive conceptual account of the relationship between an individual (e.g. a job candidate), their expertise (e.g. ‘competences’) and the context of their performance (e.g. their ‘performance’ at work). This is important because this specific/generic skill ambiguity intrinsic in the competence approach to the workplace is carried over into the higher education sector as the problem of transfer of learning from higher education to work. This is evident in two models of competence in higher education that I will review next: generic skills and dual competence.

3.3 Competence models in higher education: Generic skills and dual competence

To return, briefly, to the argument of the previous chapter, graduate transition research led to a consensus that the role of education is to produce a highly skilled workforce. For this reason, higher education institutions in the UK came under increasing pressure from the late 1980s onwards to ‘vocationalise’ by aligning their provision with labour-market demands and ensuring that graduates have the abilities highly valued by employers (e.g. Bennett, Dunne and Carré 1999; Billing 2007). I will argue that both developments have contributed to the emergence of the competence approach in higher education and two models of competence (Table 3.4). The key aspects of the competence approach in the workplace that made it appealing in education was that competence approach positioned performance at the interface between the individual and the workplace (Sandberg 2000), and that it focused on learning that was occupationally relevant, practically applicable and assessable (Holmes 2001). To substantiate this contention I will show how the ‘competence approach’ from personnel selection practice is manifested in higher education, by outlining two competence models

which dominate the higher-education discourse, namely the ‘generic skill’ model and the ‘dual competence’ model. Moreover, I will show that both competence models assume that successful graduate transition to work rests on ‘skill matching’ between the skills employers need and those graduates possess.

The terms ‘competence’ and ‘skills’ first entered the educational vocabulary in vocational education and training (VET), with the competence-based approach in education first being developed for teacher education in the US in the 1970s (Bowden and Marton 1998), and in UK VET education in the 1980s. In the latter case, it was the context of high youth unemployment and economic restructuring that propelled the competence-based VET as a means to make education more responsive to employers’ needs (Holmes 2001).

In higher education (HE) the shift towards employability and ‘vocationalisation’ is seen as one of the main manifestations of the competence approach (Hyland 2006). This overlapping use of the term ‘competence’ in the workplace, vocational and higher education has led to well-documented confusion around the terminology of ‘competences’ and ‘skills’. In particular, the two concepts are sometimes used interchangeably and sometimes distinguished from each other (Winterton 2012) and the meaning of the term competence in education remains highly ambiguous (Mulder 2014; Vonken 2014).⁶ Moreover, some authors distinguished between the ‘competence agenda’ (an overall trend in education that encompasses different educational levels) and the ‘skills agenda’ that is characteristic of the higher education domain (Holmes 2001). This distinction reflects the fact that in higher education and graduate transition to work, skills and competences mostly have overlapping meanings. This will be evident in the two models I will review next: the generic skills model and the dual competence model.

⁶ Such as when the OECD defines competence as ‘more than just knowledge and more than just a skill. It includes elements of both, but it also involves attitudes’ (Keeley 2007: 61).

Table 3.2 Competence models in higher education

Competences: as prior learning that leads to successful performance in a particular domain and that can be assessed	
Generic skills model	Dual competence model
Prior learning as generic skills that could be used across different domains	Prior learning as skills, knowledge and attributes + the use and transformation of this learning in a particular context

3.3.1 Competence approach in higher education: The ‘generic skills’ model

In the previous section I mentioned that identifying occupational ‘generic competences’ was one of the features of the competence movement in the workplace. In education, the generic competence approach is manifested as the ‘generic skills’ view of graduate expertise is particularly pervasive in the policy domain and in higher education management. Some have argued that, for policy, the appeal of the distinction between the specific and the generic comes from the concern of policy-makers that ‘knowledge becomes out-dated in the modern world’ (Hokes 2001) and the logic behind the insistence that ‘if you do not know what the future situations will be, then teach students some fundamental skills which they can apply in any situation’ (Bowden and Marton 1998:93).

The generic skills approach in HE, as Figure 3.2 shows, differs from the generic competence view in personnel selection practice, because the generic skills approach tends to focus on skills, knowledge and attributes (i.e. ‘competences’) that graduates should have in order to be successful in *a range of occupations*. The ‘generic skills’ approach in HE, thus, puts less emphasis on performance in a particular business context and instead emphasises the characteristics of the individual that bear relevance for successful performance in the world of work more *generally*. Therefore, the generic skills approach (within HE) maintains the reference to workplace performance but in a more abstract or loose way. Moreover, the lists of desirable generic skills are not generated empirically through ‘competence analysis’ or

‘job analysis’ but tend to be devised using ‘common sense’ (Holmes 2001) such as asking relevant stakeholders what skills they deem important.

The generic skills model is pervasive in higher education discourse. Employers, policy-makers, universities and researchers all draw on this model to describe graduate expertise. For instance, the employer surveys I mentioned in Chapter 2 will often list the generic competences of graduates that employers highly value and researchers also devise lists of generic skills needed on the graduate labour market in the knowledge economy (Table 3.3). Furthermore, policy-initiatives for employment and higher education also draw on the generic skill model of the learning dimension.

Table 3.3 Key generic skills in the new economy (‘information society’) (Tynjälä 2008)

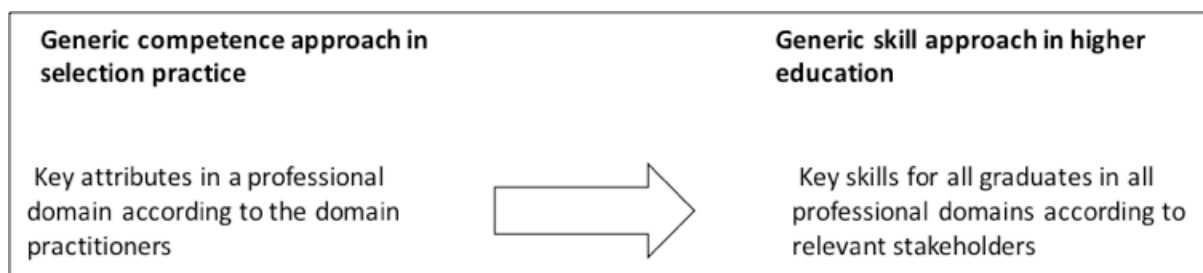
Characteristics of work in information society	Key skills and qualifications
The development of information and communication technologies; Globalisation	Computer skills, media literacy, critical thinking, problem-solving, adaptive expertise, language skills, cultural knowledge, tolerance, ethical attitude
Continual change, complexity and uncertainty	Learning skills, reflectivity, flexibility, adaptability, internal entrepreneurship, ability to handle pressure and uncertainty, progressive problem solving, adaptive expertise, innovativeness
Networking, teamwork, projects	Social skills such as oral and written communication skills, cooperation skills, presentation skills, boundary crossing skills, work process knowledge, adaptive expertise
Symbolic-analytic work	Abstract thinking, system thinking, knowledge use, experimentation, innovativeness, vision, progressive problem solving,
Person-to-person services	Social skills, adaptive expertise

For instance, at the EU level ‘European Skills, Competence and Occupation’⁷ (ESCO) adopted the distinction between ‘job and occupation specific skills’ and ‘transversal, generic

⁷ ESCO is a classification of European Skills, Competences, Qualifications and Occupations. ‘It identifies and categorises skills, competences, qualifications and occupations relevant for the EU labour market and education and training, in 25 European languages. The system provides occupational profiles showing the relationships between occupations, skills, competences and qualifications.’ See more here: <https://ec.europa.eu/esco/home?jsessionid=D4nWxDtG3WmWGFxcCpUyH8LmZTahaxYfTdRyCWQBT1HO1D7xwk!2145167444!1442417228614>

skills’ (e.g. aptitudes and values at work, language and communication, social skills and thinking skills). Similarly, the higher education TUNING project⁸ employ the distinction between ‘subject-specific’ skills that form the basis of the degree programme and ‘generic skills’, which refers to the *application* of what has been learnt (e.g. ‘language and communication’, ‘social skills and competences’ and ‘thinking skills and competences’). Finally, universities also employ generic skill language. The University of Cambridge⁹ have specified the key skills that their undergraduate students need to develop (e.g. ‘intellectual skills’, ‘communication skills’, ‘organisational skills’) and each of these skills contains a description of more specific cognitive operations. For instance, ‘intellectual skills’ involve ‘critical, analytical, synthetic and problem-solving skills’.

Figure 3.2 From generic competence in professional practice to a generic skills approach in higher education



Thus, the learning dimension of graduate transition in the generic skills approach is conceptualised as graduate skills that reflect prior learning of individuals and are relevant across different industry sectors and domains (what I call ‘decontextualised’ in the next chapter). The generic skills are often used in conjunction with ‘domain-specific skills’ bound within a particular occupational context (Holmes 2001; Jessop 2008).

⁸ TUNING ‘Educational Structures in Europe’ is a project that started in 2000 with the goal to ‘link the political objectives of the Bologna Process and at a later stage the Lisbon Strategy to the higher educational sector. Over time Tuning has developed into a Process, an approach to (re-)design, develop, implement, evaluate and enhance quality first, second and third cycle degree programmes.’ See more here: <http://www.unideusto.org/tuningeu/>

⁹ <http://www.skills.cam.ac.uk/undergrads/skills/>

However, this key characteristic of the model – the generic, context free skills – is, at the same time, its main weakness. The criticism of the generic skills model suggests that the role of the workplace context (or the context of performance of individuals) is not sufficiently accounted for in the generic skills model yet it is an important factor of individual performance. In other words, researchers have discussed how the generic skills model circumvents the question of how generic skills are actually used in different professional domains such as how the generic skills are ‘adapted’ so that they are ‘appropriate to that domain’ (Bridges, 1993:48), how can generic skills be conceptualised ‘independently of what the thinking and learning is about’ (Young 2009:2002) and how there is a lack of reference to knowledge that is necessary for successful performance (Norris 1991, 2008; Lum 2013). In the concluding section I will link this characteristic of the model with the problem of context.

3.3.2 The competence approach in higher education: ‘Dual model of competence’

The dual competence approach in higher education takes into account the difference between (i) learning and knowing something as a result of education (higher education context) and (ii) using and applying that learning at work to successfully perform tasks (work context). Hence, the main characteristic of this model of competence is its duality (see Table 3.4). This distinction is evident in the literature on competences such as the examples I outlined in approach ‘cognitive competence’ (Norris 1991), ‘integrated competence’ (Gonczi 1996), ‘continental’ competence (Le Deist and Winterton 2005) or ‘holistic competence’ (Mulder, 2014).

Table 3.4 Dual model of competence

'Attributes'	Behaviour in the context
Potential for performance expressed in knowledge, rules, cognitive rules, etc. (Norris 1991)	Performance in existing circumstances, task-oriented (Norris 1991)
Sets of knowledge, values, skills, attitudes, cognitive structures (Gonczi 1996)	Combination of attributes in order to undertake a particular task (Gonczi 1996)
'Competence' is a set of capabilities, clusters of knowledge, skills and attitudes, a condition for efficient performance (Mulder <i>et al.</i> 2009)	'Competency' is the behavioural, task-oriented element of competence (Mulder <i>et al.</i> 2009)

Relative to the generic skill model, the dual competence model introduced more explicitly the categories of knowledge and context-use into the meaning of competence (Le Deist and Winterton 2005). This made the concept of competence more applicable for the professional and higher education contexts (Gonczi 1996; Winterton 2012).

An example of the dual approach to competence is the OECD's work in education (Rychen and Salganik, 1999; Lin 2004). In what follows I will briefly focus on the OECD's model of dual competence. For the OECD a competence is 'the ability to successfully meet complex demands in a particular context through mobilization of psychosocial prerequisites (including both cognitive and noncognitive aspects)' (Rychen and Salganik 1999:43, 2004).

The duality in the OECD's concept of competence consists¹⁰ of (i) 'demand-oriented competence', which involves performing successfully in a particular context by responding to the demands of particular tasks and situations, and (ii) 'internal structure of a competence', which involves general cognitive skills (e.g. analytical thinking, metacognitive processes, reflective thinking and creative thinking) employed to respond to the demands of a particular

¹⁰ Competences are also seen as 'context-dependent' by which the authors mean that the competences result from an interaction between the individual and the social world, and, therefore both individual characteristics and the demands of the context must be taken into account when describing competences. This view of the individual and social nature of competences does not contradict, but in fact strengthens, the duality of the competence.

context. In the case of the former, competence is seen as 'functional or demand oriented', in that different domains of life put specific demands on individuals in relation to which they need to act. In other words, as Rychen and Salganik noted (2003:43),

The primary focus is on the result the individual achieves through an action, choice, or a way of behaving, with respect to the demands, for instance related to the particular professional position, social role, or personal project.

In the case of the latter (i.e. competence as an internal structure), it is argued that:

This demand-oriented approach needs to be complemented by a conceptualization of competencies as internal mental structures in the sense of abilities, dispositions, or resources embedded in the individual (Rychen and Salganik 2003:43).

For instance, Rychen and Salganik, in their publication for the OECD, give an example that the competence 'ability to cooperate' would involve knowledge, cognitive skills, practical skills, attitudes, emotions, values and ethics, and motivation related to the competence of 'cooperation'.

The duality of the concept is reflected not only in the conceptual, but also in the empirical work of the OECD. For example, in international assessments such as PISA (see Table 3.5), albeit in a different way, reading competence or 'literacy' may be defined, using the example of PISA, as 'understanding, using, and reflecting on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society' (OECD 2000:18). In the PISA assessment tasks in the questionnaire that measure reading proficiency differ along three dimensions. The first two dimensions refer to the performance domain ('functional' or 'demand-oriented' part) of the reading competence. The context of reading is described in terms of three domains in which the reading can take place (e.g. public, personal, educational) and the more immediate context of the text itself – whether it is continuous or discontinuous. It is assumed that these form particular demands for a person to respond to.

The third dimension, ‘cognitive operation’, refers to aspects of literacy that pupils did or did not demonstrate in relation to the functional demands.

Table 3.5 OECD's dual concept of reading or literacy competence in PISA

Functional aspect		Cognitive operation/skill
Domain in which reading skill is employed	Type of text encountered	Aspect of reading literacy
‘Personal’: texts read for personal interest and recreation (letters, fiction, biographies, etc.) ‘Educational’: texts selected by teacher and used for the purpose of instruction ‘Public’: reading texts in order to participate in society e.g. official documents ‘Occupational’: reading texts that are related to the workplace	Continuous text (narrative; descriptive, argumentative) Discontinuous text: (charts, graphs, maps, etc.)	Retrieving information Broad understanding Developing an interpretation Reflecting on Content Reflecting on form

However, the model does not provide an explanation of what the differences between knowing something and using it in the context are and why they may occur. It is not clear how application to the context is achieved. For instance, the OECD’s DeSecO framework (see Rychen and Salganik 2003) mentions that transfer akin to 'adaptation' that is 'active' and 'reflective' is necessary if one is to show competence across different contexts. However, this mention of transfer is not integrated into the framework or the empirical work.

Moreover, it is not clear what makes reading skill different with respect to educational, public and personal texts. The reason for this, it could be hypothesised, is that the roots of the dual competence model lie in the underdevelopment of the concept of context in the competence approach and, consequentially, the lack of appreciation for the challenge of learning across

contexts. In the next section I will focus on describing the issue of ‘learning across context’ in more detail in the next section.

3.4 The competence/skills approach and learning across contexts

So far I have shown that the skills/competence discourse in higher education operates within two models of graduate expertise: the generic skills model and the dual competence model. The generic skills model implicitly assumes that the generic skills graduates need in the labour market are context free and applicable across a range of situations. The dual competence model operates on an assumption that there is a difference between the contexts in which knowledge and skills are acquired (e.g. HE, but also everyday life) and the context in which these skills are used (i.e. the world of work). In this section I will argue that the two models (generic skills and dual competence) and, by extension, the skills/competence discourse in higher education cannot be conceived of as models of graduate learning.

The main weakness of the generic skills and dual competence models in HE, that prevents them from qualifying as learning models on which educational reforms should be based, is that they do not take into account the problem of learning and performing across contexts, and in particular, the concept of context (also ‘domain of situations’ or ‘professional domain’). Because of this conceptual problem the models downplay the importance and the challenge of learning across different contexts, such as higher education and work.

Researchers, for several decades now, have pointed out that the competence model in education has a learning across contexts problem (or the ‘transfer problem’). Namely, they highlighted that key challenge for learners is using their skills and knowledge in actual contexts (1996) and applying knowledge in context in order to develop professional

judgement (Grant 1999) not solely to acquire a generic disposition. The reason for the learning across context problem, I argued, is that competence approach does not theorise human performance in the real world. For instance, some have argued that it is precisely a theoretical underdevelopment of the competence approach that contributes to the ‘demise’ of the competence model in education (Hyland 2014:167; Vonken 2014).

Thus, the generic skills and dual competence models operate on the idea of transferability of learning from education to work, but do not sufficiently explain how this transferability of learning across contexts is achieved. The generic skills model operates with the idea of transferability as an intrinsic property of generic skill and what gives generic skills their transferability is the extent to which the skill is free from particular domain-specific content. In other words, what makes skills (e.g. problem-solving, critical thinking, and communication) *generic* is that they can refer to any knowledge domain (e.g. having good communication skills would be beneficial to a person communicating in a company or communicating in the context of an English language and literature degree).

The dual competence model deals with transferability not by differentiating two types of skill (generic and specific), but by dividing the competence into two components (the general and the applied) and saying that one of the components refers to the learning that has been applied correctly to the demands of context. However, it is not clear *how* this is achieved. In other words, the idea of transfer is implied and assumed, but transfer does not have a theoretical underpinning.

My argument is that graduate transition or - as it is expressed in the lexicon of the thesis - learning across contexts needs to be explicitly conceptualised in a learning model of graduate expertise for at least two reasons. First, learning across contexts (in the literature, as I shall explain in Chapters 4 and 5, this is also referred to as ‘transfer’, ‘changing participation’,

‘consequential transition’, and ‘recontextualisation’) is a key element of any learning model or theory because the whole enterprise of education and training is based on the idea that learning in education (e.g. skills, competences, abilities) has some positive effect on subsequent performance at work. The close link between the learning and learning across context (conceptualised as ‘transfer’) models is most evident in the ‘transfer’ literature which says that the new context is a ‘test-bed for learning and performance theories’ (Singley and Anderson 1989:1) since measures of transfer are routinely considered to be measures of the success of learning (Pea 1987).

The second reason is that the above assumption fails to acknowledge that the process of moving between contexts is in itself a learning experience for graduates. As I have shown in Chapter 2 this experience of moving between education and work became an important factor for employers who value the expertise of students and graduates with work experience. Moreover, as I will show (Chapter 5), there is a need for the expertise that emerges from the movement between different contexts to offset the increasing professional specialisation and ‘avoid fragmentation’ (Akkerman and Bakker 2011a:132).

Thus, learning across contexts is not only the 'central' part of the learning process (Bransford, Brown and Cocking 1999:39) that learning models need to take into account but it is also an intrinsic assumption of graduate transition to work and an important feature of graduate expertise development. What this means is that the problem subsequent chapters need to address is how to develop a model of graduate transition to work which takes into account the challenge of learning across contexts.

To conclude the discussion on graduate expertise and the skills and competence model, I will draw on Bridges’ (1993) distinction between (i) *the concern* for graduate expertise embedded in the skills and competence model, and (ii) the *model* of graduate expertise that underpins

the skills discourse. Based on what I have argued in this section, it could be concluded that the skills discourse as underpinned by the generic skills and dual competence models is closer to the first expression - an articulation of the concern for graduate expertise - rather than being a viable learning model on the basis of which educational reforms should be executed.

3.5 Conclusion

In this chapter I have shown that skills and competences as analytical categories and as models of the learning dimension of graduate transition to work have significant shortcomings. The main challenge of the skills and competences models is that they operate on an underdeveloped notion of the context of learning and performance which leads them to underestimate the learning challenge of graduate transition to work, namely learning across the contexts of higher education and work. This is, as I have shown, due to the legacy of the classical selection model in the competence approach, which is predominantly focused on predictor domain and on empirically but not conceptually describing performance within the workplace context. In higher education the skills and competence model addresses the context problem by either suggesting that key elements of graduate expertise are context-free (generic skills) or that they are both context-free and context-specific (dual competence) without justifying why this is the case. I concluded that the skills and competences model is closer to being an expression of the concern for graduate expertise than a robust learning model of graduate expertise.

Thus, what became clear in this chapter is that the critical research on graduate transition to work needs to examine what graduates learn when they move between the contexts of higher education and work. For this reason I suggest that it is necessary to conceptually develop a

new model of learning in graduate transition to work that will explicitly take into account the learning across contexts challenge of graduate transition. I will discuss this in the next chapter.

Chapter 4. The learning dimension of graduate transition: Learning across contexts

4.1 Introduction

Previously I established that the aspect of the learning dimension of graduate transition to work that the skills and competence model insufficiently sheds light on is the challenge of learning across contexts. The challenge of learning across the contexts of education and work is not only the key aspect of graduate movement to work but also it is a key element of robust learning models. Thus, a new model for the learning dimension of graduate transition to work is needed – a model which explicitly takes into account graduate learning across contexts. In this chapter I will begin to develop this new model and address my second research question, ‘What are the main learning challenges that graduates encounter when transitioning to work that are not accounted for in the skills/competence discourse?’ This will pave the way for the introduction of an alternative model of graduates’ learning across contexts in the subsequent chapter (Chapter 5).

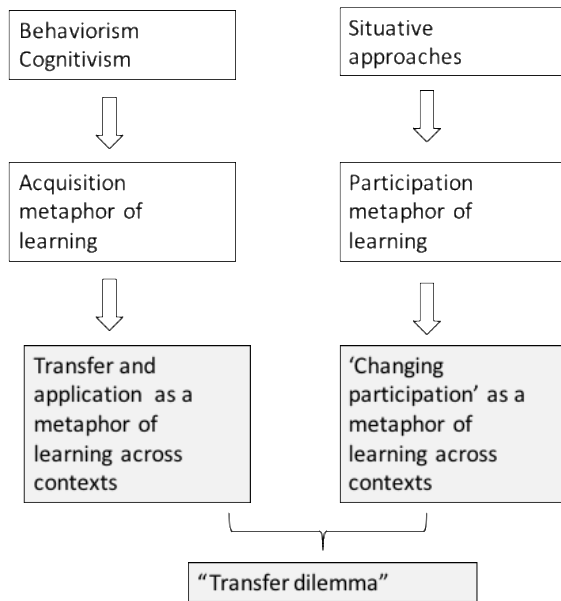
In the following sections I will argue that the situative approach provides the most relevant account of learning across contexts for graduate transition to work because it (i) theoretically conceptualises context (e.g. in terms of social practices and specialised communities that embody the practices), and (ii) it researches how learning unfolds in complex real world settings. Subsequently, I will also show that some of the classical situative approaches place emphasis upon learning in context at the expense of developing alternative situative accounts of learning *across* context. I will describe this issue, the transfer dilemma, and then pursue its implications in the next chapter.

4.2 Learning across contexts: Three models

Learning across contexts is 'the most actively studied phenomena in psychology' (Detterman 1993:5) and it remains 'an important test-bed for learning and performance theories' (Singley and Anderson 1989:1; Catania 1992). In learning research learning across contexts refers to the process and outcome of using prior learning in a new way so that the prior learning impacts performance in a *novel* situation (De Corte 1987; Butterfield et al 1993). Learning across contexts is embedded in the idea of education as preparation for work because it assumes that prior learning transfers 'from one problem to another within a course, from one year in school to another, between school and home and from school to workplace' (Bransford, Brown and Cocking 1995:39).

In this chapter I will focus on theoretical discussions on learning across context. In this sense, as will become clear in this chapter, although the skills and competence models have some similarities to the 'acquisition metaphor' of learning, what makes them substantially different from the actual learning approaches of the acquisition metaphor is precisely the absence of consideration and explanation for learning across context that both behaviourist and cognitivist theories encapsulate.

Figure 4.1 Learning across contexts: Approaches, metaphors and the transfer dilemma



In the following two sections I will broadly outline three conceptual approaches to learning across contexts that have been the most relevant for the learning across contexts debate (see Table 4.1 for three main approaches) in order to show how the situative approaches provides the most relevant account of learning for the concern of this thesis. The outline and connecting threads of the argument are presented in Figure 4.1 and culminate with the so called ‘transfer dilemma’ in the literature.

Table 4.1 Three main learning approaches in the learning across contexts debate

	Behaviourism	Cognitive Psychology	Situative accounts
Philosophical Underpinnings	Underpinned by empiricist assumption; experience as the main source of learning and skill	Underpinned by rationalist assumptions	Underpinned by phenomenological and dialectic approaches
Zeitgeist	Positivism and call for objective social science, turn of the 19 th century	Technological development, artificial intelligence of the 1960s	Civil rights movement, multiculturalism, turn towards culture
Model of Mind	Model of mind as automata or clock	Model of mind as a computer processing information	Culture as a model of mind, (i.e. culture as a superordinate concept, individual mind as being socialised into the culture)
Research programme	Focusing only on observable behaviour	Shifting the focus of the research onto the learner and his/her computational mind	Focus on the interaction and mutual influence of sociocultural environment and the person
Learning assumptions	Learning can be described without any reference to cognition and by using simple learning principles such as establishing an association between the stimulus (world) and reaction (behaviour)	Learning is described with reference to cognitive structures and processes. Constructivism, a reaction to hard-line cognitivism focuses on construction of meaning through experience	Learning is described with reference to socialisation/apprenticeship into community and proficient participation in different educational and professional communities.
Learning metaphor	Acquisition	Acquisition	Participation
Learning across contexts metaphor	Transfer and application	Transfer and application	Changing participation in changing context
Implications for the learning dimension of graduate transition	Learning in HE and at work by accumulating experience and forming associations between input and output through trial and error, modelling, etc.	Learning in HE and at work by developing cognitive structures and processing in order to process more complex information faster	Learning in HE and at work through socialisation and membership in educational and workplace practices

4.2.1 Experimental learning models in psychology: Behaviourism and Cognitivism

Behaviourism and cognitivism are two influential psychological approaches to learning and they have had a long tradition in learning across contexts research. They are similar for adhering to experimental methodology (Bower and Hilgard 1981) and for being modelled on

the natural sciences (e.g. Teo 2005) but they differ in the unit of analysis (see Figures 4.2 and 4.3) and the analytical focus (behaviour and cognition, respectively).

The behaviourist approach to learning was influential from the beginning of the twentieth century until the 1960s¹¹ (Bolles 1979), and it emerged in the intellectual climate characterised by the rise of positivism in social science (Schultz and Schultz 2011) and empiricist assumptions about learning (Bower and Hilgard 1981). A sensory experience is the main source of knowledge and that the main mechanism of learning is the association between experiences and ideas. The metaphor of the human mind that behaviourism draws from 17th century ideas about a ‘mechanistic universe’ and the ‘mind as a clock’ or the ‘mind as automata’ (Schultz and Schultz 2011:2). Since behaviourists treated the mind as a black box the association between sensory experiences embedded in the learning process was represented as ‘stimulus-behavioural response (S-R)’ (see Figure 4.2.) and this was the basic unit of learning research.

Figure 4.2 The main unit of analysis in behaviourist research on learning



I illustrate the influence of behaviourism on transfer below through a discussion of the seminal work of Thorndike (1914, 1917), which is still influential in transfer discussions. I acknowledge but do not address the extensive legacy of behaviourist thinking in education, for example, the debate about ‘learning outcomes’ (MacDonald-Ross 1973; Eisner 1979).

¹¹ Even in the heyday of behaviourism alternatives to mainstream thought were already germinating, especially outside the United States, such as in the context of the Gestalt school in Germany, Piaget's work in Switzerland, Luria in Russia, and Bartlett in England (Anderson 2000).

Behaviourism and Thorndike: Specific transfer of specific skills

Behaviourist research into learning transfer began as a reaction to the dominant view of learning in the early 20th century that was underpinned by ‘faculty psychology’. Faculty psychology posited that the mind has several broad faculties (e.g. affection, cognition, volition) which can be exercised and enhanced through education. For instance, learning a subject such as Latin would improve the general cognitive power of mind (Lewis 1905) and act as ‘mental orthopaedics’ for future learning (Wolf 1973 in Mayer and Wittrock 1996). Based on this view of learning across contexts successful graduate expertise would depend on graduates developing and exercising broad sets of mental faculties which could be useful in a variety of jobs.

Behaviourist research on transfer began with Thorndike, who set out to disprove the formal discipline thesis (Bower and Hilgard 1981) through a series of experiments which later formed the foundations for his ‘theory of identical elements’ (Thorndike and Woodworth 1901; Thorndike 1914, 1917). Thorndike and Woodworth (1901) showed empirically that the improvement of performance in one mental skill (e.g. accuracy in multiplication) does not correlate with the improvement in the closely related cognitive skill (e.g. accuracy in word spelling). In his ‘theory of identical elements’ Thorndike argued that the learner’s performance in a new situation is always constituted through some prior learning and knowledge. Every performance can be described by either inborn responses (reflexes) or the previous learning that took place in a similar situation (Bowel and Hilgard 1981). In the behaviourist spirit he concludes that instead of training the general skills of the mind the scientifically-sound recommendation is that:

Training of the mind means the development of thousands of particular independent capacities, the formation of countless particular habits, for the working of any mental capacity depends upon the concrete data with which it works. Improvements of any

one mental function or activity will improve others only in so far as they possess elements common to it also. The amount of identical elements in different mental functions and the amount of general influence from special training are much less than common opinion supposes. The most common and surest source of general improvement of a capacity is to train it in many particular connections (Thorndike 1917:248).

Thus, successful learning across contexts occurs when a learning situation (situation A) is very similar to the situation in which transfer occurs (situation B) (i.e. the two situations share identical elements).¹² When applied to graduate transition to work, successful learning across contexts for a graduate would occur (i) if graduates were taught in higher education precisely those skills and capabilities that are needed at work (or trained), and (ii) by structuring the learning environment to make it mirror as closely as possible the world of work (e.g. Detterman 1993)

Cognitivist approaches to learning across contexts

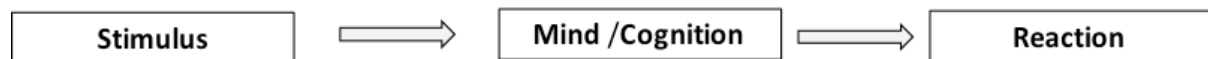
The changing intellectual climate of the early 20th century (e.g. the paradigm shift in physics, technological development and development in artificial intelligence on simulations of psychological processes) paved the way for the emergence of cognitive psychology as an influential approach to learning (Schultz and Schultz 2011). In psychology this shift is marked as the ‘cognitive revolution’ (Neisser 1976) and represented the move away from the behaviour of human subjects towards what was previously considered a black box: the mind or human cognition. In 1976, Neisser, one of the founding figures of cognitive psychology (according to Schultz and Schultz 2011:5), wrote:

Mental processes have again become a lively focus of interest. A new field called cognitive psychology has come into being. It studies perception, memory, attention, pattern recognition, problem solving, the psychology of language, cognitive development, and a host of other problems that had lain dormant for half a century.

¹² Moreover, Thorndike did not specify in more detail what the ‘identical elements’ were precisely (Singley and Anderson 1989), but in the subsequent transfer literature this was typically seen to mean shared features of physical environments or common stimulus elements (Lobato 2006).

In terms of the unit of analysis, as shown in Figure 4.3, the focus was on mind/cognition as the main mediator of stimulus and reaction relationships (Bower and Hilgard 1981; Lobato 2006). The model of mind that cognitive psychologists adopted was based on the analogy of a computer and it included ‘a new set of concepts for dealing with cognition; terms like information, input, processing, coding, and subroutine soon became commonplace’ (Neisser 1976:6)

Figure 4.3 The main unit of analysis in cognitivist research on learning



Learning in this approach is closely associated with memory and with the process of (i) storing information in the form of representations, and (ii) encoding them in a way that makes the retrieval of these representations easier (Hirst and Manier 1999). The expertise in this model is explained as superior encoding and retrieval strategies, and the way that representations are organised. This also has implications for the role of context in cognitivist approaches. It was argued that:

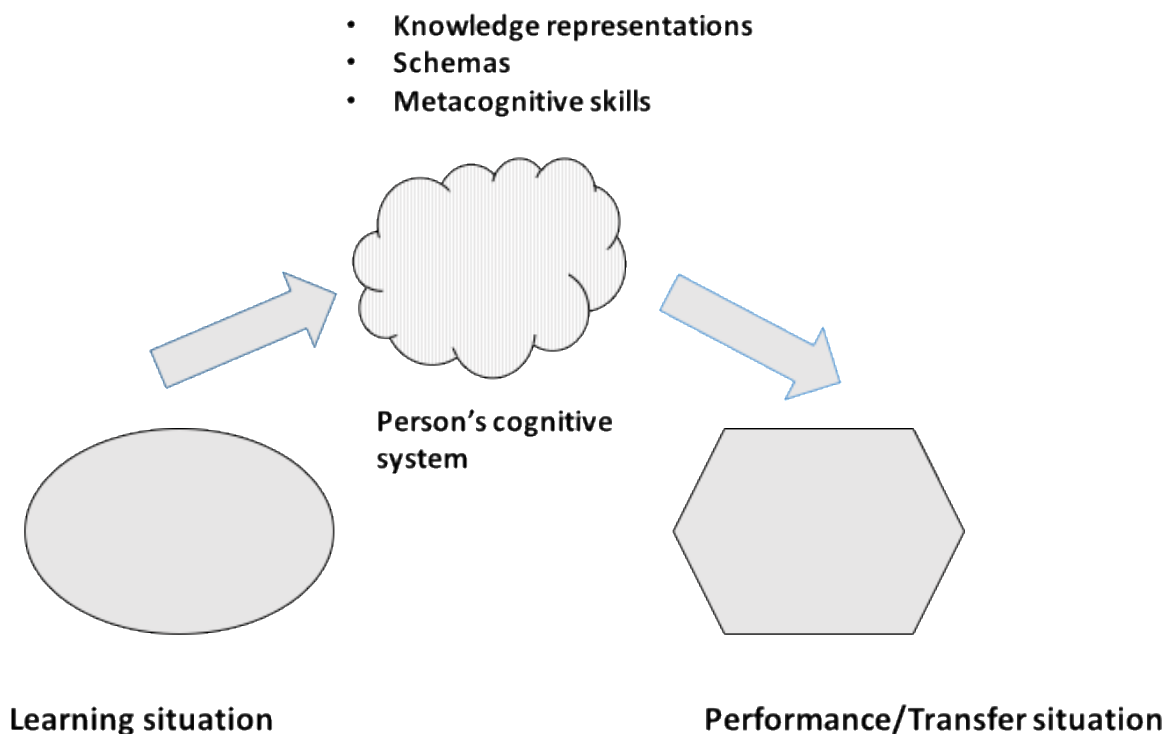
By trying to explain content and context effects merely in terms of internal representations and mnemonic strategies, cognitive psychologists are implicitly accepting that somewhere, deep below the surface, they can find a quantifiable mnemonic capacity independent of content and context [...] Models based on this approach assume a fixed, universal representational language and fixed, universal cognitive machinery that manipulates this language (Hirst and Manier 1999:102).

However, this particular orientation of the cognitivist approach (e.g. laboratory experiments and lack of interest in context) was criticised as ‘lacking in ecological validity’, ‘indifferent to culture’ and ‘even missing some of the main features of perception and memory as they occur in ordinary life’ (Neisser 1976:7). In what follows I will briefly outline four key cognitive approaches to learning across contexts.

Cognitive views of transfer: Transfer of both specific and general skills

Cognitive transfer research began in the mid-1970s and the common premise of the cognitivist approaches with respect to learning across contexts is a focus on knowledge representations (Singley and Anderson 1989). A successful transfer depends on insight and understanding that individuals gained by performing an initial task (or a learning situation, as in Figure 4.4) which results in a change in the person (as in a new representation, schema or metacognitive skill). Subsequently, in the performance or transfer situation the requirements of the task call for this particular representation/schema/ metacognitive skill (Gick and Holyoak 1980). The success of transfer depends on the extent to which participants were able to see the relationship between the problem in the learning situation and the problem in the performance situation (Reed 1993). In Figure 4.4 I show three influential models of learning transfer in cognitive theories (Tuomi-Gröhn and Engeström 2003; Leberman, McDonald and Doyle 2006): representation, schema and metacognition model.

Figure 4.4 Cognitive approaches to transfer



The information-processing approaches represent learning and transfer as input-process-output. With this approach input is considered to be the information, process involves a range of cognitive processes that involve encoding, storage and retrieval, and output would refer to the application of the encoded information in a similar or entirely new setting (Gick and Holyoak 1983; Singley and Anderson 1989; Leberman, Mcdonald, and Doyle 2006).

The schema model presumes that successful transfer depends on making connections between the existing learned symbolic schema and (the representation of) a new situation, and applying or transferring the learning (Greeno *et al.* 1993). Schemas are more complex knowledge structures than representations that become more nuanced and sophisticated through experience (Gick and Holyoak 1983; Reed 1993). What gives them ‘transferability’ is their predictive character, because they enable individuals to create expectations and predictions of what conventions are in a particular situation (e.g. what to expect in a classroom as opposed to a pub) (Reed 1993).

Finally, metacognition is ‘one’s knowledge concerning one’s own cognitive processes and products’, as well as a process of ‘active monitoring and consequent regulation and orchestration of these [cognitive] processes’ (Flavell 1976:232). The role of metacognition in transfer is that it enables learners to ‘recognize the requirements of the new problem, select previously learned specific and general skills that apply to the new problem, and monitor their application in solving the new problem’ (Mayer and Wittrock 1996:50). Within this framework the success rate of transfer depends on the learner making a connection between the problem in a new situation and the old prior learning schemas in order to modify and adapt them to the current context (Leberman, Mcdonald and Doyle 2006). The metacognitive view of transfer is still an influential concept of transfer to this day (e.g. Ford *et al.* 1998; Zimmerman 2002).

4.2.2 Situative psychological approaches to learning

Situative accounts of learning emerged in the 1980s due to a growing dissatisfaction with the capacity of cognitive models of learning to capture the complexity of human cognitive activity (Sawyer 2006) and disillusionment with the information-processing paradigm (Hirst and Manier 1999). It is important to note that situative approach is heterogeneous and for this reason I will use Greeno's (2009) term 'situative' to encompass broadly several specific schools of thought such as sociocultural psychology, activity theory, distributed cognition and ecological psychology. However, in the next chapter I will draw on a specific strand of the situative approach, namely CHAT (Cultural-historical activity theory), to pursue the implications of the 'transfer dilemma' (see section 4.3) and develop a CHAT-based framework for graduate learning across context.

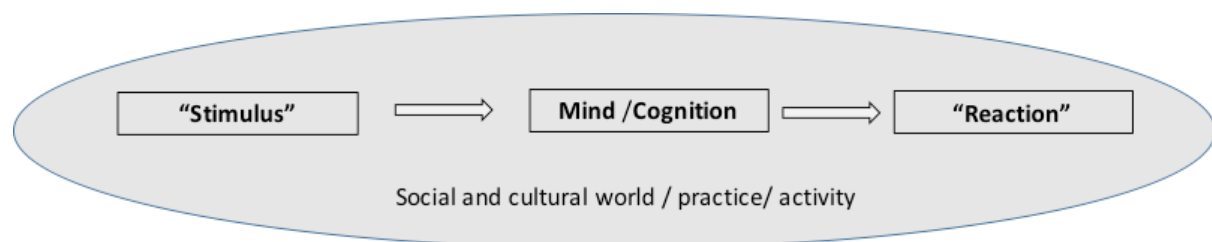
The distinctive model of mind in the situative approach is, according to Bruner (1996), a culturalist one. Culture is a superordinate concept in the situative approach, as it constitutes the minds of individuals by supplying people with resources for thinking, meaning-making (e.g. concepts, language, symbols) and ways of acting and interacting in a society (e.g. institutions, norms and obligations). Learning is seen through the analogy of immersion or enculturation into a particular social and cultural domain, such as a profession, trade or academic discipline. In this sense, apprenticeship-type learning is a good analogy for the situative approach to learning (Lave and Wenger 1991). The knowledge and skills held by individuals are seen as cultural tools appropriated by individuals, such that:

They can only be fully understood through use, and using them entails both changing the user's view of the world and adopting the belief system of the culture in which they are used. (Brown, Collins and Duguid 1989:33)

The main unit of analysis is, thus, always an interaction between people and a wider community or a system (i.e. a context). In Figure 4.5 I demonstrated that the key element

which the situative approaches introduced to the psychology of learning was broad conceptualisation of context as social world or activity in which the subject (mind/cognition) is immersed (Leontyev 2009). The creation of stimulus-reaction associations or the creation of cognitive representations and schemas are, in situative approaches, described in terms of participation in a practice (i.e. being part of and contributing to an activity).

Figure 4.5 The main unit of analysis in situative research on learning



The situative approach to learning across contexts

The classical transfer research of early behaviourist and cognitivist researchers at the end of the 20th century transfer research was criticised by the situative researchers who studied cognition in ‘the informal, intuitive, context-embedded, everyday world’ (Lave 1988:71).

The focus on how learning across contexts develops in a real world context began with empirical critiques of behaviourist and cognitivist research on transfer such as a series of studies questioning the validity of laboratory-based experimental transfer research. A number of situative studies challenged the idea that mathematical skills in the real-world context come from the application of school-based mathematical knowledge (Scribner 1984; Carraher *et al.* 1985; Lave 1988). In fact, many studies indicated that mathematical problems in the real world context are successfully performed by people with little formal education and knowledge of school-based mathematical algorithms and strategies (Scribner 1984; Carraher *et al.* 1985; Lave 1988). Lave (1988) examined arithmetic cognitive activity (i.e.

thinking, acting, understanding) across different everyday settings (e.g. shopping, preparing food, dieting) in order to examine problem solving in real time contexts

The conclusion was that transfer of learning from school to the real world is more complex than the behaviourist and cognitivist models of transfer acknowledge because the same mental activity (e.g. arithmetic) in a different setting (e.g. in the classroom as opposed to in the supermarket) is qualitatively different and discontinuous (i.e. successful performance of arithmetic in the classroom does not imply successful performance of arithmetic in the classroom).

In terms of methodology the situative researchers argued that cognitivist transfer research did not sufficiently reflect on the role of the construction of experimental tasks (e.g. the choice of tasks in the experimental procedure [Beach 1999]). In the everyday context, they argued, people do not encounter the same types of tasks as the clearly delineated tasks in the research/laboratory/classroom setting (Lave 1988; Beach 1999) but perceiving a problem or a dilemma is already the first step towards the solution of the problem. Furthermore, the link between the context in which the tasks are situated and the role of social organisation of context is rarely explored (Beach 1999).

This methodological element limits the relevance of laboratory-based findings on transfer for real life contexts, such as the transition from higher education to work. The situative perspective developed in various directions, such as conceiving learning across context as collective negotiation of the purpose of activity or 'developmental transfer' (Lambert 2003; Tuomi-Gröhn and Engeström 2003; Tuomi-Gröhn, Engeström and Young 2003) and as dialogical learning mechanisms at and across the boundaries of practices (e.g. Akkerman and Bakker 2011a, 2011b). I will draw on these more recent developments in the learning across

context accounts in the next chapter to show how they helped overcome the ‘transfer dilemma’ of some of the situative approaches.

4.3 From learning approaches to learning metaphors: ‘Transfer and application’ and ‘changing participation’

In order to shed more light on the fundamental differences between cognitivist and situative approaches regarding learning across contexts I will draw on Sfard's (1998) distinction between two learning metaphors ('learning as acquisition' and 'learning as participation metaphor') as a representative of the similar distinctions made in the literature (Table 4.2). I will show that the cognitivist approach subscribes to the metaphor of learning across contexts as ‘transfer and application’ and the situative approach to the metaphor of ‘changing participation in changing context’. I will link these differences to their different underlying assumptions about the relationship between individual and context. Moreover, I will argue that although there is merit of the ‘changing participation’ metaphor of learning across contexts the situative position on learning across contexts has created a ‘transfer dilemma’ in the literature.

Sfard (1998)¹³ argued that two metaphors of learning - ‘learning by acquisition’ and ‘learning by participation’ - dominate research in education. The *‘learning as acquisition’* metaphor has been a dominant metaphor among researchers of learning as well as within cultural institutions more generally (e.g. Dreier 2003). This metaphor encapsulates the thinking of a range of cognitivist approaches (Sfard 1998; McGuinness 2005)¹⁴ and presupposes that

¹³ More generally authors such as Lave and Wenger (1991) and Wenger (1998) distinguished between the two different approaches as well.

¹⁴ Sfard (1998) also considers Vygotsky's work to be engaged with the acquisition metaphor because of some of the terms he uses such as ‘internalisation’. I believe that this is an incorrect interpretation of Vygotsky's work. I position all the situative authors in the participation metaphor, because their view of learning was profoundly social and participative relative to the cognitivist/constructivist approaches.

learning entails acquiring or gaining possession of knowledge, concepts and skills (Sfard 1998). In this metaphor, the process of learning and the context in which learning takes place, such as a classroom or the workplace, are seen as independent of each other (Edwards 2005; Hodkinson *et al.* 2007). The ‘*learning through participation*’ metaphor, according to Sfard (1998:6), adopts a view of learning that involves ‘becoming a part of a greater whole’ and the complex transactions within the context in which the person is struggling to understand the associated practices, language and norms of the community. In this tradition of thinking, knowledge is never a separate and fixed entity. Instead, it is more open-ended, which is why the term ‘knowing’ is more commonly used within this tradition (Sfard 1998). Situative approaches such as Lave and Wenger’s theory (1991) other well-known accounts in education (e.g. Rogoff 1990) are examples of this metaphor.

Table 4.3 Two metaphors of learning, adapted from Sfard (1998)

Metaphor	Acquisition metaphor (Behaviourist, Cognitivist approaches)	Participation metaphor (Situative approaches)
Goal of learning	Individual enrichment	Community building
Learning	Acquisition of something	Becoming a participant
Student	Recipient (consumer), (re-) constructor	Peripheral participant, apprentice
Teacher	Provider, facilitator, mediator	Expert participant, preserver of practice/discourse
Knowledge concept	Property, possession, commodity (individual, public)	Aspect of practice/discourse/activity
Knowing	Having, possessing	Belonging, participating, communicating

The metaphor of learning as acquisition that underpins cognitivist approaches assumes that learning across context occurs as ‘transfer and application’ of prior learning to a new context (Sfard 1998). The metaphor of transfer is evident in the recurring themes of behaviourist and cognitivist research presented in Table 4.4 (see also Royer 1979; Singley and Anderson

1989). Similarly, cognitivist approaches ‘share the crucial assumption that transfer depends on the cognitive structure that the learner has acquired in initial learning and can apply in the transfer situation’ (Greeno *et al.* 1993:161).

The participation metaphor approaches learning across context in terms of ‘changing participation in changing context’. From the point of view of the situative approaches moving across contexts involves changing the ways of participating (thinking, communicating, doing) from one context to the next (Sfard, 1998). Participation metaphor highlights the symbolic differences between the two contexts there is a limited role for prior learning in a new context.

Hence, the transfer metaphor of the cognitivist approach places emphasis on the prior learning (stored as schemas and representations) as instrumental in successfully learning and performing in a new context. However, it underestimates the constraining role of contexts in the process. In contrast to this, the situative metaphor of changing participation places emphasis on learning through participation or co-participation (Lave and Wenger 1991; Lave 2008) *within* contexts but overemphasises the constraints of learning across context (Lave 1988; Sfard 1998) and the ability of the sociocultural mind to address the contextual constraints of learning across contexts.

At the core of this distinction between the metaphors of transfer and changing participation, as Table 4.2 shows, is an underlying assumption about the relationship between the person, their knowledge and skill, and the context(s) in which the person is acting. I illustrated this in Figure 4.6. For cognitivist researchers the person and the context are conceptualised as separate and the person extracts knowledge from contexts and moves across contexts through application of that knowledge. For situative researchers the knowledge and skills are part of the context (e.g. practice and culture) available to individuals through social and interactive

process of participation in the practice and development of sense of belonging and becoming part of that context.

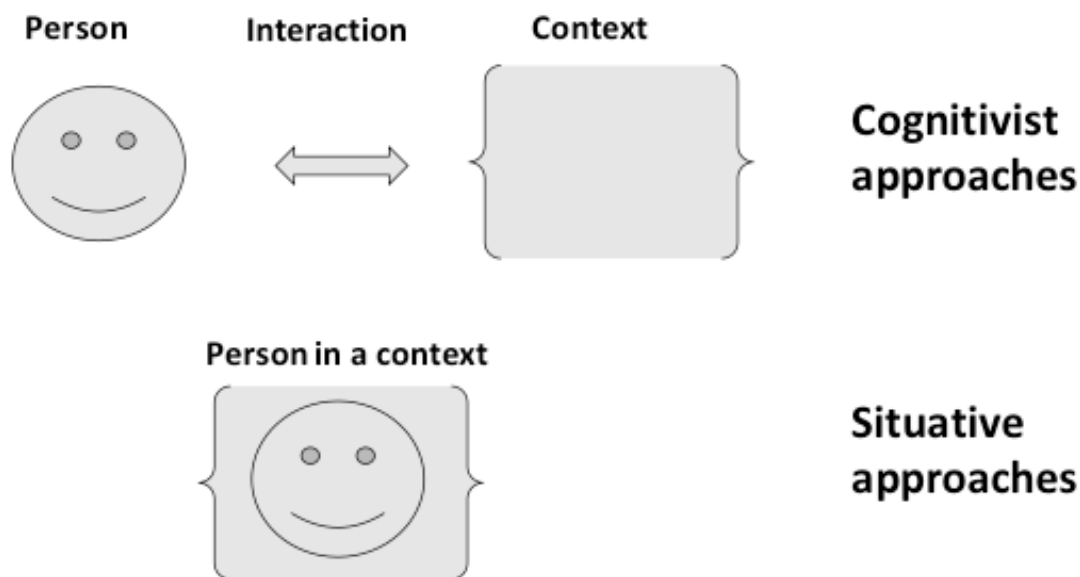
Table 4.2 Two clusters of psychological approaches to learning that map onto the distinctions between the cognitivist and situative accounts

Authors	Cognitive approaches to learning	Situative approaches to learning
Sampson (1978)	‘Paradigm II’: Focuses on abstracting and generalising knowledge from context	‘Paradigm I’: Focuses on exploring knowledge as embedded in specific context
Altman and Rogoff (1987 in Werner <i>et al.</i> 2002)	Interactionist worldview: a person and context are separate and learning comes from their interaction	Transactional worldview: person and environment are an inseparable whole and different facets in relation to one another
Minick (1985)	‘Isolating Psychology’: context and person are analytically separate, the consistency of a person’s actions comes predominantly from the person’s characteristics	‘Contextual’ and ‘Activity theory’ psychology: the unit of analysis is an individual’s actions in a particular context; consistency of a person’s action is predominantly due to tasks and context
Wertsch (1991)	‘Ahistorical and universal’ approaches to thinking and action	‘Socioculturally specific’ approach to learning
Bruner (2009)	Computationalist mind is separate from the environment and it is processing, representing and storing information from it.	Culturalist mind of individuals stands at the interface between individuals and culture and provides people with resources for thinking and meaning-making that are specific for that culture/society
Sfard (1998)	Acquisition	Participation

The importance of the situative approach to discussions of learning across context lies in showing that the dominant metaphor of transfer does not exhaust the possibilities of thinking about learning across contexts, despite this metaphor’s long history. Instead, situative researchers made clear that ‘transfer and application’ is a theoretical model of learning across contexts wedded to the acquisitionist concept of learning (Lave 1988; Beach 1999). As Carraher and Schliemann (2002:19) state ‘transfer encourages educators and theorists to

continue to view learning as direct carrying over of procedures from one situation to another’, and it obscures the participation-related aspects of learning across contexts. However, Sfard (1998) was more cautious when discussing the metaphor of learning across context from a participationist view and pointed out the shortcomings of the ‘changing participation’ metaphor of learning across contexts of the situative approaches. For instance, she argued, the metaphor is conceptualising the situatedness of learning process, whereas empirically it is evident that ‘something does keep repeating as we move from a situation to a situation and from context to context’ (Sfard 1998:9).¹⁵ In fact, the situative approach to learning across context as ‘changing participation’ has led some authors to discuss learning across context in terms of ‘transfer dilemma’.

Figure 4.6 The person/context relationship in cognitivist and situative approaches



¹⁵ She expanded upon this idea in her later work (Sfard 2008:80) with her concept of 'commognition' (i.e. communication and cognition), which accounts for participation and ‘becoming’ as intrinsic to learning (i.e. ‘communalisation of the individual’) and for the fact that people can draw on their experience of collective practice to move across contexts (i.e. ‘individualisation of the collective’). However, further implications of ‘commognition’ for learning across context discussions and debates have not been taken up in the literature.

Finally, in relation to graduate transition to work, which is the focus of this thesis, in Table 4.4 I show how the four models of transfer discussed in the previous section have different implications for conceptualising graduate transition. For instance, graduate expertise is described as being rooted in broad mental abilities, sets of specific work-related skills, general problem-solving principles, or representations and schemas that could be generalised to a variety of specific problems or as a problem-solving skill more generally.

Table 4.4 Four approaches to transfer and application and implications for conceptualising graduate transition

Theoretical approach	Transfer	Implications for graduate transition to work
Faculty psychology and theory of formal discipline	Transfer across contexts by means of exercising broad mental operations/faculties (Mind as a muscle)	Graduates with strong broad mental abilities will be able to cope with the demands of graduate jobs
Behaviourist approach to learning of Thorndike and colleagues	Transfer across contexts by means of learning particular skills that are similar to and relevant for the context in which they will be used (Learning as training for a particular context)	Graduates with skills and knowledge specific and relevant to the graduate jobs they are seeking will be able to make full use of their prior learning at work
Cognitivist approaches	Transfer across contexts by means of gaining representations, schemas and metacognitive skills that will help the learner detect the key features of the new context and applying the correct strategies to solve the problem	Graduate expertise consists of developing representations and schemas that relate to a range of problems they will encounter at work in addition to the development of important meta-cognitive skills that would enable them to apply their existing knowledge and gain new knowledge at work

Metaphors of learning across contexts and the ‘transfer dilemma’

Some have argued that the situative critique of the transfer metaphor has created a form of ‘controversy’ in the literature on learning across contexts (Sfard 1998). The controversy is that, on one hand, the dominant view of learning across contexts as transfer is incompatible with participation-oriented views. On the other hand, as Sfard (1998:9) notes:

Not even the most zealous followers of the PM-based [participation metaphor based] line of thought would deny that something does keep repeating itself as we move from situation to situation and from context to context. Our ability to prepare ourselves today to deal with new situations we are going to encounter tomorrow is the very essence of learning.

The transfer dilemma emerged from Lave's argument (1996a; Lave *et al.* 1989; Lave and Wenger 1991) that every time a person changes context they need to change participation or their thinking and acting in a particular context. This, in the learning literature, was interpreted as an argument for the abolishment of research on transfer and, more generally, research on learning across contexts. This was compounded by the cognitivist critique which claimed that situative approaches not only show disregard for transfer, but for cognition and mind more generally, and effectively 'sound behaviourist' (Anderson, Reder and Simon 1996b). As Sfard (1998) notes many researchers have interpreted this view of learning across contexts as 'changing participation' as a critique of the traditional notion of transfer and the lack of an alternative concept of learning across contexts. Hence the term 'transfer dilemma'.

However, several researchers have suggested that the 'transfer dilemma' in the learning literature conflates the theoretical critique of transfer metaphor with the need to develop new ways of thinking about learning across contexts as a phenomenon. For instance, Carraher and Schliemann (2002:20) argued that:

Sometimes this reluctance to accept that transfer is a theory of learning among many other theories may come from the belief that if we try to discard transfer we will be caught in what the authors call 'the transfer dilemma' meaning that: if we deny transfer, we seem to deny that new learning rests on former learning; if we endorse the idea of transfer, we subscribe to questionable beliefs about knowledge. Neither of these options is acceptable.

This tendency to conflate the metaphor of transfer and the learning across contexts phenomenon was also noted by other situative researchers (e.g. Greeno 1997; Beach 1999; Packer 2001). They argued that 'the issue is how the question of generality and transfer

should be formulated, not whether “transfer” occurs’ (Greeno 1997:12). Beach (1999:12) also argued that:

The process of placing boundaries on educational phenomena is never fully independent of the processes by which we create constructs to study the phenomena. Yet as we can see from the history of transfer research, the danger of losing analytic power by confounding our conceptual tools with the phenomenon we are trying to understand is quite real.

The discussion around the transfer dilemma sheds light on the need to distinguish between the phenomenon of learning across contexts and the metaphors of learning across contexts, such as transfer and changing participation. However, the discussion also rightly raises a question about the potential of a *new* situative metaphor of learning across contexts to offer a more solid basis for conceptualising and researching learning across real life contexts. This is what I will explore in the next chapter.

4.4 Conclusion

In relation to the second research question (‘What are the main learning challenges that graduates encounter when transitioning to work that are not accounted for in the skills/competence discourse?’) this chapter has shown that among the robust learning approaches that take into account the challenge of learning across context, the situative approach is the most relevant for the following reasons. Firstly, it takes into account the challenge of learning across contexts in real world settings such as higher education and work. Secondly, it theoretically conceptualises context in terms of social practices and specialised communities that embody these practices. Thirdly, both the individual and the context are seen as an intrinsic to the process of learning, thus allowing for a wide-lens perspective on learning.

However, the classical situative approaches overemphasise participation and learning *in context* and the *constraints* of working across contexts at the expense of developing alternative metaphors for learning across contexts. Hence, as shown above with respect to the debate around the ‘transfer dilemma’ the situative approaches need an alternative metaphor for learning across contexts. In the next chapter I will draw on a particular strand of the situative approach, cultural-historical activity theory (CHAT), to pursue the implications of the ‘transfer dilemma’.

Part II. The methodological argument

Chapter 5. The learning dimension of graduate transition: Horizontal expertise framework

5.1 Introduction

In the previous chapter I showed that situative learning approaches offer a promising start to developing an alternative account of the learning dimension of graduate transition to work. However, what is missing from the classical situative approaches is an alternative conceptualisation and research framework for learning across contexts - a key challenge of graduate expertise development between education and work.

In this chapter I will draw upon a particular strand of the situative approaches, Cultural-Historical Activity Theory (CHAT), as a resource to conceptually develop the learning dimension of graduate transition to work that explicitly takes into account the learning across contexts challenge embedded in the transition. The conceptualisation that I am going to introduce and discuss, I will call, the ‘Graduate Horizontal Expertise Framework’. In relation to the second research question: ‘What are the main learning challenges of graduate transition to work that are accounted for in the skills/competence discourse?’ I will show, using the horizontal expertise framework, that the main challenges involve ‘boundary-crossing’, ‘identity re-negotiation’ and ‘recontextualisation’ of prior learning.

The argument is structured as follows. First, I will show how CHAT goes beyond the situative ‘transfer dilemma’ by conceptualising learning across contexts, in terms of engaging with and crossing the boundaries of social practices (e.g. higher education and work) using various cultural resources (e.g. tools, other people, practices). I will distinguish two traditions in CHAT: mediation by dialogue and mediation by activity because these two traditions will

be relevant for the discussion of expertise development in an internship at a later stage. Then, I will explore accounts of learning across contexts such as Beach's consequential transition and horizontal development, Akkerman and Bakker's account of boundary-crossing, Engeström and colleague's idea of 'horizontal expertise' and Guile's concept of recontextualisation. I will go on to use the insights from these accounts to develop a framework of learning across contexts in graduate transition to work ('the horizontal expertise framework').

5.2 Cultural-historical activity theory's (CHAT) account of learning across contexts: Moving on from the 'transfer dilemma'

In this section I am going to introduce CHAT and its two traditions: mediation by dialogue and mediation by activity. These two fundamental ideas about mediation underpin the four accounts of learning across context and the 'horizontal expertise' framework that I will discuss in this section. They will also inform the methodology for researching horizontal expertise of graduates in subsequent chapters.

CHAT is a strand of situative approaches that shares assumptions of the sociocultural mind and the generative role of context in human thinking and acting with the rest of the situative approaches (Table 5.1). What is distinctive about CHAT vis-à-vis other situative approaches is its analytical focus on how people learn to use sociocultural tools to act on joint problems in practice (Edwards 2005) and the intricate ways in which human cognition is intertwined with cultural contexts, including how they mutually *transform* each other (Engeström and Sannino 2010). Relative to the concern of learning across context, the focus of CHAT on the dynamic tension between the individual and social aspects of learning makes CHAT particularly valuable in rethinking the learning across context phenomenon. This is in

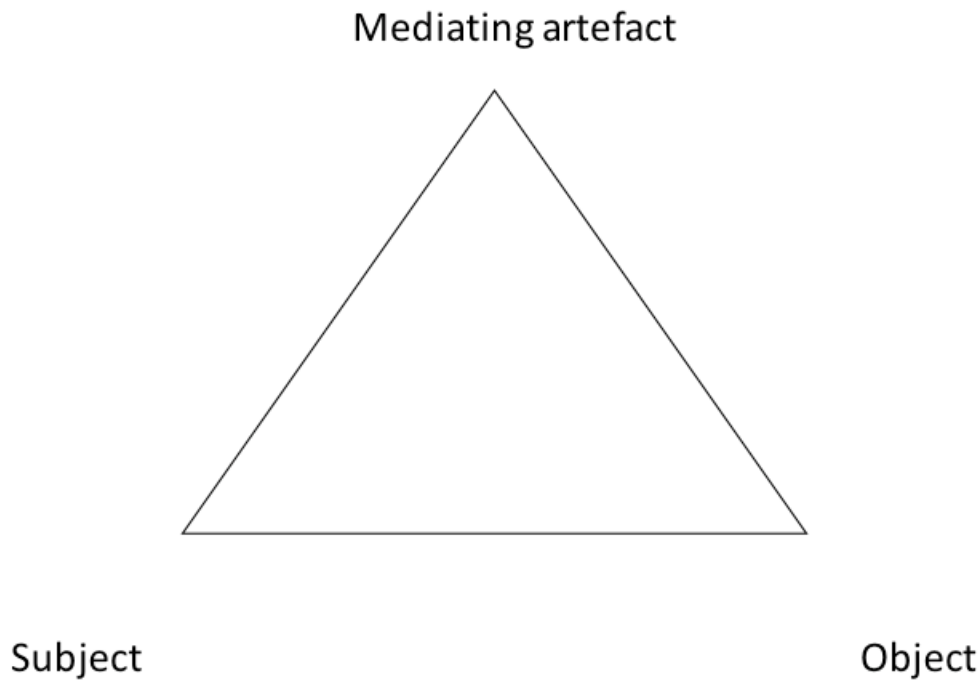
contrast with the culturalist strand of situative approaches more closely associated with the ‘participation’ metaphor (Edwards 2005; Paavola and Hakkarainen 2005) which, I showed in the previous section, have contributed to the ‘transfer dilemma’.

Throughout this thesis I will use the term CHAT in a broader sense, as an umbrella term for the work of several ‘generations’ of authors working in this tradition (Engeström 2001).

Below I will focus on the work of Vygotsky (1978) (the first generation) and Leontyev (2009) (second generation), whereas the learning across contexts account will belong to the domain of third generation work in CHAT. However, analytically, rather than in terms of ‘generations’, it is more helpful to think about two strands of research in CHAT that have persisted throughout the three generations. These are: mediation by dialogue which began with the work of Vygotsky and continued with the work of sociocultural and dialogical researchers (see below) and mediation by activity which began with Leontyev’s work and continued in the work of activity theorists such as Engeström and colleagues (see below)

The ‘central theme that runs through’ the work of Vygotsky is the idea of the culturally mediated mind (Wertsch 2007:179). It was introduced into psychology by Vygotsky (1978) in reaction to what he saw as reductionism in the psychology of the time. In contrast to behaviourist and cognitivist approaches I reviewed in the last chapter for Vygotsky sociocultural tools such as language and dialogue are key mediating factors between the person (subject) and their environment (object). He was particularly interested in the developmental potential of language and speech to give rise to higher cognitive abilities that enable people to participate successfully in their sociocultural environment.

Figure 5.1 Cultural-historical and sociocultural mediation-by-dialogue



Two key drivers of human sociocultural development are, according to Vygotsky, the development of linguistic abilities and the use of tools. In the case of the former, Vygotsky demonstrated how gaining access to concepts and ideas through language alters the cognitive make-up of humans in profound ways (e.g. the way humans think, perceive, remember, and direct attention) and renders human thinking and perception to some extent ‘logicalised’, ‘categorised’ and ‘labelled’ (Vygotsky 1978:33). In the latter case Vygotsky showed how, throughout the history of human culture, humans have been creating and using *material* tools to work on and change the environment in which they live (e.g. building cities and roads), as well as *psychological* tools (‘signs’) to organise and affect their own behaviour (e.g. alarm clock, calculator). Both language and psychological and material tools can be thought of more generally as mediational tools or *cultural artefacts* (Cole 1996).¹⁶ Hence, Vygotsky brought into the psychological discussion on human development the focus on cultural

¹⁶ Cole (1996) defines artefacts as aspects of a material world that are modified and transmitted through the activity from one generation to another.

artefacts and mediation-by-dialogue (i.e. semiotic mediation). This line of thinking and research is continued by the sociocultural researchers who maintains a focus on the individual(s) acting in a sociocultural setting (Engeström and Miettinen 1999) and on the tools (predominantly linguistic – speech and language) that people use when acting in a setting. The unit of analysis is said to be 'mediated action', which represents a link between mental activity and cultural context (Wertsch 1998). In addition to Vygotsky's work on semiotic mediation sociocultural researcher draw on the work of the dialogical tradition, such that of Bakhtin (Daniels, Cole and Wertsch 2007).

In addition to focus on dialogue and cultural artefacts CHAT researchers consider the collectively developed ability to create, use, change and transmit artefacts in and across activities as distinctive to humans (Tomasello 1999). In creating tools humans transform and imbue the material world with meaning and purpose (Ilyenkov 1975). I will draw on these foundational assumptions about the purpose and use of tools to make a case for my methodological and empirical arguments (Chapters 6, 7 and 8).

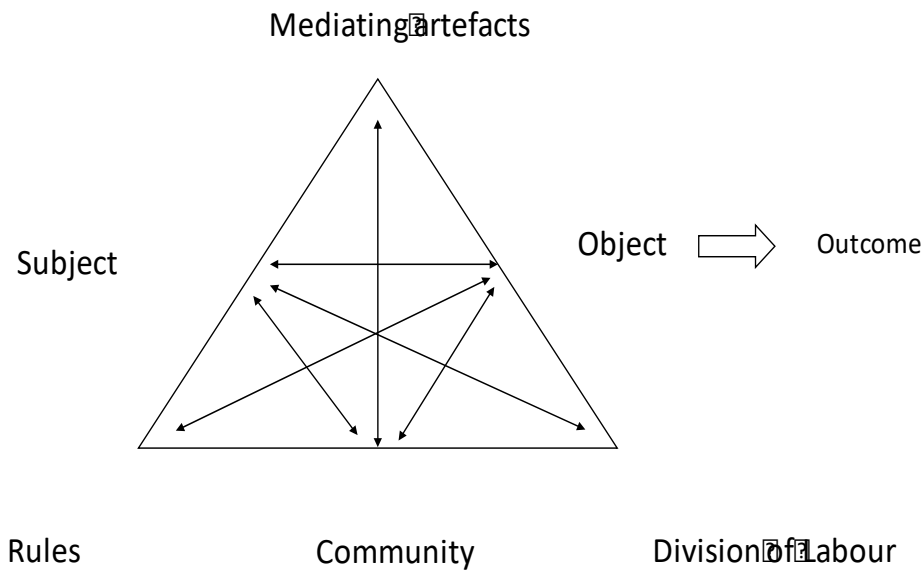
Table 5.1 Situative approaches and CHAT

Situative approaches		
Culturalist strand of situative approaches	CHAT-based strand of situative approaches	
Situated cognition	Sociocultural and dialogical	Activity theory
<ul style="list-style-type: none"> - Enculturation and participation in practice of a community - Focus on meaning-making in specific situations 	<ul style="list-style-type: none"> - Individual mediated action - Focus on language and dialogue 	<ul style="list-style-type: none"> - Collective mediated actions in an activity - Focus on historical and collective dimensions of practice (e.g. norms, rules, tools)

Moreover, the context in which artefacts are created and in which people participate daily is imbued with cultural meaning and referred to as activity or social practice (Cole 1996). The idea of social activity as a mediator of human actions was particularly developed by Leontiev (1978), with one of his most significant contributions being to analytically distinguish the ‘actions’ of individuals from the overarching collective ‘activity’. He argued that the mediated actions of individuals represented in Figure 5.1 could be understood as situated in communities, their norms, rules and division of labour and that they are organised around the collective object or purpose of an activity (Engeström 2016). The unit of analysis of activity theory, developed by Engeström (1987) on the basis of Leontiev’s work (1978), is presented in Figure 5.2.

Approaches included under the umbrella of activity theory tend to focus on joint or collectively mediated activity (Daniels, Cole and Wertsch 2007). This perspective began as an initial elaboration of Vygotsky’s ideas in Soviet Russia through the extension of Vygotsky’s work by his colleagues, such as Luria and Leontiev, and later in the West (e.g. Engeström 1987; Cole 1996). Activity theory gives emphasis to the historical dimension of context. Context is seen as an activity system that integrates subjects, objects and instruments into a whole (Lave 1993, 1996a) and this is the minimum unit of analysis in activity theory research (Engeström and Miettinen 1999) (see Figure 5.2).

Figure 5.2 Activity theory and mediation-by-activity



The two strands of CHAT that correspond to two facets of mediation (Guile 2011a) are sometimes juxtaposed in the literature (Lave 1993, 1996b; and Engeström and Mietinen 1999) although their common legacy is evident. I will consider the approaches as complementary and draw on both since it has been convincingly argued that (i) 'mediated action' and 'activity' are 'two moments of a single process' (Cole 1996:334), (ii) activity theory can benefit from research on dialogue, discourse and argumentation (Engeström 2001), and (iii) sociocultural theories should take into account the role of overarching activity when researching discursive acts (Linell 2009).

In the following sections I will examine five accounts of learning across contexts as they provide analytical resources for conceptualising learning across contexts (Table 5.1). I will begin with Lave's concept of *changing participation* then proceed with Beach's concept of *consequential transition*, Akkerman and Bakker's review of *boundary-crossing*, Engeström's notion of horizontal expertise and Guile's notion of *recontextualisation*. The first concept of transfer (changing participation) is inspired by the work of situated cognition, while the

concepts of consequential transition, recontextualisation, boundary crossing and developmental transfer are positioned in the CHAT legacy.

5.2.1 Learning across context as 'changing participation in changing practices'

In the previous chapter I showed that Lave made a compelling argument about the contextualised character of learning and held a pessimistic view of the possibility of learning across contexts (Lave 1988). In this section I will focus on the contribution of Lave’s ideas for graduate horizontal expertise framework (Table 5.13) by highlighting (i) Lave’s emphasis on the boundaries of sociocultural domains and (ii) and on understanding the sociocultural domains in terms of communities of practitioners in which learning and professional identity develop (Table 5.2).

Table 5.2 The contribution of Lave's work to the learning dimension of graduate transition (Lave 1988, 1996a, 2008; Lave and Wenger 1991)

The learning dimension of graduate transition to work:	Learning across contexts (LAC)	Graduate expertise development
(Lave <i>et al.</i> 1989; Lave and Wenger 1991; Lave 1996a, 1996b)	<p>LAC involves overcoming barriers or boundaries imposed by different contexts</p> <p>LAC is difficult because of various resources (cultural, institutional, interactive) that structure human activity in a particular context</p>	<p>Graduates’ learning in the workplace can be described as immersion in the practice of a professional community and as a slow movement from the periphery towards more central roles and tasks</p> <p>Learning in the workplace has an identity or ‘becoming dimension’ – it entails becoming someone new and someone more alike the professionals in the organisation</p>

Regarding the first point, in the previous chapter I mentioned that situatedness or contextualisation of cognition and skills is a cornerstone of Lave's work on learning (Lave 1988, 1990, 2008; Lave and Wenger 1991). She gave examples of how a range of individual,

social and situational factors (or 'structuring resources') jointly shape and mould the cognitive activity of social practice participants, tie it to the setting, and give it its contextualised, situated character (Lave, 1988). For instance, the structuring factors may come from: the wider social order (culture, political-economy, beliefs), social institutions and organisations (supermarket, school, academic disciplines), individuals' action in a setting (problems, dilemmas, expectations), and from the immediate setting of the activity (the organisation and structure of a concrete context). In other words these distributed resources (e.g. the social order, social institutions, configurations of individual-setting interactions) structure individual activity and act as constraints, barriers or boundaries for learning across the contexts of different institutions, necessitating that the person 'change participation in changing practices' (Lave 1996a).

The implication of this view for the learning dimension of graduate expertise is that the movement between the context of higher education and the context of work may be more complex than the transfer metaphor envisages, because the thinking, skills and expertise in higher education have developed within and in relation to the higher education context and are specific to it. The same is true of work as the expertise required of graduates will always be specific to the context of the industry and particular organisation they are involved with. In relation to graduate transition to work the various ways in which the institutions of higher education and work are differently organised (e.g. in relation to society, institutionally, goals, and values) act as barriers to the smooth, unproblematic transition of graduates.

The second point on the interrelationship between identity development and learning, Lave and Wenger's (1991) focus on the exploration of learning as an instance of apprenticeship-type situated activity. Envisaged as an apprenticeship-type activity, learning becomes part and parcel of identity development. As Lave later stated:

'[O]ur argument [in the book Situated Cognition] was concerned with apprentices mastering practice, and we enclosed this in a glove called a community of practice whose structure and purpose was acting masterfully. At the same time we were trying to say that the development of identity in relation to the identities of others was more fundamental than knowledge or mastery. (Lave 2008:284)

The two main concepts involved in the Lave and Wenger (1991) model of learning are the process of '*legitimate peripheral participation (LPP)*' in a '*community of practice*'. The former describes the learning trajectory of the individuals joining the collective practice and suggests that 'mastery of knowledge and skill requires newcomers to move toward full participation in the sociocultural practices of a community' (Lave and Wenger 1991:29). The latter describes professional communities, or the context in which the process of LPP of novices takes place.

These two concepts are significant for this research because they also help conceptualise the notion of context of learning and identity development as occurring in communities of practitioners (see Table 5.12). This suggests that learning and identity develop through a relational process of enculturation in knowledge generating professional communities. For graduates entering the workplace this has implications in the following ways. Graduates are not solely entering knowledge communities, but communities of people acting together and the associated complex social network of relations. Graduates starts on the periphery of this practice and with the development of their expertise assume more central roles and tasks. Furthermore, their colleagues in an organisation are thus carriers of practice and graduates/novices develop their own expertise and professional identity in relation to these experts (2008).

Thus, although Lave's (1988, 1996a) work did not aim to offer a fully-fledged replacement metaphor for learning across contexts her work could be interpreted as an invitation to shift the analytical focus away from cognitive skills and towards expertise and identity

development within the boundaries of social practices and focus on the importance of the boundaries for learning.¹⁷

To examine the relationship between learning and identity more fully, in the next section I am going to focus on Beach's consequential transition (1999, 2003). Beach gave a sociocultural account of learning across context which places emphasis on the person moving from one socioculturally organised (in Lave's terms 'structured') context to another.

5.2.2 Learning across context as 'consequential transition'

Beach (1999, 2003) an activity theory inspired cultural psychologist drew on the work of Lave and Wenger (1991) and CHAT to develop his account of learning across contexts encapsulated in the concept of consequential transition. There are two key ideas from Beach that will inform the graduate horizontal expertise framework. The first one is that moving across contexts is 'consequential' because entails a fundamentally horizontal development in which a person is changing relations with the contexts using available artefacts. The second is that moving across contexts is also 'consequential' because of the developmental potential for the person not solely in terms of expertise as well as identity development.

The first point represents a departure with the situated cognition approach, Beach stressed the developmental potential of moving across contexts and changing relations with socio-cultural settings. He argued that 'our experience of continuity and transformation across time and social situations are a function of neither the individual nor the situation, but rather of their relation' (Beach 1999:112). Additionally, Beach advanced the situated argument by stating that sociocultural contexts represent opportunities as much as constraints for learning across

¹⁷ This is evident in the way in which work of Lave and colleagues was extremely influential in the subsequent situative accounts of learning across contexts (e.g. see work on 'affordances' by Greeno, Collins and Resnick 1996; Greeno, Moore and Smith 1993).

contexts because humans have a distinct ability to ‘transform our own learning development’ (Beach 2000:2). The transformation occurs when individuals use available artefacts (symbols, texts, technologies, language) to actively create associations between the two distinctive social settings. In other words, for Beach:

It is more productive to think about differences in school and work as presenting opportunities for mathematical learning and development, rather than boundaries to be overcome or transferred across. This suggests that efforts should not be directed at making school and work similar to each other, nor should seamless transitions between the two be promoted as a goal. Rather, we need to think about ways to directly support consequential transitions themselves as important pedagogical opportunities. (Beach 2000:2)

Embedded in the idea of consequential transition for Beach (1999, 2003) is the idea of horizontal development (Table 5.3). Horizontal development is a fundamental form and it entails a person relating to and forming new and reforming old relationships with a sociocultural context (Beach 2003). Horizontal development requires ‘putting aside ideological assumptions that value knowledge organized in the form of subject matter over knowledge organized in other ways, such as for production’ (Beach 2000:3). In other words, although more fundamental form of development, horizontal development especially across the boundaries between education and work tends to be conceptualised as a vertical progression from lower to higher forms of expertise. For instance, this progression can take place either within one domain (e.g. encompassing transition such as legitimate peripheral participation) or as two distinct socio-cultural domains hierarchically positioned so that one socio-cultural domain is used as a model (i.e. formal education or school) to understand the development of the other (e.g. learning at work) in the case of lateral and mediational transitions (Beach 1999, 2003).

The implications for the graduate horizontal expertise framework is that graduates need to develop a capability to use their knowledge and skills across the boundaries of different

contexts. In the horizontal expertise framework Beach's idea of horizontal development underpins what I will call the development of a capability to move between contexts and identify what has been learnt and how it could be a resource for future action.

In practice, as Beach (1999 2003) argued, the development of this capability can take place simultaneously, concurrently or mediational. For my empirical study on expertise development in an internship the notion of *mediational transition* is particularly relevant. This is because the notion depicts developmental transitions between the main and the anticipated activity with a view of preparation for the simulation activity. Mediation transition is important as a way to zoom into the changing relations that students and graduates experience when making their 'as if' transition to work in an internship. This is because in line with the youth transition literature I reviewed in Chapter 2 graduate transition to work ceased to be linear and final and education and learning are not considered as having a lifelong and life-wide dimension (Aspin *et al.* 2012).

The second key idea from Beach (1999; 2003) is that moving across contexts entails transitions that are developmental and 'consequential' because they provide individuals with an opportunity to develop their identity. Moving horizontally between contexts affords opportunities to individuals to re-position themselves in relation to the world by developing new self-understandings. This is an extension of the situated cognition approach because it suggests that moving across context just like moving from the periphery to the centre of a particular sociocultural context has implications for identity development. This is because:

One would never think of claiming, for example, that their identity as individuals is entirely separable from the various kinds of knowledge they possess. After all, it is only by virtue of such knowledge (or its lack) that we are positioned relative to those around us (Gover, in press in Beach, 1999:132).

For the graduate horizontal expertise framework the implications of this idea is that graduates, by moving from education to work, have an opportunity to re-negotiate their old identities and develop new ones.

Table 5.3 Two forms of human learning and development in across practices (Beach 1999, 2003)

Horizontal development	<p>Development by transformation or creation of new relations between individuals and social activities</p> <p>When moving across the boundaries social activities, the activities are conceptualised as being in a hierarchical relation (e.g. education as training for work; or educational knowledge as superior to workplace knowledge)</p>
Vertical development	<p>A type of horizontal development conceptualised as development through vertical progression by Western societies and some developmental theories</p> <p>Presupposes hierarchy of knowledge and skills such as the supremacy of general, abstract knowledge distanced from the practical activity (e.g. school or academic knowledge and skill)</p>

Therefore, the concept of horizontal development and consequential transition show the developmental potential (both in terms of expertise and identity) of crossing the boundaries of sociocultural domains. The concept of horizontal development also anticipates what I will discuss as activity theory notion or ‘horizontal expertise’.

However, before showing the relevance of the notion of horizontal expertise, I will further examine the developmental potential of horizontal movement by focusing on the authors who synthesised the distinct mechanisms that enable individuals to grapple with and cross boundaries of different contexts.

Table 5.4 The contribution of Beach’s work (1999, 2000, 2003) to conceptualising the learning dimension of graduate transition to work

The learning dimension of graduate transition to work	Learning across contexts (LAC)	Graduate expertise development
Beach	<p>Involves developmental transitions between contexts or changing relations with contexts by using artefacts and technologies</p> <p>Transitions can be consequential for graduates as they develop knowledge, identities and new positions in the world</p>	<p>Expertise is developed not solely “vertically” (from lower to higher skills and capabilities), but more fundamentally graduate expertise develops horizontally by making connections and changing relations between differently organised sociocultural domains</p> <p>Moving across socio-cultural contexts entails the development of new and re-shaping of old identities for graduates</p>

5.2.3 The sociocultural and dialogical account of learning across contexts as ‘boundary-crossing’

In order to further examine the idea of expertise and identity development when moving across contexts I will draw on the more recent work of sociocultural authors that revealed a rich repository of concepts to describe learning across contexts and it, in important ways, elaborates the sociocultural dimension of Beach’s work (2003). Here I will briefly draw upon the systematic review of Akkerman and Bakker (2011a, 2011b), authors within broad dialogical (e.g. Akkerman and Meijer 2011) and inferentialist (e.g. Bakker and Derry 2011) perspectives in order to highlight the dialogical aspect of moving and learning across context and its relevance for the horizontal expertise framework.

The socio-cultural literature on which Akkerman and Bakker (2011a) drew conceptualised learning across contexts in terms of engagement *with* the boundaries between different social practices (or ‘boundary crossing’). For them, engaging with and crossing the boundaries between contexts results, as for Beach (2003), in an expanded repertoire of social and dialogical resources available to the individuals involved (Akkerman and Bakker 2011a).

However, Akkerman and Bakker (2011a) more explicitly highlighted the dialogical dimension of the sociocultural mind (i.e. the fundamental ability of humans to think and act by engaging with others, ideas and stances) by positing that the dialogical mind is a key factor of learning across contexts and revealing particular dialogical mechanisms that support learning across contexts.

In particular their work suggests that learning across contexts entails mechanisms (see Table 5.5) such as ‘identification’ (experiencing and recognising the difference between two practices as a result of movement between practices), ‘coordination’ (mechanisms by which individuals establish continuity between two sociocultural contexts), ‘reflection’ (extending an old or developing a new perspective on the world as a result of learning across contexts) and ‘transformation’ which corresponds to the developmental work of Engeström and colleagues (Konkola *et al.* 2007; Engeström and Sannino 2010).

Table 5.5 Dialogical mechanisms of learning on the boundary (adapted from Akkerman and Bakker 2011a)

Learning on the boundary as:	Description of the mechanism	Graduate learning across context (Examples)
Identification	Identification of difference between the practices by: <ul style="list-style-type: none"> A) Contrasting and comparing two contexts that one is moving between and seeing one in relation to the other B) Legitimising their co-existence and the boundaries between them 	Trainee-teachers after their first visit or placement in a school develop a new understanding of their training course in relation to the workplace teaching practice
Coordination	Establishing continuity between different contexts by using procedures, objects and resources (i.e. mediating artefacts) such as: <ul style="list-style-type: none"> A) Communicating across practices with the use of shared objects that cross boundaries (e.g. a spreadsheet in an accounting company; patient history among healthcare practitioners) B) Intentional efforts at translation of meanings from one context to the next by individuals that act as ‘translators’ or objects that facilitate translation C) Making boundaries more permeable by arranging seamless transitions 	By communicating with career advisors or employers during a career fair the student develops a better understanding of a particular company or the recruiting practices of a company
Reflection	Reflecting and enriching perspective and acting by: <ul style="list-style-type: none"> A) ‘Perspective-making’ as a result of boundary crossing or developing an understanding of the perspective that underpins the different context B) ‘Perspective-taking’ as a result of boundary crossing; one is able to see things in a different light and to enhance one’s own perspective 	After crossing a boundary in an internship the student-intern is able to understand why companies have a preference for a particular intern profile and this informs his/hers subsequent internship and job applications
Transformation	Learning across contexts takes place due to an intervention or a change: <ul style="list-style-type: none"> - Important to focus on breaks 	Students, university teachers, programme leaders collectively re-negotiate the work placements

	and confrontations in collective collaborative practice in order to confront current boundary-related practices and develop ways to enhance the boundary practice	embedded in a degree through consultation
--	---	---

Thus, for the purposes of this chapter, the dialogical approach of Akkerman and Bakker (2011a) is a way to elaborate Beach’s idea that learning across contexts ‘involves the construction of new knowledge, identities, ways of knowing, and new positioning of oneself in the world’ (Beach 2003:42) by suggesting four concrete mechanisms that individuals and groups use to make sense of and move across contexts. Furthermore, shedding light on the dialogical facet of learning across contexts is important for subsequent discussions on recontextualisation which, I will suggest, has not been fully pursued but could benefit from a focus on dialogue.

Table 5.6 The contribution of the work of Akkerman and Bakker (2011) for the graduate learning dimension

The learning dimension of graduate transition to work	Learning across contexts (LAC)	Graduate expertise development
Akkerman and Bakker (2011a)	LAC is a dialogical process that entails mechanisms such as identifying differences between two contexts, attempting to coordinate actions across the boundaries using artefacts, the expertise of others and the understanding of the perspective of the other socio-cultural domain	Graduate movement from education to work entails symbolic, relational and dialogical work to make sense of the boundaries between practice and develop new ways (e.g. using artefacts, new perspective on boundary) to learn and work across them.

5.2.4 Learning across context an aspect of horizontal expertise development at work

To deepen my argument about how people learn across contexts, I now turn to Yrjö Engeström's work (Engeström 1987, 1999; Tuomi-Gröhn and Engeström 2003). In doing so, I will make clear that what is distinctive about his work is the idea that development of 'horizontal expertise' is necessary for contemporary workplace. This concept arose from his work on developmental transfer and his elaboration of the activity theory approach (e.g. by emphasising the importance of 'object of activity' and suggesting a concept of community or context as 'activity system').

The early work of Engeström and colleagues developed an influential vocabulary for discussion and research on learning across contexts. For instance, Engeström and colleagues introduced concepts such as *horizontal expertise* (Engeström et al. 1995), *polycontextuality*, *boundary crossing*, *boundary zones* (Tuomi-Gröhn and Engeström 2003) in cultural-historical activity theory. I will focus on two of these concepts: boundary-crossing and horizontal expertise.

A dimension of expertise that is pertinent for modern workplaces but that has been under-appreciated by researchers is the *horizontal* dimension. The horizontal dimension of expertise entails (i) movement 'between parallel activity contexts' and the use of context-specific 'tools, rules and patterns of social interaction' (i.e. working in across different professional domains and teams) and (ii) 'negotiation and combination of different ingredients from different contexts to achieve hybrid solutions' for new problems they encounter in the workplace (Engeström et al. 1995:319).

Boundary-crossing is one of the key concepts from the early work on learning across contexts and horizontal dimension of expertise. It was seen as 'a broad and little studied category of

cognitive processes’ (Tuomi-Gröhn, Engeström and Young 2003:4) or a process of ‘cognitive retooling’ (ibid.) that takes place when a person moves across social domains. Boundary crossing involves ‘encountering difference, entering into territory in which we are unfamiliar and, to some significant extent therefore, unqualified’ (Tuomi-Gröhn, Engeström and Young 2003:4). The space between the boundaries of two communities or activity systems is described as a space which is 'complex', 'multi-voiced', and ultimately a 'no-man's land' (Konkola *et al.* 2007:204). Boundary crossing is facilitated when people and groups use or create mediating artefacts to grapple with difference and unfamiliarity (Tuomi-Gröhn 2003). Boundary-crossing as a category of cognitive processes is especially vital for workplaces that are ‘polycontextual’ or that require working across multiple communities of practice to devise new solutions to problems. Thus, Beach’s notion of ‘horizontal development’ was further elaborated within the CHAT framework and took on more specific meaning as a capability to learn from boundary-crossing at work and use the learning to inform solving complex problems.

Table 5.7 Boundary-crossing concepts (adapted from Engeström et al. 1995)

Resources to conceptualise learning across contexts	Description
Boundary-crossing	<ul style="list-style-type: none"> - A category of cognitive processes that involves the formation of new mediating concepts to deal with difference and the entering of new territory
The horizontal dimension of expertise	<ul style="list-style-type: none"> - Horizontal boundary crossing vital for workplaces that are ‘polycontextual’ (i.e. they require working across multiple communities of practice) - Expertise involves movement between parallel activity contexts and their different tools, rules and patterns of social interaction - Requires the negotiation and combination of different ingredients from different contexts to achieve hybrid solutions

The work on *developmental transfer* is associated with the 'multi-directional and multi-faceted' transitions between two or more activity systems (Tuomi-Gröhn, Engeström and

Young 2003:4). However, learning across contexts in this approach tends to be conceptualised as a collective endeavour of people coming together to work across the boundaries of their professional and institutional activities (Lambert 2003; Tuomi-Gröhn and Engeström 2003; Tuomi-Gröhn, Engeström and Young 2003). This is different from the analytical focus I will take which is closer to Beach’s focus on the transitions and trajectories of individuals.

For my graduate horizontal expertise framework the work of Engeström and colleagues is relevant because it suggests that (i) horizontal development across workplace contexts encapsulates a particular form of expertise necessary in the contemporary workplaces (horizontal expertise) and (ii) the notion of horizontal expertise captures a particular capability (‘cognitive process) to engage in boundary-crossing and use what was learned to devise solutions for new problems (by learning how to use tools, norms and procedures and apply them to new problems).

Table 5.8 The contribution of the work of Engeström et al. (1995, 1997, 2003) to the graduate learning dimension

The learning dimension of graduate transition to work	Learning across contexts (LAC)	Graduate expertise development
Engeström and colleagues	LAC is conceptualised as crossing symbolic boundaries between domains <ul style="list-style-type: none"> - This requires ‘cognitive re-tooling’ or (a) the (collective) creation of new tools such as representations and boundary objects and (b) the use of these tools through communication, argumentation and dialogue 	Expertise is a multidimensional construct – both vertical and horizontal Horizontal dimension of experience is important and underappreciated although there is an increasing demand for experts who are able to work across contexts to generate new insights to novel problems.

In what follows I will further examine the capability embedded in boundary-crossing and horizontal expertise by showing that one of the key learning challenges for graduates engaged in boundary-crossing and horizontal expertise development is to *recontextualise* context-specific insights and actions across the boundaries.

5.2.5 Learning across contexts as recontextualisation

In this section I will further explore Yrjo Engeström's idea that boundary-crossing entails a cognitive process of drawing on resources from both contexts to devise new solutions by drawing on Guile's account of learning (2010) as developing reasoning and inference with respect to learning across contexts.

Guile conceptualised learning across contexts in terms of the process of 'recontextualisation', a concept which describes how 'situated' conceptual tools, such as concepts and skill, can be modified and transformed to serve a new purposeful activity (Guile 2014). This will enable me to specify and elaborate the 'cognitive re-tooling' process of boundary crossing and graduate horizontal expertise development more broadly.

There are three principles that underpin the process of recontextualisation, and the key focus in Guile's account is on 'judgement' as 'the primary unit of knowledge' (Guile 2014:82).

Table 5.11 Three underpinning assumptions of recontextualisation (adapted from Guile 2014)

Three principles of recontextualisation	Graduate transition to work examples
Every activity has a purpose	Higher education activity and work activity have different purposes and thus even the same actions (e.g. writing a report; solving a problem) will be qualitatively different
Every activity has a normative context or space of reason that underpins it	Higher education and work as two different activities operate on different normative contexts. Thus they require different types of knowledge, skill and expertise
Professional reasoning is based on generating inferences about what follows from given concepts and actions and responding to this	Developing appropriate reasoning for higher education and workplace activity will entail knowing what follows from ideas, concepts and actions people encounter while in those activities. Participation at university or work requires the person to be able to draw inferences and make appropriate judgements

The first principle refers to an activity theory notion that every activity has its own specific object and motive (Leontiev 1978, 1981) or, in Guile’s rendition of the concept (2010, 2014), a specific purpose. This means that every activity, including higher education and work, has a distinctive purpose, which profoundly affects the meaning and use of cultural artefacts (concepts, theories) in a particular activity, as well as determining what counts as ‘expert performance’. The implication of this is that graduate learning across contexts, which I described so far as boundary-crossing and horizontal expertise development, requires the re-purposing of prior knowledge and skills that people bring with them to work in addition to learning to navigate a new purposeful work activity.

The second principle – ‘the normative context of an activity’ – is a further elaboration of Vygotsky’s theory of cultural mediation,¹⁸ which states that people live in a social world that is ‘mediated’, ‘humanised’ and ‘conceptualised’ through collective human activity. Thus, according to Guile (2010), human activity is continually inscribing meaning onto the world (concepts, meaning, norms) and generating ‘normative frameworks’ or ‘spaces of reason’ that surround activities and practices. Thus, the differences between two activities can be

¹⁸ Guile also draws on the work of the Soviet philosopher Ilyenkov and the inferential philosophers McDowell and Brandom to develop his model of learning.

described in terms of the different underpinning logics they operate on, in addition to being described in terms of their different purposes. This has implications for graduate expertise development because it entails grasping the underlying logic of normative frameworks of both education and work. This is what enables participants in the activities to infer and act in an activity-appropriate way and what enables boundary-crosses to participate successfully across contexts.

The third principle, ‘reasoning is based on generating inferences about what follows’, relates to the idea that expertise requires the development of ‘professional judgement’ which entails both theoretical and practical reasoning and the use of this reasoning at work to solve real life problems (Guile 2011a:459-460). Forming professional judgement means that a person is able to navigate the space of reason/normative framework by developing ‘the ability to infer what follows and what does not follow from placing actions, events and concerns within a space of reasons (Guile 2005:206). Responsiveness to reason is not solely a feature of professional thinking, since human activity is immersed in the normative context but is the key facet of human thinking, talking and acting (Guile 2010) including that of children who are initiated in the space of reason by their parents (Derry 2013). The implication of this for graduate expertise development is that learning across contexts crucially entails developing a capability to infer what follows from using the knowledge and skills from educational context in a workplace context. In relation to the graduate horizontal expertise framework this means that the key aspect of boundary-crossing and horizontal expertise framework is precisely the ability to recontextualise prior learning. This is demonstrated in the ability to infer what follows from the re-purposing of the concepts, ideas and procedures across context and using them in a purposeful way to work on relevant problems.

The concept of recontextualisation is a wider process that could refer to ‘the creative use of existing cultural tools to refashion activity’ (Guile 2010:171). I focus more narrowly on ‘learner recontextualisation’ in crossing the boundary between education and work (Guile, 2010). Based on the three principles of recontextualisation, the process of recontextualisation from education to work involves three moments:

- Students participate in higher education practice and learn how to navigate the higher education normative framework. They develop an understanding of the key concepts and develop appropriate skills to successfully navigate the practice – in other words, they learn to use the cultural tools of the practice in order to solve problems in the educational practice.
- Upon joining the workplace the challenge for graduates is to develop an understanding of the work activity, such as its different purpose and the new normative context in which the activity is immersed. Furthermore, in order to draw on their prior learning from higher education, they need to re-purpose educational tools and ways of thinking in order to cope with the challenges of the new institutional context.
- The re-purposing of prior learning involves (i) identifying the concepts and skills in their prior learning in educational activity and developing an understanding of the reasons that underpin them in the home context. This is because ‘we have to rethink the reasons that underpin our use of an existing tool if we are to use it to address the problem in another context’ (Guile 2010:164), and (ii) the concepts and skills are used in the workplace context by inferring what follows from the prior learning in the new workplace context or the distinct workplace space of reason

These three moments form the basis of the graduate learning across contexts challenge that is part of the boundary crossing and horizontal expertise development. The metaphor of recontextualisation captures the distinctiveness of the CHAT-based approach to learning because it refers both to the contextualised nature of human activity that cognitivist approaches have underplayed and to the human ability to use their intentionality and make connections and associations between two disparate contexts with the use of tools, other people, and their own judgement. This latter aspect of recontextualisation was underplayed in the situated cognition approaches and emphasised by the sociocultural accounts of Beach (1999, 2003) and Akkerman and Bakker (2011a). Moreover, although not pursued in Guile's account (2010), there is an evident dialogical element (Akkerman and Bakker 2011a) to recontextualisation. In other words, it is hard to imagine that learning how to navigate the practices around the purpose of an activity and learning to re-purpose the existing tools in a new context could take place in the absence of dialogical thinking and acting. For instance, developing the ability to recontextualise rests on the more fundamental dialogical abilities of humans in perspective-taking, thinking with and about various others, and grappling with the multivoicedness of the boundaries between education and work. I will re-visit the dialogical element of thinking and acting in Chapters 6 and 8, and extend them.

Finally, in relation to graduate expertise development more broadly, Guile (2014) argued that the process of recontextualisation across boundaries is a feature of modern work. For instance inter-professional teams working jointly on a common problem/purpose require the process of recontextualisation in order to work together. Moreover, as elaborated by Edwards' concept of relational agency (2010), this rise in inter-professional collaboration places importance on using existing expertise (what I referred to as 'prior learning') in order to build common knowledge in collaborative projects with diverse professionals. For Edwards (2010) this requires not only being proficient in one's own professional domain (or core expertise)

but also developing a capability to work with the expertise of others collaboratively.

Relational agency is ‘a capacity for working with others to strengthen purposeful responses to complex problems’ (2010:34). Thus, relational expertise and recontextualisation of one’s expert skills are required to work on complex problems. This means that a graduate on the way to becoming an expert will not only have to develop a capacity to recontextualise his/her educational knowledge from higher education to the workplace, but, more importantly, will also have to continually recontextualise their professional understanding when working inter-professionally to solve problems outside the boundaries of their expertise (see Guile 2011b, 2012).

5.3 Towards a new conceptual framework for the learning dimension of graduate transition: The horizontal expertise framework

The aim of this section is, on the basis of the preceding discussion, to identify the main principles of the graduate horizontal expertise framework. In Table 5.10 I gave an outline of all the key concepts and ideas that were relevant to the concerns of this chapter.

The first principle, based on the work of both sociocultural and activity theory authors I reviewed here, learning across contexts has developmental potential.

First, regarding ‘learning across contexts’ in the previous sections I showed that the learning across contexts process crucially entails the challenge of working across the boundaries of sociocultural contexts, and that the outcome of this is the development of graduate horizontal expertise. This means that when moving across boundaries graduates will need to develop new skills, relations and identities within the socio-cultural contexts of education and work (Beach 2003). Moreover, graduates will need to (i) engage in the process of ‘cognitive re-

tooling' or draw on new and use existing available resources in collaboration with others (Engeström *et al.* 1995, 1997), (ii) engage dialogically with the world of work and expand their understanding about what is distinctive both about education and about work, and be able to rethink one in the light of the other (Akkerman and Bakker 2011a), and (iii) grasp the purpose and the normative framework of the work activity and recontextualise or modify their prior learning in the new context (its purpose and its normative framework) (Guile 2010).

Second, regarding the development of graduate expertise I have shown that there is an identity dimension to graduate transition to work. Namely, learning in higher education and at work entails becoming someone new, developing a new identity, where boundary-crossing from one socio-cultural context to another brings potential for re-negotiating old and developing new identities.

Third, the CHAT authors drew out implications for expertise on the basis that work in contemporary knowledge-based industries entails 'constant disturbances, ruptures, and unanticipated learning imperatives' (Engeström 2008:20), and that professionals now more commonly work on project-based and distributed work tasks (Engeström 2008) and in project teams (Guile 2012). Hence, lateral movements across different domains is an increasingly relevant form of expertise in contemporary workplaces (Engeström *et al.* 1995, 1997; Akkerman and Bakker 2011a). This calls for new concepts to complement the view of expertise as a highly specialised bounded domain (Ludvingsen, Havnes and Lahn 2003) with stable and codified professional skills (Engeström 2001). CHAT researchers, as I have shown, have recognised that the two main challenges for newly emerging forms of expertise and the new organisation of work are the need to work (i) horizontally (i.e. across different teams and organisations) and (ii) relationally (i.e. together with other professionals on a joint

problem). Thus, an important aspect of expertise development is learning how to work horizontally or to perform successfully across the boundaries of different social practices together with other professionals (e.g. Engeström *et al.* 1995, 1997; Edwards 2010; Guile 2010, 2014), to generate new knowledge (Engeström *et al.* 1995, 1997; Guile 2010, 2011) and use those insights to inform future actions.

Finally, CHAT-based accounts of learning provide analytical resources to think about the context in which human performance takes place. This was, as I have shown (Chapter 4) underdeveloped in the competence-based approach as well as in the cognitivist and behaviourist models of learning. In this chapter I have described context in terms of communities of practice, activity systems and normative frameworks (see Table 5.13).

Table 5.10 The contribution of CHAT-based models of learning across contexts to graduate expertise development

	Learning across contexts (LAC)	Graduate expertise development
(Lave <i>et al.</i> 1989; Lave and Wenger 1991; Lave 1996)	<p>LAC involves overcoming barriers or boundaries imposed by different contexts</p> <p>LAC is difficult because of various resources (cultural, institutional, interactive) that structure how human activity unfolds in a particular context</p>	<p>Graduates' immersion in workplace practice could be explained using the apprenticeship analogy</p> <p>Immersion in the workplace entails identity development as well as expertise development</p>
Beach (1995 1999, 2000, 2003)	<p>LAC involves developmental transitions and changing relations with contexts by using artefacts</p> <p>Transitions can be consequential for graduates as they develop knowledge, identities, and new positions in the world</p>	<p>Horizontal development entails learning how to participate in different socio-cultural contexts and develop expertise through simultaneous, concurrent or mediational movement</p> <p>Moving across socio-cultural contexts entails the development of new and re-shaping of old identities for graduates</p>
Akkerman and Bakker (2011a)	<p>LAC is a dialogical process that entails mechanisms such as identifying differences between the two contexts, attempting to coordinate actions across the boundaries using artefacts, the expertise of others and the understanding of the perspective of the other sociocultural domain</p>	<p>Graduate movement from education to work entails symbolic, relational and dialogical work to make sense of the boundaries between practice and develop new ways to learn and work across them.</p>
Engeström and colleagues (2001, 2016)	<p>LAC entails crossing symbolic boundaries between domains and requires entering an unknown territory.</p> <p>This requires 'cognitive re-tooling' by drawing on new tools and using them in communication, argumentation and dialogue</p>	<p>Expertise is a multidimensional construct. It has vertical (ascending towards higher forms of knowledge in one domain) and horizontal (moving laterally across different knowledge domains) dimension.</p> <p>There is an increasing demand for experts to complement their narrow domain of expertise by working across contexts to generate new insights (i.e. polycontextuality of work)</p>

Guile (2010, 2014)	<p>LAC is a process of recontextualisation or modification of prior learning in relation to the purpose and the normative framework of the workplace context.</p> <p>In order for this to take place there needs to be an emergence of professional judgement or the ability to navigate the professional space of reasons</p>	When working collaboratively professionals need to continually recontextualise or use their knowledge and skill and fine-tune it for different purposes and contexts
--------------------	--	--

Table 5.11 Three conceptual accounts of context

Context	Description
Community of practice	A community of practitioners who carry and represent the practice; the communities provide meanings to individual participants' thinking and action
Activity system	A stable community of practice analysed in relation to categories such as subjects, object and motive of activity (purpose) and instruments (tools) used to work on the object and create outcomes
Normative framework	Normative context of an activity (or the space of reasons) which gives meaning to it and in relation to which individuals in activity form judgement about relevant thinking and acting in the context

5.3.1 The Graduate Horizontal Expertise Framework as a model of graduate expertise development

In this section I will synthesise these analytical resources into a tentative framework for the learning dimension of graduate transition to work. This framework will constitute an alternative to the skills and competence model described in Chapter 3. The model is highly relevant for historically new forms of organisation of work (post-bureaucratic, flatter hierarchies, project-oriented work, and the imperative of producing new or improving old knowledge and services).

The Graduate Horizontal Expertise Framework describes capability to move between contexts of education and work, identify what has been learned in both contexts and how it could be used for future action. It consists of three expressions of horizontal expertise that

correspond to three interrelated challenges of the learning dimension of graduate transition to work:

First, *the boundary-crossing dimension* refers to crossing the symbolic boundaries between different contexts (practices, activity systems and normative frameworks) and making sense of their differences and similarities. In other words, it entails the insight that new tools are needed to grapple with the challenges of an unknown context, and that some existing tools available to the individual could be relevant. Grappling with the differences between the practices may result in an expanded perspective of the individual and an ability to think about education and work in relation to one another.

Second, *the recontextualisation dimension* refers to the challenge of using cultural tools (or mediating artefacts) such as prior learning (i.e. concepts, knowledge, skills) in the new work context. It refers to the more specific process of re-mediation and re-tooling which consists of understanding the underpinning logic of the work activity and re-purposing prior knowledge and skill to make professional judgements and solve problems at work.

Third, *identity re-negotiation dimension* refers to the developmental opportunity that graduates as boundary-crossers have to create new identities and re-construct old identities and thus to position themselves differently in the world.

Table 5.12 Graduate horizontal expertise framework and three main learning challenges

Graduate horizontal expertise development	Refers more generally to the fact that graduates crucially need to develop the expertise of thinking and acting across qualitatively different socio-cultural domains
- Boundary crossing	Refers to the challenge of graduate transition to expertise that involves entering a new unknown territory of the world of work and using available cultural resources to make sense of the world of work and participate successfully in it
- Recontextualisation	Refers to the challenge of modifying (re-tooling or re-mediating) prior learning from higher education in order to use it at work to solve problems
- Identity re-negotiation process	Refers to the developmental challenge & opportunity enabled by boundary crossing into the new socio-cultural world to examine old and develop new identities

5.4 Conclusion

In this chapter I outlined four CHAT-based accounts of learning across context, and drew on (i) their complementary insights about learning and learning across contexts, and (ii) their accounts of new forms of expertise for the post-industrial knowledge economies, in order to offer an alternative reconceptualisation of the learning dimension of graduate transition to work. I gave an account of the learning dimension of graduate transition to work that I called the ‘graduate horizontal expertise framework’. This framework rests on different fundamental assumptions about learning relative to the skills/competence model of graduate learning. It also differs from the skills/competence model by being informed by the key debates of learning theories and by embedding the concern for learning across contexts as its key element. Furthermore, my framework suggests that some of the key learning challenges of graduate transition to work are the challenges of crossing the boundaries, recontextualising prior learning and re-negotiating identity. The horizontal expertise framework is a tentative substantive model that will underpin my empirical studies (Chapters 7 and 8). I will fine-tune the framework in Chapter 9 in the light of these empirical findings.

In the next chapter I will turn to the second research question of this thesis: ‘What insights can a mixed method study on the learning dimension of graduate transition (i.e. ‘horizontal expertise’) generate?’ and I will introduce some of the key methodological questions and approaches (Chapter 5) that will guide my quantitative (Chapter 7) and qualitative (Chapter 8) research into horizontal expertise.

Chapter 6. Researching the learning dimension of graduate transition: A CHAT-based mixed-method approach

6.1 Introduction

In the previous chapter I presented the ‘graduate horizontal expertise framework’, a learning model for graduate expertise development which rests on a non-dualist dialectic learning approach (CHAT). In this chapter I will address the third research question (‘What aspects of horizontal expertise assist graduates to overcome the learning challenge of transitioning to work?’) by drawing on the methodological literature to develop a CHAT-based mixed-method approach that will inform the research design of my empirical study on horizontal expertise.

This chapter consists of two parts. In the first part (Section 6.2) I will explore the conventional methodological literature in order to outline the emergence of the mixed-method tradition. In the second part (Section 6.3) I will extend the traditional mixed-method argument with CHAT and develop a CHAT-based mixed-method approach to underpin the empirical studies of horizontal expertise work discussed in Chapters 7 to 9. This approach will consist of the key methodological principles (Table 6.9) and it will inform the research design (Figure 6.8, Table 6.10).

6.2 The mixed-method research tradition

In this section I will briefly describe the key ideas of three traditions in social science literature: qualitative, quantitative and mixed-method. I will show that the quantitative and qualitative traditions tend to be seen as oppositional in terms of their philosophical and

methodological orientations. The mixed-method tradition argues that the oppositional qualities of the two traditions create opportunities not barriers for researchers. However, to fully appreciate the mixed-method argument, I will argue, it is necessary to adopt a dialectical theoretical framework such as CHAT that posits that both the social world and the process of knowing and researching the world entail bringing together nomothetic/quantitative and idiographic/qualitative thinking.

6.2.1 Qualitative and quantitative research traditions: paradigms and methodologies

It is cited in the literature that before the emergence of concentrated attempts to establish a mixed-method field of enquiry there was a peak in rivalry between the qualitative and quantitative tradition known as the 'paradigm wars' (Tashakkori and Teddlie 1998; Johnson and Christensen 2010). During this period the differences between the two traditions were over-played (Creswell and Plano Clark 2011) with disputes emerging as to which research tradition is superior. It is from these debates that the 'thesis of incompatibility' between qualitative and quantitative methods emerged which states that qualitative and quantitative traditions are not compatible enough to be used in one research project (see Figure 6.1) (Johnson and Christensen 2010).

The roots of the qualitative/quantitative dichotomy in the traditional methodological literature has been explored in relation to research paradigms (I will refer to this as positivism and non-positivism) and research methodologies (I will refer to this as nomothetic and idiographic methodology and quantitative and qualitative methods) (Sandelowski 2003).

The ‘positivist’ (including post-positivism) and ‘non-positivist’ (e.g. interpretivist, critical and feminist approaches)^{19,20} paradigms differ in their assumptions about the nature of reality, relationship of the knower and the known, the possibility of generalising knowledge and the role of knowledge in value creation (see Table 6.1). The positivist approaches favour a view that reality is tangible, knower and the known are two independent entities, science can provide context-free generalisations using a value-free enquiry and there are causal antecedents to social phenomena (e.g. Lincoln and Guba 1985). The non-positivist approaches such as interpretivism favour a view that realities are multiple, the knower and the known are inseparable, scientific enquiry is value saturated, context-bound and the social phenomena are interrelated which is why it is futile to search for causal antecedents (Lincoln and Guba 1985).

In addition to this, the differences between the two paradigms are said to be rooted in two models of science: rationalist and empiricist (Benton and Craib 2001) associated with two models of mind (materialist and idealist) (Allman 1999). The positivist approach favours empiricist model of natural sciences and the method of observation and experimentation.²¹ The non-positivist approach favours rationalist method of arriving at knowledge through reflection and it modelled its inquiry on humanities (Benton and Craib 2001).

¹⁹ Other terms used to denote the same distinction are positivist and constructivist research, traditional and naturalistic, experimental and interpretive, empiricist and postmodern (Creswell 1994).

²⁰ I will mainly focus on differences *between* the positivist and non-positivist paradigms (i.e. quantitative and qualitative), although I acknowledge that both paradigms are heterogeneous, evolving and that there are important intra-paradigmatic differences in both paradigms (Bryman 2008).

²¹ The fascination with and modelling on natural sciences is exemplified in the convictions of the founding figures of psychology and sociology that they were creating ‘psycho-physics’ (Teo 2005) and ‘socio-physics’ (Benton and Craib 2001).

Figure 6.1 Two traditions in social science and their sources

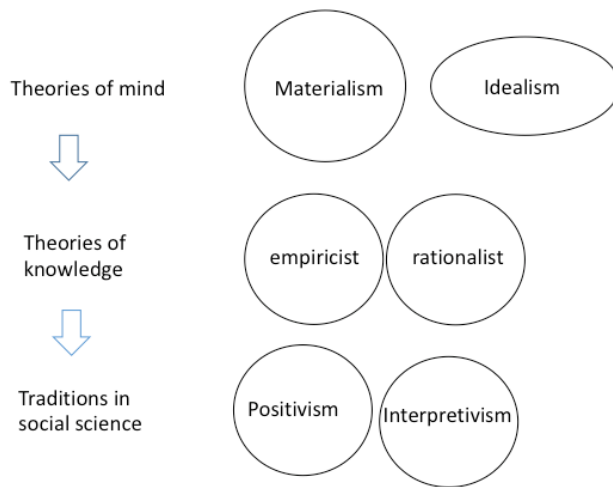


Table 6.1 Differences between positivism and interpretivism (adapted from Lincoln and Guba 1985)

	Positivism	Interpretivism
The nature of reality (ontology)	Reality is single, tangible and fragmented	Realities are multiple, constructed and holistic
The relationship of the knower to the known (epistemology)	Knower and known are independent, a dualism	Knower and known are interactive, inseparable
The possibility of generalisation (methodology)	Time and context-free generalisations (nomothetic statements) are possible	Only time- and context-bound working hypotheses (idiographic statements) are possible
The possibility of causal linkages	There are real causes, temporally precedent or simultaneous with their effects	All entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish causes from effects
The role of values (axiology)	Inquiry is value free	Inquiry is value bound

Thus, the social sciences internalised the dichotomy between the natural scientific and cultural-historical enquiry (e.g. positivist and non-positivist strands in sociology, empirical and cultural psychology, cultural and cognitive anthropology), and the legacy of this

dichotomy is most visible in the dichotomies that positivist and non-positivist research paradigms are associated with (Figure 6.1).

However, it is important to note that there are authors who argued that there are important commonalities between positivism and non-positivism which often go unnoticed in the research literature and that more nuanced and that other important distinctions between the paradigms in social science can be charted. Namely, their work suggests that non-positivist accounts that broke away from dualistic assumptions about knowledge and mind (or the ‘epistemological assumptions’ in Table 6.1) represent the true break with positivism, not all non-positivist approaches *per se*. In fact, as I will demonstrate in this chapter, the theoretical approach I will use, CHAT, is one of the theoretical models that could not be situated easily within either the empiricist/positivist nor the rationalist/interpretive approaches due to its dialectic legacy.

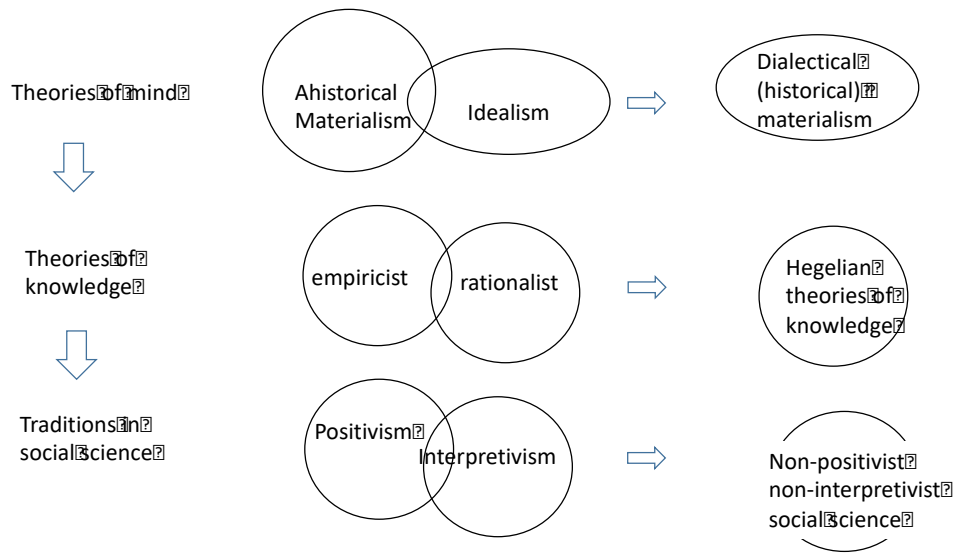
Writers from within CHAT (e.g. Ilyenkov) or related perspectives (e.g. Markova, Allman) argued pointed to the commonalities between the empiricist and rationalist theories of knowledge (and their associated theories of mind) which underpin the distinction positivist and non-positivist approaches in social sciences. For instance, the Marxist philosopher Ilyenkov argued that both the empiricist and the rationalist models of (social) science may rest on a common assumption that the individual and the world are logically independent entities belonging to two realms (Bakhurst 1991). An empiricist attempts to bridge the division between the individual and the world through science – through a value-free and objective endeavour. For rationalist social scientists the divide between the individual and the world is overcome through the constructions of the subject (Bakhurst 1991).

This separation of knowledge from reality in both empiricist and rationalist models in social science is underpinned by the assumptions of dualism. This dualism is associated with the

Cartesian tradition characterised by the dichotomies between the individual and the world, the mind and the body, and the quantitative and the qualitative (Markova 1982). The distinction and separation into dualisms is followed by giving importance to one side of the dichotomy at the expense of the other (Allman 1999). For instance, positivist social science places value on quantitative research and interpretivist social science on qualitative research.

The dialectic orientation (shown in Figure 6.2) in social science opposes thinking in terms of dualism. It postulates that ‘the real world and consciousness should be understood as relation rather than separate “things”’ (Allman 1999:37). For instance, according to Allman (1999) idealism and ahistorical materialism have created a dualism between the mind (idealism) and the world (materialism) instead of positing the two as intrinsically related (dialectical materialism). Moreover, this dualism was transposed into theories of knowledge or epistemologies as rationalism and empiricism (Cartesian science), which are now opposed to the dialectical, ‘Hegelian’ model of science (Markova 1982). In the social sciences this dichotomy has manifested as interpretivism and positivism in opposition to the dialectical models of social science.

Figure 6.2 The dialectic critique of common epistemological dichotomies



Methodological approaches: Nomothetic and idiographic

On the level of methodology and methods quantitative and qualitative distinction is discussed in terms of nomothetic and idiographic methodologies and quantitative and qualitative methods (Sandelowski 2003) and have affinities with two research paradigms (see Table 6.2). By ‘methodology’ I will mean a more general research strategy that can be nomothetic (e.g. survey methods) or idiographic (e.g. discourse analysis). I will refer to methods as techniques and procedures to gather and analyse data, which can be quantitative (e.g. statistical analysis) or qualitative (e.g. interviews and focus groups).

Table 6.2 Typical relationship between theoretical framework, methodology and method in the social science literature

Theoretical approach	Positivist theoretical approach	Non-positivist theoretical approach
Methodology	Nomothetic methodology	Idiographic methodology
Methods	Quantitative methods	Qualitative methods

In the literature, as evident in Table 6.3, the nomothetic and idiographic tradition are often ‘set against each other as polar opposites’ (Crotty 1998:15) because of their ‘different orientations toward research’ (Neuman 2007) or ‘different strategies of enquiry’ (Creswell 2003). Moreover, nomothetic and idiographic traditions are said to differ in the formulation of research problems, their choice of instruments to collect the data, and the ways they treat and analyse data (Brannen 1995).

Table 6.3 Conventional distinctions between two research methodologies (adapted from Hammersley and Atkinson (1995))

Nomothetic	Idiographic
Quantitative data (numbers)	Qualitative data (words)
Artificial setting	Natural setting
Focus on behaviour	Focus on meaning
Adoption of the model of natural sciences	Rejection of the model of natural sciences
Deductive approach	Inductive approach
Seeking scientific laws	Identification of cultural patterns
Realism	Idealism

In addition to this, as Table 6.3 shows, nomothetic and idiographic methodologies use quantitative and qualitative tools (i.e. methods) in order to produce numerical and textual data. For some such as Crotty (1998) the label ‘qualitative and quantitative’ should be reserved, crucially, for methods and data.

Therefore, the qualitative and quantitative tradition differ in the theoretical assumptions and methodological orientations. They also assume a typical association between theoretical framework, methodology and method (see Table 6.2). It is often difficult to draw a sharp distinction between theoretical frameworks and methodology in paradigmatic qualitative and quantitative research because the theoretical and philosophical assumptions inform the methodology (Crotty 1998). For instance, there is a tendency in the research literature to associate positivism with nomothetic (quantitative) research and non-positivism with idiographic (qualitative) research (Crotty 1998; Creswell 2003). For instance, the positivist

methodological orientation is typically perceived as having affinity with survey methodology, statistical methods, and making generalisations that span time and contexts (see Table 6.3).

However, as I will show in the next section, the mixed-method argument questions this automatic association of paradigms, methodologies and methods.

6.2.2 A mixed-method argument for social research - combining theoretical frameworks, methodologies and methods

In this section I will show that mixed-method tradition advocates that there are no barriers to mixing theoretical framework with different methodologies and methods. However, there is no consensus on how the mixing can be achieved. I will also highlight the ‘integration issue’ that is pervasive in the literature and argue that there is residual dualism in the mixed-method argument that underpins the integration issue.

It is often depicted that the mixed-method approach to research resulted from the so-called ‘paradigm wars’ of the 1980s and that although allegiance to the paradigms still persists among researchers the ‘pacifist’ mixed-method movement became more popular in the late 1980s and 1990s (Tashakkori and Teddlie 1998; Johnson and Christensen 2010). However, the argument for mixed-method research has had a longer history. In fact, as I will demonstrate below, some of the early accounts of mixed-method research have come from the foundational figures of both sociology and psychology who argued that there is merit for both nomothetic and idiographic research when the goal is to explain complex social phenomena (Cole 1996; Crotty 1998).

In psychology Cole (1996) discussed the ‘lineage of cultural psychologists’ (White 1996:xii), describing several historical attempts to bridge the ‘two psychologies’: the ‘natural-scientific’ associated with nomothetic methodology and the ‘social-scientific’ associated with idiographic methodology. All the accounts suggest some form of complementarity of the

nomothetic and idiographic enquiries. In sociology, Max Weber has been labelled as a 'proto-mixed method' thinker (Teddlie and Tashakkori 2009:56) for his non-empiricist and non-positivist framework for social research (Benton and Craib 2011). As Crotty notes, Weber considered that: 'Uniqueness and historicity are manifest in nature as well as humanity, while general covering laws may explain human behaviour as well as natural phenomena' (Crotty 1998:68).

According to Ringer (1997) Weber managed to bridge nomothetic and idiographic thinking by way of (i) reformulating interpretive understanding as a form of causal analysis and (ii) developing his method of 'singular causal analysis'. In his historical approach to sociology Weber was concerned primarily with explanations of particular historically situated phenomena by focusing on their 'causal antecedents'. His method presumed that both idiographic, or interpretive understanding, and natural scientific (nomothetic) enquiry are ways of arriving at understanding the causes of events – 'factors' and 'background conditions' that underlie the phenomena that is being researched (Ringer 1997).

These examples of mixed-method thinking are relevant to contemporary arguments for mixed-method research within a single research project. The classical and contemporary debates share similar concerns, such as how to employ nomothetic and idiographic enquiries when solving concrete research problems. However, the main premise of the contemporary mixed-method argument is that the automatic couplings between paradigms and methodology are problematic (Tashakkori and Teddlie 1998). Instead the contemporary approach assumes that if the philosophical and theoretical assumptions do inform the use of methodology then any theoretical assumptions could be used with any methodological tool (Table 6.4).

Table 6.4 Possible combinations of theoretical approaches and methodologies in mixed-method research (Crotty 1998)

	Positivist-oriented theoretical framework	Non-positivist theoretical framework
Idiographic methodology and Qualitative methods	Possible	Possible
Nomothetic methodology and Quantitative methods	Possible	Possible

In Table 6.4 I present the mixed-method orientation with regard to the theoretical framework and methodology/method distinction. The idea captured in Table 6.4, is that a positivist approach can, in principle, use qualitative methodology and the non-positivist approaches can use quantitative methodology. For instance, originally qualitative methods, such as interviews and observations, were conducted primarily in an objective and positivist manner (Denzin and Lincoln 2005).

Thus there is a consensus among the mixed-method researchers that some form of a synthesis or ‘mixing’ between the paradigms or methodologies is possible and indeed desirable. However, there is no consensus on how this mixing is best accomplished. There are a variety of positions on this matter that could be placed on a continuum ranging from the understanding that the paradigms cannot be employed in the same research (the ‘incompatibility thesis’) to the position that they could (the ‘compatibility thesis’), but there is a difference in opinion as how to proceed with the ‘mixing’ (for an overview see Teddlie and Tashakkori 1998:2003).²²

One common way of exploring the possibilities of mixed methods research has been ‘a typological view of research design’ (Maxwell and Loomis 2003:242), which consists of varied taxonomies on how to sequence qualitative and quantitative methods of data collection

²² In this sense, as Johnson and Christensen (2010) note, the term ‘mixed- method’ is misleading because it is not only methods that are combined. They propose the term ‘mixed research’ to incorporate the different levels at which the mixing takes places.

and analysis. I will not pursue this line of argument because I am interested in outlining the broader perspectives on mixed-method research that are commonly used in social research. To explore the positions in the mixed-method literature on the issue of what is mixed (paradigms or methodologies) and how it is mixed (the question of synthesis or integration) I will show how three popular mixed-method approaches in education address these two issues: the substantive, pragmatic and dialectic approach (Table 6.5) (Greene and Caracelli 2003).

Table 6.5 Three popular strategies for mixing methods in one research project

Approach:	Substantive	Pragmatic	Dialectic
Theoretical framework / paradigm	One theoretical framework	Overarching pragmatic orientation which justifies the use of one or several theoretical models and methodologies based on the research problem	Explicitly combines different paradigms and searches for the complementarities and tensions between them
What can be mixed	Methodologies and methods	Methodologies and methods	Paradigms, methodologies and methods
Methodology + method	Quantitative and qualitative methods	Quantitative and qualitative methods	Quantitative and qualitative methods
Focus / strength	Being rooted in one conceptual model provides coherence to analysis and interpretation	Driven by research problem which determines which theories and methodologies will be combined	Explores the intersections and tensions between different methodologies taking a layered approach

The substantive model presumes the existence of one overarching theoretical and philosophical framework which influences the way in which methods are mixed (Greene 2007). This position is responsive to the early criticism of mixed-methods that there is a 'lack of worldview, paradigm or theory for mixed-model studies' (Datta 1994) and the more contemporary criticism that the mixed-method approach tends to be 'method-centric', which works 'to the detriment of theory-based research' (Hesse-Biber 2010:25).

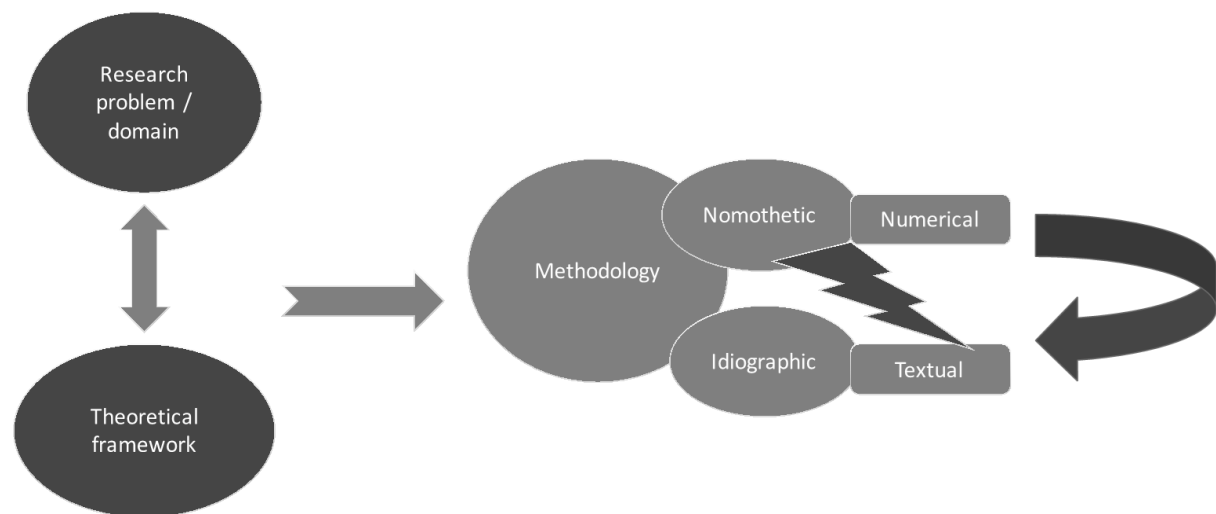
The *pragmatist approach* represents an invitation to step out of the mixing paradigm dilemma and to espouse a third, more flexible, philosophical position – pragmatism (Tashakkori and Teddlie 1998). The guiding principle and strength of this approach is the ‘responsiveness’ of research design choices to the research problem (Greene and Caracelli 2003). It posits that if multiple paradigms or methodologies are necessary to address the research problem then ontological and epistemological barriers should not be a concern (Rocco *et al.* 2003). However, in practice, researchers tend to use a very broad idea of pragmatist philosophy (Johnson, Onwuegbuzie and Turner 2007) and that the questions of how opposing worldviews (i.e. positivist and non-positivist) can co-exist with differing notions of causality, relativism and subjectivity within one theoretical framework has not been resolved (Denscombe 2008).

Finally, the *dialectic approach* views the different theoretical traditions and frameworks as important 'historical and social constructions' (Greene 2007). It maintains that researchers need to purposefully focus on the tensions and contradictions between different theoretical traditions (e.g. positivist and non-positivist) and their commonly associated methods. The dialectic mixed-method researchers aim to juxtapose, bring into dialogue and form synergies between the traditions (Rocco *et al.* 2003) in relation to research problems. Within this approach different traditions of research are seen as partial but valuable lenses on complex research phenomena and their differences are seen as valuable and informative (Greene and Caracelli 2003).

What is evident from these approaches in relation to the question of what is being integrated is that methodologies and methods tend to be mixed under one paradigmatic framework that is either predominantly qualitative, quantitative or pragmatic. In the dialectic approach the paradigmatic differences and their role in research are addressed more fully. The contribution

of all three influential mixed-method approaches is outlined in Figure 6.3 which draws attention to the importance of research problem (pragmatic mixed-method), theoretical framework (substantive, pragmatic and dialectic mixed-method), and the tensions between using methodologies informed by different research paradigms in one research (dialectic). In the subsequent section I will argue

Figure 6.3 Mixed-method research design and the foci of different mixed-method approaches



In particular, the issue raised by the dialectic mixed-method perspective about the importance of integrating qualitative and quantitative data despite the tensions in their philosophical and methodological orientation. I will refer to this as an ‘integration issue’. The integration issue is a largely unresolved debate about the strategies of how to integrate qualitative and quantitative data in one research project in the mixed-method literature (Mason 2006; Bryman 2007:21; Mertens *et al.* 2016). I will discuss this below.

The synthesis of quantitative and qualitative data and residual dualism in mixed-method research

One of the enduring problems in the mixed-method literature is the synthesis of qualitative and quantitative data. For instance, the editors of the *Journal of Mixed Method Research* have

argued that this ‘integration challenge’ could be understood as ‘[t]he imperative to produce a whole through integration that is greater than the sum of the individual quantitative and qualitative parts [...] or 1+1=3’ (Fetters and Freshwaters 2015:116). The synthesis or integration of insights involves ‘linking’ and ‘connecting’ quantitative and qualitative research in such a way that the two strands of research are ‘compared’, ‘contrasted’, ‘built on’ and ‘embedded’ (Tashakkori and Creswell and 2007). The discussions proceed in terms of acknowledging that the integration is challenging (e.g. Bryman 2007) or one of ‘the most complex steps’ (Onwuegbuzie, Slate and Leech 2009:14), identifying barriers to integration (Bryman 2007), and proposing ways in which these challenges could be tackled (Mason 2006; Bryman 2007:21; Mertens *et al.* 2016). This is an important debate for the domain of mixed-method research because the main contribution of the ‘third way’ in research (Bazeley 2009:206) are precisely the new types of insights about social phenomena it purportedly generates (e.g. Mertens *et al.* 2016). Yet some researchers have argued that the main focus of development of the mixed-method field have been ‘foundations and design typologies’, whereas the problem of integration consistently remains ‘under-researched’ (Greene 2007 in Bazeley 2009:206) and a ‘thorny-issue’ (Hesse-Biber and Johnson 2015).

In Table 6.6 I set out some of the on-going issues and debates taking place in discussions of mixed-methods. From the table the integration issues are evident because one of the main points of contention is that there is no consensus on ‘what is being integrated’ in mixed-method research - whether it is methods (i.e. data), methodologies or theoretical approaches that are being mixed. Part of the reason for this is that the mixed-methods paradigm is heterogeneous and the boundaries between the mixed-method approach and nomothetic and idiographic approach tend to be porous. For instance, Johnson, Onwuegbuzie and Turner’s (2007) depiction of the broad and narrow versions of the mixed-method argument depicts mixed-methods design as a continuum with quantitative and qualitative designs constituting

the opposing ends. The narrow version of mixed-method research is research in which qualitative and quantitative components bear equal weight. The broader mixed-method argument is that a quantitative method and data may provide support for dominantly qualitative research and vice versa. Some authors refer to a similar distinction between ‘multiple’ (qualitative or quantitatively dominated) and ‘mixed-method’ research approaches (Greene 2015). Mason (2006) outlined a helpful distinction between four co-existing logics of integration in the mixed-method literature. Among her four logics of integration only the ‘integrative’ and ‘multidimensional logic’ refer to the more ‘narrow’ meaning of mixed-methods research in which there is a genuine attempt to overcome the qualitative/quantitative dichotomy (see Table A.2 in appendix A)

Table 6.6 Thematic overview of mixed-method literature, adapted from Johnson, Onewzbugie and Turner (2007)

	Identified divergences	Possibilities advocated in the literature
Theme 1	What is being mixed in mixed-method research?	Methods Methodologies Research paradigm
Theme 2	When and where in the design is the mixing carried out?	Data collection/methods stage Methodology/research perspective stage All stages
Theme 3	The breadth of mixed-method research	Collection of both quantitative and qualitative data Mixing methodological ‘worldviews and languages’ Mixing at all stages (e.g. data collection, integration, writing up)
Theme 4	The reason for doing mixed-method research	To gain a fuller picture of the phenomena To corroborate or triangulate the findings
Theme 5	The orientation of mixed-method research	Bottom-up or problem-oriented research Conceptual, such as transformative or emancipatory agenda oriented

What is evident in the discussion on integration is what I call residual dualism in the mixed-method literature. By residual dualism I mean that mixed-method researchers, particularly

those who employ rhetorical, parallel and integrative logic, start with the assumption that quantitative and qualitative data are two distinct and separate entities that researchers need to, couple together. This, as I will show in the next section, is in contrast to the dialectical methodological assumptions of CHAT that begin with a premise of unity of qualitative and quantitative attributes in the social world. The qualitative and quantitative data, in the dialectic approach, are perceived to be constructed through the research process. I will show how CHAT can draw on the strengths of mixed-method approaches in education (see Table 6.5) and substantively extend them. The result of this extension, as I will show in Chapter 9, is the ‘integrated mixed-method model’. I will revisit the issue of integration or synthesis of mixed-method insights in the next section (6.2) and in Chapter 9, where I will outline the ‘integrated framework’ for horizontal expertise research.

6.3 CHAT and research methodology

In this section I will draw on CHAT as theoretical and methodological framework in order to show how the mixed-method integration problem can be addressed and a set of principles for the mixed-method study of horizontal expertise developed (section 6.3). Specifically, I will show how the dialectical principles embedded in CHAT can help:

- Rethink the paradigmatic differences in social science research (e.g. positivism/interpretivism, qualitative/quantitative methodologies) by suggesting that the social world and research methods as aspects of the world are always both ‘qualitative’ and ‘quantitative’. Hence the dichotomy between the two is unhelpful because both qualitative and quantitative methodological inquiries can contribute to the description and ultimately explanation of research phenomena.

- Strengthen and extend the mixed-method argument by suggesting a way in which the mixed-method integration problem could be seen as an argumentative process that uses mixed evidence rather than a set of prescribed generic procedures.
- Draw implications for research generalisations from the dialectic concepts of human subjectivity and the relationship between the individual and the social plane in CHAT research.

However, before discussing the implications of the CHAT dialectical principle for mixed-method research I will briefly introduce the dialectic principle that underpins CHAT.

6.3.1 Cultural-historical activity theory: A dialectic orientation, and implications for research practice

The aim of this section is to introduce the reader to the foundation of the dialectical orientation of CHAT. This is a backdrop to examine in depth how CHAT can help address two salient dichotomies in classical social science literature: quantitative/qualitative and individual/social. Below I will show that what makes the dialectic orientation distinctive for social sciences is that it helps CHAT researchers to consider phenomena in their complexity by focusing (i) the development and unfolding of social and psychological phenomena and (ii) the mutual interconnectedness and dialogue of the seemingly disparate phenomena in the concrete reality of the complex social world.

The legacy of dialectic thinking in the work of Vygotsky and CHAT has been well-recognised (Cole and Scribner 1974; Wertsch 1991; Daniels 2001; Derry 2013). The dialectical orientation is underpinned by the assumption that the world and the people in the

world are in a state of constant development and transformation (Wozniak 1975; Stetsenko 2009) and that, therefore, researchers need to give²³

'attention to the constant movement and dynamism, change and transition, fluidity and historicity, totality and interdependence, that is, on a continuous and unitary process that never ends' (Stetsenko 2009:70).

Related to the unitary developmental process is the idea of the 'unity and struggle of the opposites' in the totality of the world (Wozniak 1975). The totality of the world refers to the dialectical concept of reality as 'concrete', a 'structural whole', 'evolving' and 'self-forming' (Kosik 1976:18). This conceptualisation of reality is different from the views pervasive in non-dialectic sciences that reality can be broken down into simple elements (the atomist-rationalist) or that it subsumes its individual parts (the organicist view) (Kosik 1976). In other words, the dialectic orientation postulates that to understand phenomena in the world (including people, their mental activity and learning) one needs to attempt to understand them in their concrete form as historically formed totalities (Bakhurst 1991). This is different from focusing on only one of the elements ('opposites') belonging to the unity or a category (e.g. analysing the individuals but not their social context), which generates partial, fragmented insights and leads to reductionism (Wozniak 1975). Hence the focus of CHAT on the collective, historical (genetic) analysis, and practical activity (Wertsch 1991). Finally, the totality of phenomena is composed of different individual phenomena. The individual phenomena are related to one another and to the totality:

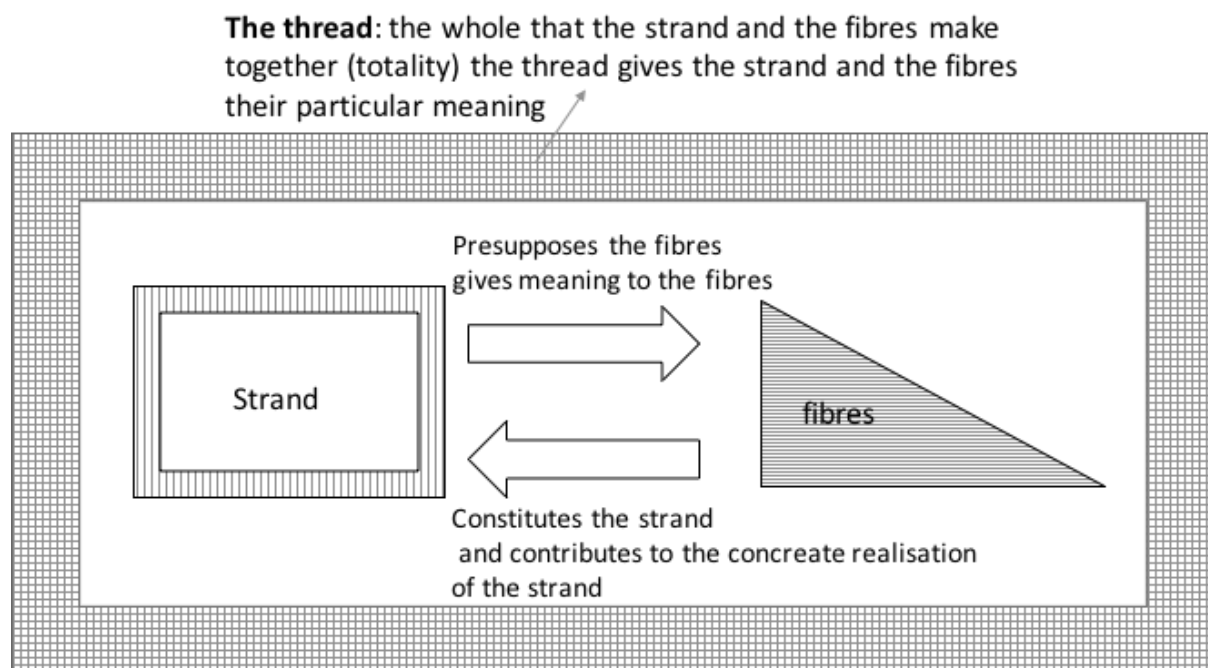
The phenomena are thereby understood as forms, modes of existence, which should not be considered distinct and separate from one another but intrinsically linked in a dialectical unity, that is, unity in difference. (Stetsenko 2009:76)

²³ This could, perhaps, be best understood in relation to the opposite, contrasting, 'essentialist premise' which emphasises that social phenomena are static, separated and 'thing-like' entities (Stetsenko 2008: 476).

This idea is illustrated by Roth using the analogy of a thread composed of different strands and fibres (Roth and Lee 2007) and can be illustrated as in Figure 6.4. The relationship between the thread, the strand and the fibres is a dialectical relationship because:

'the opposites [e.g. individual-collective, subject-object, agency-structure] are theorized as nonidentical expressions of the same category, which thereby comes to embody an inner contradiction. Saying that a relation is dialectical is equivalent to saying that any part that one might heuristically isolate within a unit presupposes all other parts; a unit can be analyzed in terms of component parts but none of these parts can be understood or theorized apart from the others that contribute to defining it' (Roth and Lee 2007:196).

Figure 6.4 The analogy of dialectical relations between a thread, strand and fibres



In CHAT theory and research the dialectical relationship is primarily explored between individuals and their activity or the mind and the world. For instance, for Leontiev (1978), the superordinate concept of human social activity (a thread) is intrinsically connected to and exists in relation to the actions of those individuals who sustain that activity (a strand) through actions (fibres). Activity, on the other hand, provides meaning to particular actions

(e.g. the activity of schooling provides meaning for individuals sitting an exam). In

Leontyev's words:

'Human activity does not exist except in the form of action or a chain of actions. For example, work activity exists in work actions, school activity in school actions, social activity in actions (acts) of society, etc. If the actions that constitute activity are mentally subtracted from it, then absolutely nothing will be left of activity.' (Leontiev 1978:100)

In what follows I will show that CHAT enables me to address two salient methodological dichotomies (quantitative/qualitative and individual/social) and generate new assumptions about mixed method research that will form the basis of what I will call the integrated mixed-method framework (Figure 6.8 and Figure 6.9).

CHAT and the quantitative/qualitative dichotomy

The dialectic tradition would imply in CHAT that there is a relationship between quantitative and qualitative (as interlinked opposites), as I showed in the previous section. Curiously, most CHAT research is mostly qualitative and rarely mixed-method,²⁴ in the sense of combining large quantitative data with analysis of particular cases. In this section I argue that there are no conceptual reasons why CHAT-informed studies could not combine qualitative and quantitative methodologies. In fact, I will show that (i) the belief that mixing different methods in order to develop an understanding and explanation of research phenomena was evident at the inception of CHAT, and (ii) the epistemological assumptions of CHAT I outlined in the previous section suggest that using both quantitative and qualitative methodologies can help uncover different dimensions of social phenomena (i.e. both their unique, idiographic and continuous, quantifiable aspects).

²⁴ For instance the edited collection *Learning and Expanding with Activity Theory* (Sannino *et al.* 2009) and the article 'Studies of Expansive learning: Foundations, findings and future challenges' (Engeström and Sannino 2010).

First-generation CHAT research (see Engeström 2001) and the cultural-historical approach of Vygotsky (1978) aimed to bring together different psychological approaches under one programme. Specifically, Vygotsky and Luria aimed to establish psychology as a discipline in which both nomothetic and idiographic methodological approaches could co-exist. As Cole (1996:36) argued their project for the discipline of psychology was

'not intended as either a special branch of or a particular approach to psychology. It was conceived of as a resolution of 'the crisis in psychology', a comprehensive psychological framework within which the various traditional sub-areas of psychology represented a principled division of labour, rather than competing approaches to the same object of study. (Cole 1996:36)

Luria wrote at the time: 'One of the major factors that drew me to Vygotsky was his emphasis on the necessity to resolve this crisis [between explanatory and a descriptive psychology]' (Cole, Levitin and Luria 2010:175).²⁵ The crisis was between the nomothetic approach to psychological research, which searched for the general principles of psychological development of humans, and the idiographic approach, which searched for the unique psychological features of individual phenomena.

Luria combined both nomothetic and idiographic inquiry in his case study research on two patients with specific neurological disorders (Cole, Levitin and Luria 2010). The rationale for Luria of using an approach that combines nomothetic and idiographic enquiry was that he needed an approach that 'looks at people alternately in terms of scientific categories and diagnostic nomenclature and as whole human beings' (White 1996:xv). In these studies Luria combined in-depth analysis of a particular case with more general data on the characteristics of a particular diagnostic category from large-scale experiments.

²⁵ Explanatory psychology was natural-scientific, because it used methods from natural sciences, such as experimental methods, to study psychological phenomena. Descriptive psychology used analytical methods akin to phenomenological methods in order to *understand* the psychological phenomena (see Vygotsky 1978).

This justification for the need to employ both nomothetic and idiographic principles was the dialectic orientation of Vygotsky and Luria. For them it was necessary to generate multiple perspectives on the phenomena under investigation in order to ‘capture’ them as a whole. In their view researchers need to reconstruct the fundamental conditions of the existence of this phenomenon by focusing on its development (i.e. through a genetic method). Luria argued:

Scientific observation is not merely pure description of separate facts. Its main goal is to view an event from as many perspectives as possible. The eye of science does not probe "a thing", an event isolated from other things or events. Its real object is to see and understand the way a thing or event relates to other things or events. [...] The more we single out important relations during our description the closer we come to the essence of the object, to an understanding of its qualities and the rules of its existence. And the more we preserve the whole wealth of its qualities, the closer we come to the inner laws that determine its existence. (Cole, Levitin and Luria 2010:217-218, my emphasis)

The distinction in the above quotation, between the description of the phenomenon (through identification of relations) and the understanding of the phenomenon, echoes Vygotsky’s (1978) distinction between ‘genotypic’ or causal analysis and explanatory and ‘phenotypic’ analysis, whose purpose is the description of different manifestations or idiosyncrasies of phenomena. Vygotsky argued that, although the primary goal of his analysis is the explanation of the causal conditions of phenomena, this goal ‘does not repudiate explanation of current phenotypical/descriptive idiosyncrasies but subordinates them to the discovery of their actual origin’ (1978:63). In other words, to understand the causal development at the roots of the phenomena being researched the researcher first needs to understand their external manifestations and be able to describe them. Thus, both Luria and Vygotsky introduced a similar distinction between (i) the principle method of *explanation* of the cultural historical genetic method (which involves retrospectively tracing back the transformation of the existing phenomena through its development in order to shed light onto its ‘the rules of existence’), and (ii) the subordinate, but nevertheless important, level of

description of phenomena in which the idiosyncrasies of particular phenomena are described, thus moving beyond the explanatory level. This is reminiscent of the Weberian idea that to overcome the pervasive dichotomies in social sciences researchers need to focus on explanation and use available methodologies to help them arrive at this goal (Ringer 1997).

The second relevant characteristic of the CHAT research programme was its focus on practical and applied problems. This is evident in the commitment to a concrete, practical level of activity as unifying different dimensions of human life (Hedegaard 2008). Moreover, the focus on the practical problem was in line with the dialectical legacy and the conviction that ‘scientific investigation may lead to discover possibilities to intervene’ (Langemeyer and Roth 2006:28). In relation to the mixed-method orientation of CHAT researchers, as Cole (1996:36) argued, the true synergy in combining nomothetic and idiographic analysis in psychology comes when the two approaches are employed ‘in the service of human purposes, that is, in applied psychology’.

For instance, for Luria the purpose of this combination of information arising from the use of different methods was to design a specific therapeutic intervention for individual patients, as well as to learn about the general principles of the mind (e.g. Cole, Levitin and Luria 2010). Similarly, Ilyenkov’s (2007[1975]) applied work with deaf and blind children in Zagorsk is a case study or a window into the exploration of ‘general’ psychological principles.

Over the intervening years when Vygotsky and Luria have been writing, CHAT empirical work has predominantly developed within the qualitative research tradition. One person who has notably addressed the absence of the mixed-method perspective in CHAT was Roth (2008). He argued that real world phenomena, from a dialectical perspective, are totalities that are both ‘qualitative’ and ‘quantitative’ (Ercikan and Roth 2005). In other words, real world phenomena are both continuous and countable, as well as discontinuous and unique.

This echoes the fundamental dialectic principle that all real world phenomena, as totalities, consist of the unity and struggle of the opposites (i.e. quantitative and qualitative aspects). For research methodology arguments this means that ‘full investigations of phenomena need to consider both of these aspects [qualitative and quantitative]; therefore, it makes little sense to set up a qualitative-quantitative in research’ (Ercikan and Roth 2005:16).

Moreover, if the social world is both quantitative and qualitative then the tools created in and from that world also have both quantitative and qualitative properties. In other words, as Ercikan and Roth show (2005), quantitative research methods already have qualitative or idiographic characteristics, such as naming and conceptualising variables and interpreting findings, while at the same time qualitative research often involves categorisation and classification – both of which are rudimentary forms of nomothetic enquiry.²⁶ This means, according to Ercikan and Roth (2005), that researchers should not focus on situating their research in one of the research paradigm camps (qualitative or quantitative) and instead should focus on the research problem and the generalisations they seek to make, and then on employing both quantitative and qualitative expertise in their research project. Put differently, researchers should focus on other important aspects of the research practice (e.g. relevance, impact, and generalisations).

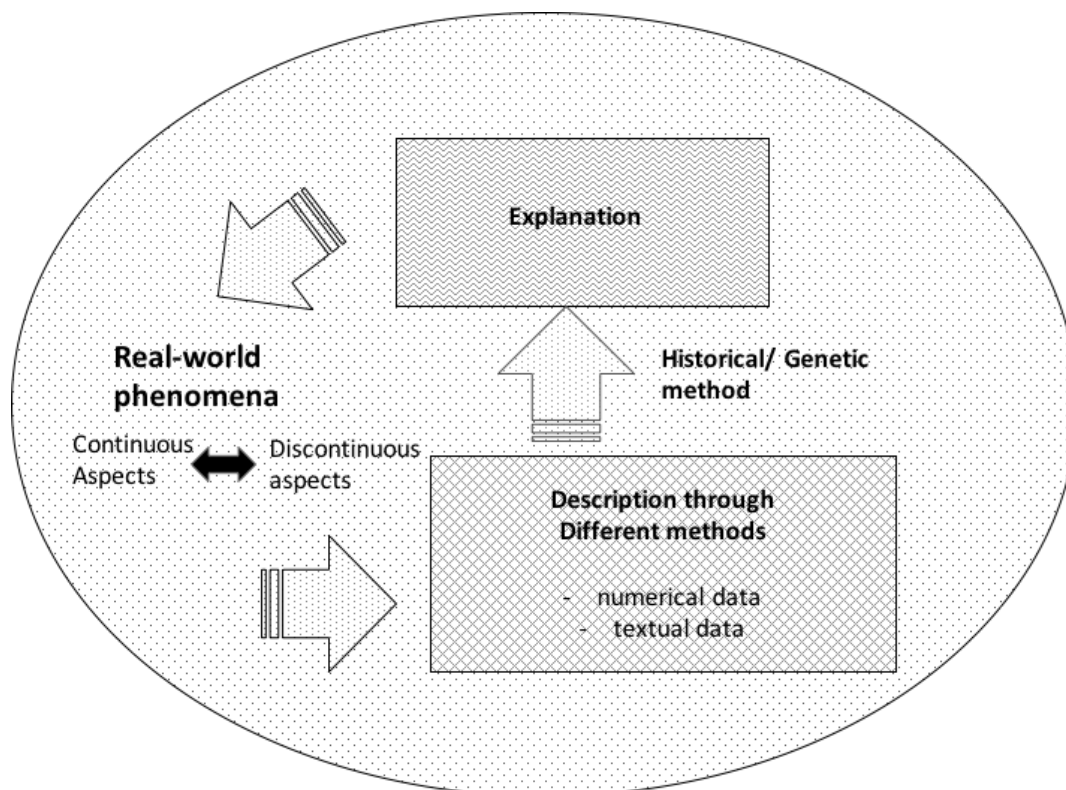
In Figure 6.5 above I set out the main elements of the methodological assumptions outlined so far. The main elements show that (i) real world phenomena, such as those tackled by researchers, are best conceptualised as ‘concrete totalities’, exhibiting both unique/discontinuous and countable/continuous qualities, (ii) the research methods are cultural tools applied to the research phenomena to generate qualitative and quantitative data, (iii) researchers need to describe the research phenomena in order to explain them, and (iv)

²⁶ Other researchers, including statisticians, agree that there is no quantitative analysis without a substantive plane that imbues the quantitative procedures with meaning and assumptions (Mislevy 2009a).

the explanations of the phenomena may be the starting point for a new cycle of empirical research.

Implicit in this argument is that the social research process is a societal activity itself, with particular purpose, aims, tools and relevant communities. Recasting the research process in terms of practical research activity, I will show below, suggests new important sources of mediation that are obscured when focusing solely on research design in the way that the mainstream methodological literature does (e.g. Crotty 1998).

Figure 6.5 The methodological assumptions of CHAT, as discussed so far



6.3.2 The contribution of CHAT to the mixed-method argument and the synthesis problem

Having outlined some of the main methodological assumptions of CHAT I will use these insights to address the integration issue in mixed-method literature and put forward the foundation of the ‘integrated mixed-method framework’ by drawing on the work of authors

who suggested that re-cast as practical activity, the main purpose of non-positivist social science research is to convince the relevant stakeholders of the merit of the claims made in the research.

I will draw on the work of authors from CHAT (e.g. Roth 2009; Stetsenko 2005) but also other approaches (e.g. sociolinguistics of Bachman, 2009 and social psychology Bauer and Gaskell 2011) to show that this collective practical activity can be described as argument-based dialogue with relevant stakeholders and an overarching purpose (i.e. object-motive) to convince the stakeholder of the merit of research claims. I will show, first, that Toulmin has recognised similarities between his position and CHAT (Toulmin 1999) and, second, that his ideas about argument-based dialogue have inspired some writers (e.g. Bachman 2009) to develop a position about research as a process of argumentation. Finally I will follow Roth (2009) and argue that Bachman and others provide a way to develop an epistemological foundation for a CHAT-based mixed method, with reference to the work of Stetsenko (2010)

From the standpoint of CHAT the elements of research design, the paradigmatic and the mixed-method discussions that I outlined so far, are best understood in relation to practical research activity. Social science research activity has developed sophisticated cultural tools to conduct research, such as the different elements of research design (Table 6.10) in relation to several research communities, such as the quantitative, qualitative and mixed-method communities. These three communities could be understood as using the analytical resources I outlined in Chapter 4 – as communities of practice, activity systems and spaces of reason. Re-casting research in terms of collective practical activity opens up the possibility of understanding alternative, previously hidden, dimensions of research.

In particular, some researchers have made a convincing case that research activity can be re-cast along the lines of making an argument. They state that if the positivist assumptions are

relinquished (e.g. the assumptions of a value free enquiry and the uncovering of causal relationships) then the purpose of social research can be best conceived of as making an argument to interested parties, rather than uncovering the truth about the social world. For instance, Bachman (2005, 2009), a social linguist, used the idea of argument-based dialogue from Toulmin's work (2003[1959]) to argue that the key purpose of non-positivist social science is to put forward an argument about the social world to the relevant stakeholders, not to uncover the truth or correctly describe reality. This is because the phenomena of the social world belong to the 'symbolosphere' in which the primary focus is on concepts, ideas and representations of the world that underpin the observable phenomena, not the observable phenomena itself. For instance, sociological categories, such as class or social capital, are symbolic categories for thinking about observable patterns rather than about the phenomenon itself.

Specifically, for education research Bachman (2009) argued:

This is because in educational research, our purpose is not to discover truths or laws about the physical world but rather to convince or persuade various groups of stakeholders that the results of our research are useful for some purpose, whether this be advancing our understanding of some phenomena in our socially mediated symbolosphere or helping stakeholders make decisions that will benefit our educational systems and society.

Importantly, according to Bachman (2009), this applies to both quantitative and qualitative research:

Certainly, from the perspective of what [quantitative] researchers do (observe, interpret, generalize), empirical research in education would appear to be very similar to that in the physical and biological sciences. However, when we consider the ways in which educational researchers report and interpret the phenomena they observe, and the entities that are of interest to them, it becomes clear that the research enterprise in education is quite different from that in the natural sciences. (2009:128)

Similarly, social and cultural psychologists Bauer and Gaskell (2011:10) claimed that the fundamental goal, not solely of social science but of scientific activity in general, is

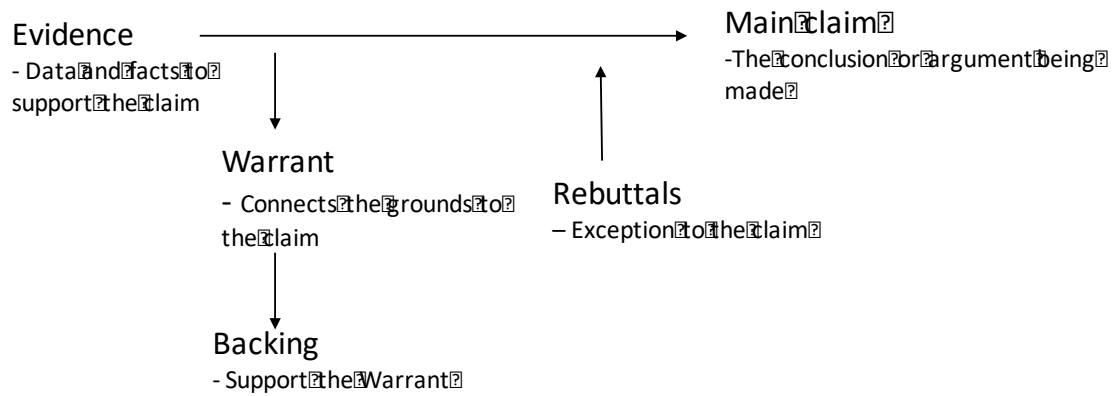
'communicating', and communicating involves persuading listeners that some things are the case and others are not [...] as researchers want to convince their peers, politicians, funding sources, or even their subjects of study of the truth- value and significance of their findings.

Like Bachman (2009) Bauer and Gaskell (2000) argue that re-conceptualising research activity as a form of a persuasive argument directed at a range of stakeholders enables researchers to 'treat quantitative and qualitative research equally in these terms' (p.11). This is important because, as I will show next, in the elaborations of the argumentative approach quantitative and qualitative research are seen as different forms of *evidence*. Moreover, Bauer and Gaskell (2011) add that acknowledging research as a persuasive activity strengthens rather than erodes 'the scientific ideal' (p.11). This is where they take forward the discussion by carefully delineating that approaching research activity as a form of persuasive argument-based activity does not mean dissolving what is distinctive about research as a way of engaging with the world. According to Bauer and Gaskell (2011):

the scientific ideal is not lost but is preserved in a collective motivation to build and to maintain the particular form of scientific persuasion - that is, to maintain a rhetoric that we bias towards logos by reducing the ethos and pathos in communication. The rules of method and procedures for gaining and presenting evidence in public protect us from over-reliance on authority (ethos), and from mere pandering to the audience - from telling them what they want to hear (pathos). Serving neither authority nor audience remains a key value of any research that deserves the label. (p.10-11)

Next, I will show how the idea that research activity is an activity of argumentation was taken forward by those authors who developed analogies between the structure of the argument (e.g. Schum 1994; Toulmin 2003 [1959]) and the elements of research design.

Figure 6.6 Toulmin's argument model (adapted from 2003 [1959])

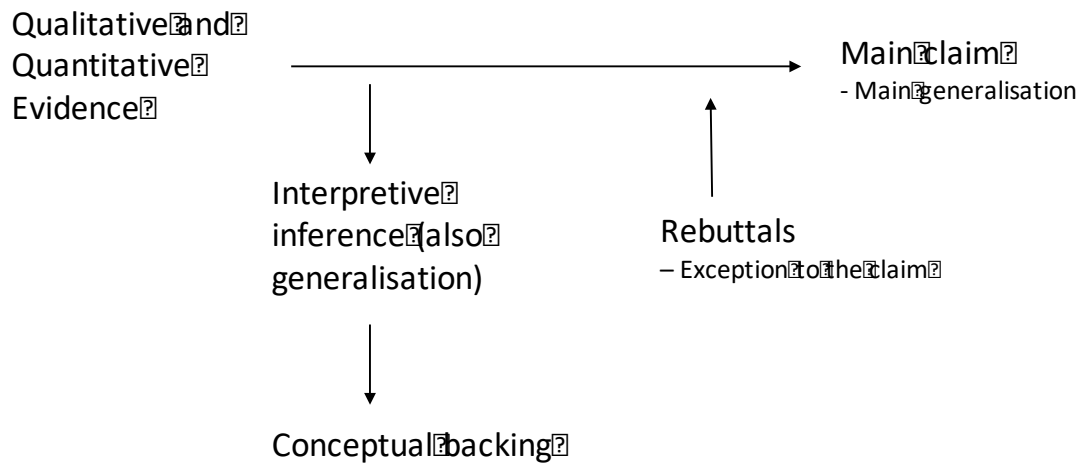


Second, educational researchers advanced the argument analogy to develop an argument-based approach to social research. Within this approach Toulmin's model of argument (2003 [1959]) is recast (Figure 6.6.) in order to represent different elements of the research design (Figure 6.7). In other words, the elements of research design discussed so far (Table 6.1) under this approach become steps in the chain of an argument: theoretical framework becomes conceptual backing, qualitative and quantitative methods and data become different types of evidence, the analysis and interpretation of data become inferential links, and the concluding discussions become research claims. I will describe these different chains below.

This is summarised by Bachman (2009:143):

The structure of an assessment use argument that I describe follows Toulmin's (2003) argument structure. At the center of an assessment use argument is a link between some data, or observations, and a claim, or an interpretation of those observations. These warrants are in turn supported by backing, which consists of evidence that may come from prior research or experience, or that is collected by the researcher specifically to support the warrant. In addition to these parts, the argument also includes rebuttals, or potential alternative interpretations or counterclaims to the intended interpretation. These rebuttals may be either weakened or strengthened by rebuttal data.

Figure 6.7 Argument structure in social research



Evidence as qualitative and quantitative data

Recast as argument-based, the data from the research (both quantitative and qualitative) could be seen as two different types of *evidence* from which inferences are drawn (Ercikan and Roth 2009). For instance Ercikan and Roth (2005) have said ‘we understand the term “data” to mean those mathematical or textual elements that researchers use in support of their claims’ (219), and ‘representations of phenomena in nature, society, education, and culture’ (Ercikan and Roth 2006a:15-16).

From the model (Figure 6.7) the warrants as interpretive inferential links connect the data/evidence with the conclusions/research claims (Bachman 2009). By extension, in mixed-method research the inferential links could also refer to the integration of qualitative and quantitative data. One important type of interpretive inference in social research is the generalisation of insights from the research data to another context. Ercikan (2009) described three types of generalisations in social science. These types of generalisation are tied to different more general research uses and purposes, such as, for instance, whether the researcher wants to make claims encompassing the population of his or her sample (statistical generalisation), extend the claims to another particular context (case-to-case generalisations), or use the claims to support a theory (analytical generalisations).

The backing of an argument refers to the specialised knowledge domain of a research study, such as a theoretical or explanatory framework (e.g. an approach or a research paradigm). In other words, theory and experience provide backing to the warrant (Mislevy, Wilson *et al.* 2002). For instance, a psychological theory could more generally exemplify backing:

A psychological perspective determines the nature of every element in an assessment argument, and the rationale that orchestrates them: the kinds of things one might say concerning students (claims), what kinds of things one wants to see in what kinds of situations (data), and the larger patterns or generalizations relationships, based on theory or experience, that justify reasoning from one to the other (warrants) (Mislevy, Moss et al. 2009a:71)

Thus, the contribution of CHAT to the research debate is twofold. First, CHAT focuses attention on the importance of the research problem (as an aspect of concrete practice), the theoretical framework (as a set of mediating tools available to researchers) and the dialectic tension between the nomothetic and idiographic methodology (as two opposite ways to conceptualise and address the research problem). These three elements are what the three main approaches to mixed-method research highlighted, namely the pragmatic, substantive and dialectic models, respectively. Thus, CHAT, as a framework to inform mixed-method research, plays into the strengths of the three dominant approaches. However, because of the dialectic orientation, CHAT as a framework for mixed-method research also assumes that the qualitative and the quantitative aspects of the world are profoundly intertwined. It suggests that the distinction at the level of data (numbers versus words) is constructed by research methodologies and reflects the dominant form of evidence that research communities endorse. Moreover, it suggests that the challenge for the mixed-method integration of data is to show how different forms of qualitative and quantitative evidence can contribute to making compelling claims to the research community.

In other words, the ‘integration problem’ of mixed-method research (i.e. the issue of how best to synthesise qualitative and quantitative evidence in research) is seen as an argumentative process that uses mixed evidence rather than a set of prescribed generic procedures to follow (I will revisit and take forward this claim about the integration of data in Chapter 9). This sheds light on the extent to which the mixed-method literature²⁷ has tended to focus on the differences between qualitative and quantitative methodologies. In the process it underplayed the commonalities (e.g. as different types of evidence) of nomothetic and idiographic methodologies in relation to their common overarching purpose to put forward a convincing argument and underpin it with evidence and backing. Thus, the integration challenge from the CHAT perspective could be seen as a matter of bringing together different types of evidence about a research phenomenon into a convincing argument. The different types of evidence are two distinct ways of representing the totality of the social world and, thus, provide complementary perspectives on the phenomenon.

The dialectic principle, individual/social dichotomy and implications for research

In this section the implications of the dialectical, or co-constitutive, relationship between the individual and the collective will be explored. In the CHAT literature the relationship between the individual and the social is described as one where they mutually constitute and imply each other (Daniels 2001). This is because CHAT presupposes a ‘relational ontology’ – ‘in which people and their environment have “shared existence as aspects or facets of one and the same unified reality”’ (Stetsenko 2008:477). In other words, the unity and struggle of the opposites in this context represent people (‘fibres’), their social context (‘strand’) and the world which they share (‘thread’). I will firstly outline a CHAT account of the relationship

²⁷ Some mixed-method researchers have recognised the importance of ‘disrupting’ the deep-seated dichotomy between quantitative and qualitative research by offering different typologies and categorisations of social research approaches that cut across the quantitative/qualitative dichotomy (e.g. Onewyegbuzie, Slate and Leech 2009). However these voices are still a minority in the community.

between the individual and the collective by drawing on Stetsenko’s (2010) notion of the ‘collectividal’. I then draw upon the methodological implications of the notion of the ‘collectividal’ that will represent the salient aspect of the methodological approach to the focus group research carried out herein (Chapter 8).

Within the CHAT approach individuals are seen as being formed by social and cultural conditions and, in turn, shaping or influencing the social world of which they are part (see Table 6.7). The reciprocal relationship between the individual and the social is explained in terms of human subjectivity being profoundly social because it is a ‘motor’ that re-creates and transform the social world by carrying on, reproducing and changing social practices.

Table 6.7 The relationship between the collective and the individual plane of activity

“The collectividal”	
The collective	The individual
<p>The collective (culture, society) is a source or material from which the subjectivity and agency of individuals is made (Stetsenko 2005; 2010; Holzkamp 2013)</p> <p>The collective (e.g. social conditions) afford and restrict agency of individuals (Holzkamp 2013)</p>	<p>Individuals recreate and transform the social world (Stetsenko 2005; 2010) by exercising restrictive (recreation) and expansive (transformation) agency (Holzkamp 2013; Stetsenko 2005; 2010)</p> <p>Individuals, through and across activities and their social positions, form ‘identities’ and self-understandings that inform their actions (Holland <i>et al.</i> 2001; Dreier 2016)</p>

In CHAT the subjectivity and agency of individuals are seen as profoundly social because not only does human subjectivity emerge from humans being born into a social world, but it continually recreates and transforms the social world and collective activity (Stetsenko 2005; 2010). Thus, individuals contribute to social practices by (i) participating in them, internalising socio-cultural artefacts (e.g. language, norms, knowledge) and externalising, enacting and partly reproducing them, and (ii) changing, modifying and advancing the

practice and thereby driving future activity cycles. The processes of internalisation and externalisation appear to be interdependent and mutually constitutive mechanisms, as captured in Stetsenko's concept of 'collectividal' (2010), a concept I will utilise here to denote the profoundly social concept of individual subjectivity and agency in CHAT. Thus, the dialectical relationship between the individual and the social is best captured by the notion of 'collectividal' (Stetsenko 2010), as suggesting the extent to which the individual and the social are interrelated and mutually constituting. In Table 6.7 I show the main assumptions relating to the 'collectividal', based on the brief discussion in this section.

In what follows I explore the implications of the dialectic relationship between the individual and the social (or the 'collectividal') for CHAT-based research.

The methodological implications of the notion of human subjectivity in terms of the 'collectividal' enable CHAT researchers to move from observing or talking to specific individuals to generalising about human cognition or research phenomena (Roth 2009). This is different from, for instance, statistical generalisation in which the relationship between the individual and the collective is *externally* conceptualised based on patterns in data (e.g. establishing relationship through correlations). It is also different from the interpretivist qualitative research approach (e.g. the methods of grounded theory or ethnography), which aims to provide descriptions about concrete, specific cases and aims for a low level of generalisation of insights from the specific to the collective.

Some CHAT researchers specify the interrelationship between the individual and the social in terms of the dialectical distinction between 'generalised possibilities' and the 'concrete realisations' of these possibilities (Roth 2009; Holzkamp 2013). The generalised possibilities 'frame' the possibilities for action and thinking for individuals and may refer to concepts such as social structures, culture, and language (Roth 2009). Generalised possibilities are not

decontextualised products of human activity, but an active, dynamic and historically contingent collective creation (Markova 1982). Nevertheless, they are ‘abstract’ and incomplete (Markova 1982; Roth 2008), and only made concrete and complete when realised or manifested in a particular way by real individuals in concrete situations (Roth 2009). As Stetsenko and Arieivitch (2004:491-492) argued:

For example, the most vivid creations of social practice, such as language and art, are the products and carriers of practice and human subjectivity but only when re-enacted (or re-constructed) in new rounds of ever-expanding cycles of practice by real people in their real lives. It is in this sense that, for example, words and music are mute unless someone again and anew re-enacts them, thus becoming ideal and alive for a particular person.

Thus, since the collective is manifested in the actions of real individuals, CHAT researchers analyse the individual realisations of the collective (e.g. a sample of graduates who completed an internship) in order to make inferences about the relationship between the individual and the collective (e.g. how graduates in general may use an internship to develop labour market expertise). For instance, analyses of situated forms of language (e.g. through focus groups) or practice (e.g. through observation) serve as windows into generalised possibilities. Thus, Roth (2009) argued that CHAT researchers guided by dialectic logic ‘generalise’ their insights not by ‘decontextualising’ and bracketing out the context in which the observations were made, but, on the contrary, by explicitly theorising the context. In Roth's words (2009:250):

The cultural-historical method seeks to understand the conditions under which different forms of experience arise that exist in some objectively given historical situation of society and culture. Generalization here has the sense not of abstracting (taking away context) but of understanding context and experiential differences as different realizations of the same action possibilities.

Thus, the ontological position of CHAT, that the individual and the collective are dialectically related and intertwined, has important methodological implications for how

individual and group discourse and participation in practice are framed – as a window into collective possibilities for action. As I will show in Chapter 8 the contribution of the sociocultural strand of CHAT that focuses on mediational means, such as language and discourse, is helpful in analysing the collective and situated aspects of discourse in a particular situation.²⁸

6.4 CHAT-based mixed-method research and the study of horizontal expertise

In this section I will outline several important implications of the preceding discussion for the study of horizontal expertise. First, I will outline more general assumptions about the research activity and the mixed-method research, as extracted from the discussions in the previous chapters (Table 6.8), that will form the foundation for the mixed-method studies of this thesis (Chapters 7 and 8). Then I will focus on the two important methodological distinctions that CHAT researchers made – the distinction between objects of inquiry and between units of analysis, before linking them to my mixed-method study. Second, I will outline specifically how the CHAT framework will guide my quantitative (nomothetic) study of extant skill surveys and my qualitative study of horizontal expertise development in an internship.

Based on the description in the preceding section (6.2) the current methodological discussions in social science could be reframed in CHAT terms in the following way. A research-based enquiry could be seen as a concrete practical activity in which members of

²⁸ In Roth's (2008, 2010) work the most important tool that gives researchers access to generalised possibilities and their specific realisation is the use of language and communication in a particular situation (e.g. the classroom) by the research participants. For Roth (2010) one cannot distinguish between knowing a language and knowing one's way around the world because language can only be learned through participation in human activity. This view of language as intertwined with the development of thought is close to Vygotskian ideas on semiotic mediation and post-Vygotskian ideas about the role of wider societal discourse in shaping human thought and action (cf. Wertsch 1991; Daniels 2001).

research communities work on research problems in dialogue with other people, tools and research practice. The overarching purpose of the research activity could be seen as description and explanation of research phenomena in order to put forward claims underpinned by solid arguments. In this context the concepts I outlined in the first part of this chapter (section 6.1), such as research design, paradigms and methodologies, represent different types of tools or mediating artefacts that researchers use to mediate their relationship with the research phenomena. In Table 6.8 below I outline some of these key CHAT-based assumption about research practice, drawing implications for mixed-method research practice.

Table 6.8 CHAT-based research assumptions outlined so far

CHAT-based assumptions about research practice	Implications for mixed-method design
Social research is a practical societal activity neither strictly qualitative nor quantitative	Mixed-method social research is a practical activity
Some researchers sympathetic to CHAT have argued that the purpose of the research activity is to make convincing claims using evidence and warrants	Mixed-method research uses at least two types of evidence (quantitative and qualitative) to support the making of research claims to the relevant communities
<p>Researchers have developed a range of tools and conventions that help them conduct the activity</p> <p>Social science literature highlights the tools: Research problem Theoretical and methodological approach</p> <p>Some CHAT researchers use additional tools: Object of inquiry Units of analyses</p> <p>The argument structure becomes a useful resource to think about the research activity: The claim Evidence Backing Interpretive inferences</p>	<p>Mixed-method researchers use a range of tools from different traditions to design and conduct their research process.</p> <p>These research tools profoundly structure (i.e. mediate) how researchers conduct activity</p>

In addition to the above mediational tools CHAT researchers have developed additional tools to help them with specific methodological challenges. One of the methodological challenges of positing the mind and the world as intertwined is how to account in the research for all the interrelated factors at the different levels of analysis that affect the phenomena being investigated. In other words, there is a risk in CHAT research of the unit of analysis 'expanding not only to include every aspect of a social world that might be of interest but also to be impossible to define as elements are in a continuous process of change' (Edwards 2010:139). A helpful methodological distinction made by CHAT researchers with respect to researching learning is the distinction between objects of inquiry and units of analysis, and the background and the foreground of the research.

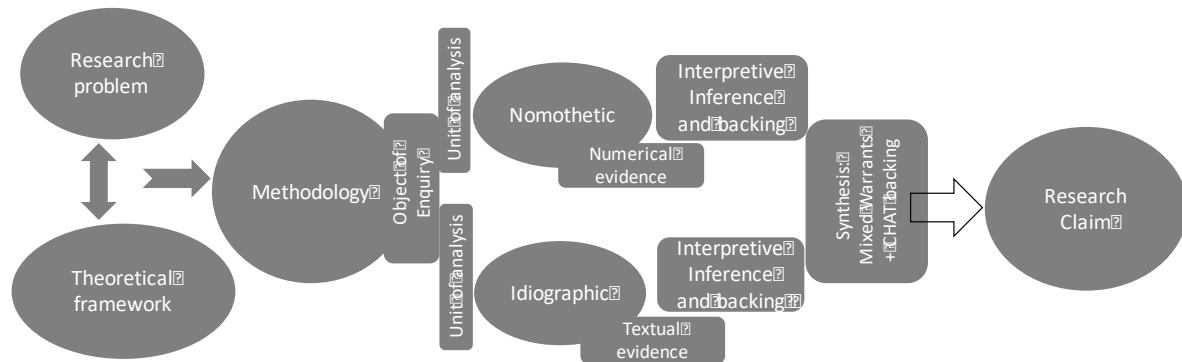
Säljö (2007, 2009) argued that since the CHAT framework works with an expanded scope of learning it becomes crucial to carefully choose units of analysis that are able to capture the complex relationships assumed by theoretical concepts. It is important to explicate a distinction between two methodological elements that would help researchers ensure logical continuity between (i) what researchers are conceptualising, and (ii) what the researchers are observing using the various methods. Units of analysis are then, as Säljö (2007, 2009) argued, shaped by theoretical perspectives and representative of a particular conceptualisation of the phenomena under investigation. The more abstract or theoretical conceptualisation of phenomena under investigation (in psychology these are sometimes referred to as 'hypothetical constructs') are *objects of enquiry*, whereas units of analysis are closer to the more concrete and observable level.

Other CHAT researchers introduced analytical concepts such as 'background' and 'foreground' of research (Edwards 2010) to help maintain the wide-angle focus while not losing sight of the object of inquiry in a particular research project. For instance, Edwards

(2010), drawing on Taylor (1995 in Edwards 2010), proposed that once one has decided on the object of inquiry it is useful to distinguish between 'background' phenomena and the 'foreground' phenomena under investigation and to attempt to understand their dynamic relation.

Taken together, the insights from Table 6.8 and the concepts of 'objects of enquiry' and 'units of analysis' could be used to extend what I previously outlined as mixed-method design (Figure 6.3). The mixed-method research design schema (Figure 6.3) is, with the contribution of CHAT, augmented to include these additional analytical tools (Figure 6.8). For instance, the distinction between the object of inquiry and unit of analysis breaks down the category of 'methodology' into two parts – conceptualisation of the research phenomenon (object of inquiry) that always mediates research and the conceptualisation of observations (units of analysis). Moreover, conceptualising the research process in terms of different steps in argument-building turns quantitative and qualitative methods into two types of evidence and backing that can contribute to the strengths of the main research claim about the research problem. Finally, in Figure 6.8 the role of the audience is illustrated as hovering above the design in order to represent the interlocutors of the research communities to which the claim is addressed (\rightarrow) and the assessment of plausibility and merit of the claim by the community, illustrated by the second arrow which is parallel to the first one (\leftarrow).

Figure 6.8 CHAT-informed mixed-method research design



Research Design for mixed-method study of horizontal expertise

So far I developed a substantive (graduate horizontal expertise framework, Table 5.12) and methodological (CHAT-informed mixed-method research design, Figure 6.8) rationale for a mixed-method study of graduate horizontal expertise. In this section I will introduce a design of my empirical study.

In relation to the classical methodological literature the outline of my study will look as follows (Table 6.10). First the theoretical approach I espoused is underpinned by non-dualist ('Hegelian') and non-positivist approach to social research. On the level of methodology, I will employ both nomothetic methodology by analysing survey data and idiographic methodology by analysing focus group discourse and I will draw on textual and numerical data.

Table 6.9 Research design, quantitative/qualitative tradition and horizontal expertise

Elements of research design	Salient distinctions in social research for each element of research design	
General Philosophical Orientation	The Cartesian model of science	The Hegelian model of science: Cultural Historical Activity Theory (CHAT)
Theoretical approaches	Positivist e.g. post-positivism, logical positivism	Non-positivist (e.g. interpretivist, critical, feminist, postmodernist): Cultural Historical Activity Theory (CHAT)
Methodology	Nomothetic (e.g. experimental research, survey research): Statistical Analysis of secondary REFLEX dataset	Idiographic (e.g. discourse analysis, grounded theory, feminist standpoint research): Discourse Analysis of focus group patterns
Methods	Quantitative: descriptive and inferential statistical methods	Qualitative: interviews and focus groups

Furthermore, based on the methodological framework I have developed in this chapter, the mixed-method study of graduate horizontal expertise is represented as follows (Figure 6.9).

The figure demonstrates that research problem, which I initially conceptualised as ‘the learning dimension of graduate transition to work’ (Chapter 2), was analytically developed in dialogue with CHAT literature to refine the object of enquiry into ‘horizontal expertise development’ (Chapter 5).

Figure 6.9 Mixed-method research design for horizontal expertise

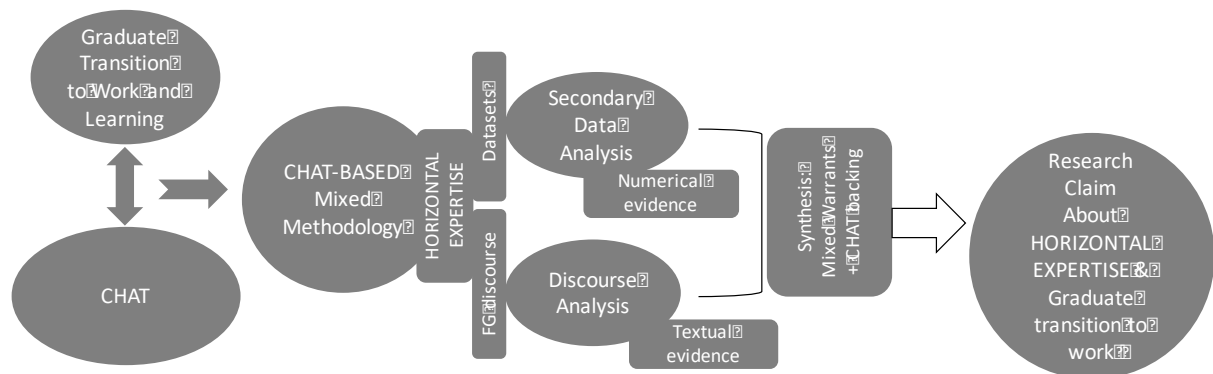


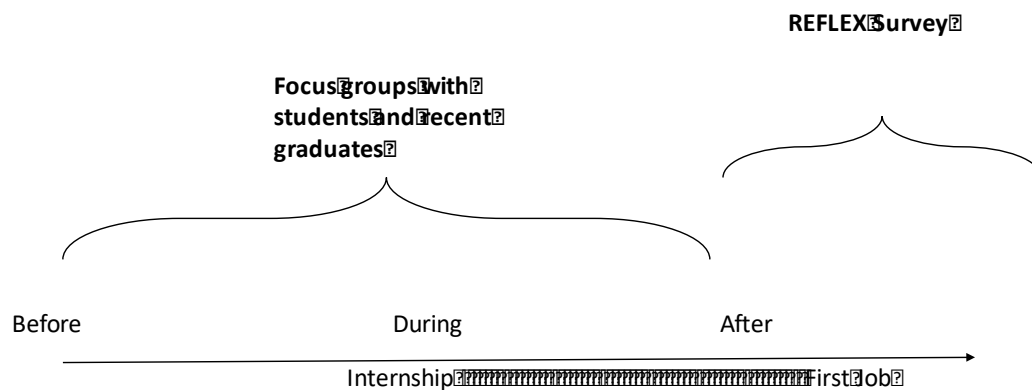
Table 6.10 Design of horizontal expertise research

	Nomothetic/ Quantitative study of HE	Idiographic Qualitative Study of HE
Overarching research problem (Chapter 2)	Research on the learning dimension of graduate transition to work is divided along paradigmatic lines into qualitative and quantitative research. What aspects of horizontal expertise assist graduates to overcome the learning challenge?	
Specific research problem	Horizontal expertise is not sufficiently accounted for in the data sets that inform the thinking and decision making of policy-makers and practitioners	Due to the protraction and diversity of transitions in the contemporary work context it is becoming increasingly more necessary to consider the horizontal aspects of expertise
Specific research question	What are the insights about horizontal expertise development that can be extracted from the existing datasets?	How do students and recent graduates experience movement from education to work in an internship?
Theoretical framework	Cultural historical activity theory (CHAT)	
Object of enquiry	Graduate Horizontal expertise model	
Unit of analysis	Data from extant skill surveys on graduate transition to work	Focus group accounts of education to work movement via an internship
Evidence	Predominantly quantitative	Predominantly qualitative

This object of enquiry will be explored using two units of analysis which correspond to two methodologies that I will employ. The quantitative/nomothetic methodology will be used for quantitative data from REFLEX survey on graduate transition to work (i.e. the dataset as the unit of analysis) to produce predominantly numerical evidence. The qualitative/idiographic methodology will be used for focus group discourse (i.e. the unit of analysis) to produce textual evidence. After extracting insights from both qualitative and quantitative data I will synthesise both forms of evidence that underpin the main claim of the thesis that graduate horizontal expertise development is a more compelling description and explanation of the learning dimension of graduate transition to work than skills and competence discourse (Chapter 9).

The different elements of the empirical argument that will follow in the next three chapters are also presented in Table 6.10. The table shows that the qualitative and quantitative studies are mutually linked by an overarching research problem because they both address, as well as the theoretical model and object of inquiry, which both studies draw on.

Figure 6.10 Quantitative and qualitative data and expertise development in and after an internship



The relationship between the quantitative and qualitative research of graduate expertise development is analytical. The students and graduates in the quantitative and qualitative study are from different cohorts and the data was collected at different points in time. Survey participants graduated in 2000 and completed the questionnaire in 2005 whereas the focus group participants were students or recent graduates in February- April 2016. What they have in common is the experience of doing an internship and studying in England. However, their similarities are analytically significant. The two types of data provide insights into different phases of expertise development (see Figure 6.10). For instance, the quantitative study showed the extent to which internship played an important role in how graduates subsequently perceived their first job. The qualitative study provided more nuanced explanation of why this may be the case by zooming in on the thinking and the decision-making during and in the more immediate aftermath of the internships.

The process of analysis. The subsequent two chapters are empirical chapters and they follow the timeline of writing of this thesis (for the timeline see Table A.1 in annex). As it will be clear, first I chose to focus on REFLEX survey of graduate transition from 2005 because it is a representative survey of graduates from England. Moreover, it contains comprehensive data on prior work experience of graduates which enabled me to combine variables and identify graduates with an experience of internship and graduates with no experience of internship (N=126) or no prior work experience of any kind (N=244). An internship was, I showed, an increasingly more common form of transitioning to work for aspiring professionals (Chapter 2) and an important window into boundary-crossing and recontextualisation that are part and parcel of horizontal expertise development (Chapter 5). The quantitative research revealed that graduates who had an opportunity to develop horizontal expertise in an internship were positioned differently in relation to their first job and may have been able to secure more rewarding first employment than their peers without an internship. However, what the quantitative data did not allow me to see is *how* and *why* the students were re-positioned in relation to their first job – how they became ‘boundary-crossers’ and the implications of this engagement for their subsequent thinking and actions. It became evident that in order to understand how horizontal expertise developed during an internship I would need to qualitatively research learning in an internship. The qualitative study involved focus group discussion with students and recent graduates who had the experience of completing at least one internship. The study concentrated on the learning process during an internship and on the implications of this experience for subsequent thinking and actions of students. The qualitative study revealed, I will show, the struggle to develop expertise across boundaries, against the backdrop of identity renegotiations.

6.5 Conclusion

In this chapter I developed some of the key methodological principles for the mixed-method research of horizontal expertise. I showed that there is a long legacy of splitting and dividing quantitative and qualitative research traditions into separate research paradigms. I traced this legacy back to the Cartesian or dualist paradigm of mind and contrasted it to the dialectic (or Hegelian) paradigm. Moreover, I drew on CHAT as a representative theoretical model underpinned by the dialectic paradigm to develop some of the foundational methodological principles for the mixed-method study of horizontal expertise to be used in this thesis.

First, I showed that CHAT gives theoretical grounding to the mixed-method argument by suggesting that mixed-method research can contribute to the description of the research phenomena from different perspectives and thus aid their explanations. Second, I showed that the focus of CHAT on practical goal-oriented research activity suggests that mixed-method research could be seen as a practical activity, which aims to put forward convincing claims (i.e. descriptions and explanations) about the research problem using two types of evidence (qualitative and quantitative). The challenge of synthesising the two pieces of evidence does not rest on a pre-determined procedure, but on the type of argument and claim researchers wish to make and on the research community to which they belong (I will return to this point and develop it in Chapter 9). Third, I showed that, because CHAT theorises the individual and the collective level of analysis as conceptually linked ('collectividual') this enables CHAT researchers to make generalisations about social phenomena that do not narrowly refer to the immediate research context. Finally, I introduced the distinction between object of inquiry and unit of analysis, which enabled me to show points of intersection between my qualitative and quantitative studies (object of inquiry – 'horizontal expertise') and their

distinctive contribution through different units of analysis (focus group discourse and datasets).

PART III. The empirical argument

Chapter 7: The learning dimension of graduate transition – A quantitative study of REFLEX data and horizontal expertise

7.1 Introduction

Following the previous chapter in which I established the basic premises of a CHAT-based mixed-method approach to horizontal expertise research, in this chapter I will empirically analyse and discuss one extant graduate dataset. The guiding question of the secondary analysis of the survey will be ‘What insights about horizontal expertise development can be extracted from existing datasets?’

This chapter is divided into two parts. In the first part I will develop more specific analytical resources in order to re-purpose the extant dataset for the analysis of horizontal expertise. I will suggest that secondary analysis could be understood from the perspective of the CHAT-based mixed-method approach as the re-purposing of cultural artefacts from one research community into another.

In the second part of the chapter I will focus on the REFLEX dataset on graduate transition. I follow the steps established in the first section and (i) demonstrate the background of the emergence of the REFLEX survey (i.e. its original purpose in the context of the EU work in education) and the learning assumptions that are embedded in the survey (e.g. the generic skill approach), (ii) show how the ‘horizontal expertise framework’ I previously established could be introduced as the basis on which the REFLEX data set can be repurposed, and (iii) use descriptive and inferential statistics as well as regression techniques²⁹ to empirically demonstrate new trends and relationships in the datasets (e.g. the differences in first job

²⁹ Regression techniques enable researchers to make predictions about their outcome variables based on their independent variables (i.e. having had an internship) (Field 2009).

experiences of graduates who have completed an internship in higher education and those who did not) and ground the explanation of these trends in the horizontal expertise framework (e.g. the differences are due to the internship group developing emerging forms of horizontal expertise).

At the conclusion of this chapter I highlight that horizontal expertise is a good explanatory framework for explaining the following trends that are problematic for the competence model of learning. Namely, internship graduates see their first jobs as more demanding skills-wise, more relevant occupation-wise and more appreciative of their expertise, although objective markers of transition are the same for both internship and non-internship graduates

7.2 CHAT-based approach to extant surveys

In the methodological and sociological literature surveys are commonly described as a form of methodology or research ‘strategy of plan of action’ that involves several typical techniques (i.e. methods) such as sampling, measurement, questionnaire, and statistical analysis (Crotty 1998:5). A more technical definition of survey methodology given by the *Cambridge Sociological Dictionary* is as follows:

Systematic gathering of information on a defined social group [...] [which is] based on specific samples from a defined population, and employs structured written questions, often administered verbally via either a telephone-based or a face-to-face interview, designed to yield a corpus of data amenable to statistical analysis (Rapley and Hansen 2006:615-616).

Furthermore as a type of research nomothetic methodology (see Chapter 6 and Section 6.1), surveys are informed by a particular orientation towards the social world, that is one that focuses on the behaviour of individuals, numbers and an artificial research setting (Hammersly 1995).

In the context of the CHAT-based mixed-method principles I developed in the previous chapter (Table 6.8 and Figure 6.8 and Figure 6.9), surveys as nomothetic methodologies are a type of research tool developed by researchers to solve problems and to achieve practical goals. They are also tools that produce a particular type of evidence – quantitative evidence for the research claims.

In this section I will deepen the discussion of surveys as artefacts or mediational research tools in order to develop a set of more specific principles for the secondary analysis of the REFLEX data set on graduate skills.

7.2.1 Surveys as artefacts imbued with representations of professional communities

In this section I draw upon the different conceptualisations of context in Chapter 5 (context as the practice of a community of practitioners, an activity system and an underpinning normative framework) and on the idea of research methodologies as mediating artefacts (as discussed in Chapter 6) in order to argue that the key feature of surveys is that they are mediating artefacts imbued with the representations of the world of the professional communities they belong to.

Surveys are mediating artefacts produced by research communities and their associated practices. For the purposes of this chapter these communities are the professional communities of researchers, the artefacts are surveys and the intelligence of the artefacts associated with research practice are the symbolic representations of the world of research communities (e.g. representations of research subjects, research problems, preferred techniques, core values, and norms).

As explained in Chapter 5 the production of artefacts is one of the foundational features of human activity. It is linked with the distinctly human ability to design, produce and improve tools for specific ends (Tomasello 1999). In creating tools humans take aspects of the material world, transform them and imbue them with meaning and purpose (Ilyenkov 1977). Since the production and refinement of tools is a collective endeavour that takes place in a social context the production of specific artefacts, especially in contemporary societies, is associated with the specialist practices of professional communities. Moreover, since artefacts are made for a particular purpose by the communities, the meaning imbued in the artefacts is sustained by the activity of the community that uses the artefacts to act on the world (Tomasello 1999, Tomasello 2014). In this sense cultural artefacts are said to carry and display ‘intelligence’ associated with certain cultural groups (Pea 1993 in Daniels 2001:17).³⁰ Moreover, although artefacts are influenced and shaped by the community, they also exert an influence on the community by mediating how community members see the world (Vygotsky 1978, Tomasello 1999) or, to put it differently, they make certain kinds of thinking about objects possible (Tomasello 2014).

In Table 7.1 I represent two critical aspects of artefacts: their symbolic and material aspects. The symbolic aspect of artefacts refers to the ideas and representations of the world the artefacts are imbued with (i.e. their intelligence and their ability to make certain kinds of thinking possible). The material aspect of artefacts refers to the physical characteristic of artefacts. The symbolic and the material aspects of artefacts are in a dialectical relation to one another (see Chapter 6), which means that these two aspects, although opposing, are

³⁰ ‘[invented tools] turned from history into nature, they are invisible, unremarkable aspects of our experiential world [...] these tools literally carry intelligence in them, in that they represent some individual’s or some community’s decision that the means thus offered should be reified, made stable, as a quasi-permanent form, for the use by others [...] as such tools become invisible, it becomes harder to see them as bearing intelligence; instead we see intelligence as residing in the individual mind using the tools’ (Pea 1993: 53).

profoundly connected (this is indicated in the table with the two directional arrows ← and →). Table 7.1 shows how these two facets of surveys are exemplified in the REFLEX survey.

Table 7.1 The two moments in the dialectic nature of artefacts

Symbolic ↔ material	
Ideas, assumptions, logic, intelligence and representations of the communities and their practices that artefacts are imbued with	Concrete, material outcomes and models, properties and design of artefacts

Surveys can be seen as complex conceptual devices that construct the world in a way that is specific to their communities, in addition to having material aspects (e.g. questionnaires, datasets), and that collect data about the world. Furthermore, the notion of surveys as devices that represent the world rather than solely collecting data about the world could be exemplified in two ways.

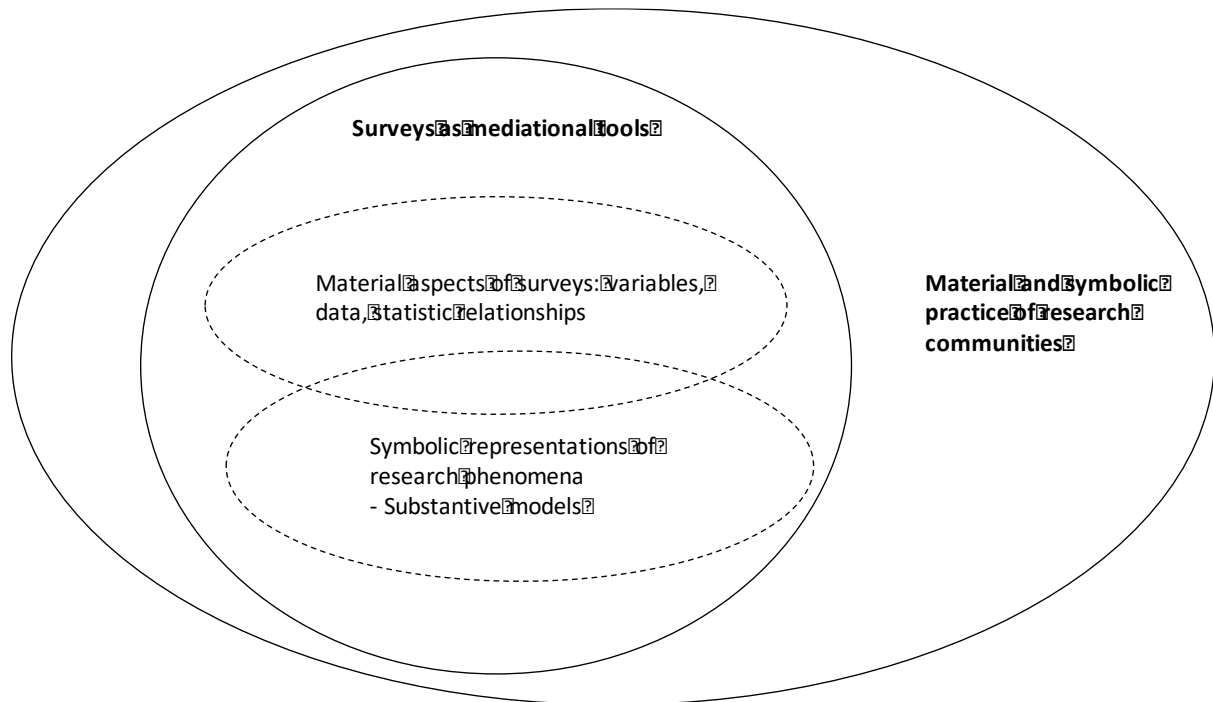
First, the symbolic dimension of surveys can be conceptualised in terms of the general epistemic assumptions of survey methodology about the world. An example of the former view of representation is the 'hardware' of survey methodology. For instance, the assumption that surveys are describing and ordering the social world through a matrix or a 'rectangular set of data' in which the information is organised in terms of variables (or characteristics and properties) and cases that exhibit those characteristics (individuals, countries, products) (De Vaus 1996). Moreover, survey research operates within a logic in which the attributes of social phenomena that are researched are stated prior to data collection:

In survey research a specific effect must be named beforehand and measurements are made to see if, or to what extent, it is present. There is then a concern with measuring presence or extent of what has already been identified as existing. (Williams 2003:10

Second, the symbolic dimension of surveys can be conceptualised in terms of specific assumptions that particular surveys have about the research phenomena under investigation.

For instance, as I will show, the skill surveys rest on a particular learning model that is closely related to the metaphor of acquisition.

Figure 7.1 The substantive/ representational and material aspects of surveys



The symbolic dimension of surveys in the second sense is particularly relevant to the CHAT-based approach to surveys. The symbolic representations of the research problem that are embedded in surveys affect the research process by influencing which variables will be selected by the researchers as relevant and, thus, what type of data will be made available (see Figure 7.1). Some researchers have similarly discussed this representational aspect of survey methodology in terms of ‘qualitative’ (symbolic representations of phenomena) and ‘quantitative’ (materialisation of these representations as variables and data). In particular, Mislevy (see Ercikan *et al.* 2010:282), a social statistician and educational researcher sympathetic to the research programme of CHAT, argued:

[T]here is no quantitative analysis without a qualitative frame. All the quantitative models that we talk about are overlaid over some substantive model that concerns the concepts, the relationships, and the events that they are supposed to be about. They are tools to help us understand patterns in these terms.

What Mislevy (Ercikan *et al.* 2010) refers to as a 'qualitative frame' or 'substantive model' could be subsumed under what I have called the representations of a particular research community about the research phenomena and research problem (section 7.2.1). These representations typically involve the concepts and relationships between variables that guide their analysis and serve as an explanatory framework for data analysis. In relation to my research problem and research focus the most important representations of the skills surveys are the representations of graduate learning. From now on I will refer to these as the learning models.

So far I have established that surveys are tools of professional communities that are imbued with the assumptions of those communities and thus construct the world congruously with the worldview of the communities. One aspect of the representations imbued in surveys is the representation of the research phenomena. In the case of graduate transition surveys these are the learning models. The implications of these assumptions for my secondary analysis of skills surveys are discussed in the following section.

7.2.2 Secondary analysis and the re-purposing of extant surveys for a new research project

Secondary data analysis is commonly understood as the analysis of extant data resources collected by other researchers. The biggest difference between secondary and primary research is that whereas primary research collects new data secondary research constructs new and evaluates old measures from the available data (McCall and Appelbaum 1991). The main tools at the disposal of researchers focused upon secondary research are 'the dataset and

codebooks' (Donellan and Lucas 2013). This technical approach to secondary data analysis is aligned with the technical aspects of the CHAT-based secondary analysis that I have been developing. However, in addition to this technical layer, the perspective I have been developing also entails the epistemic assumptions of the *re-purposing* of data (see Table 7.2). For instance, the epistemic assumptions follow the logic of the principle of recontextualisation as 'the creative use of existing cultural tools to refashion activity' (Guile 2010:171), because secondary analysis entails understanding the purpose and the normative context in which the survey was conducted in the first place and then re-purposing it for the new research setting. Thus, the epistemic assumptions of CHAT-based secondary analysis entail:

- Revealing the normative assumptions embedded in the existing datasets, such as the representations of the research phenomena (e.g. policy-driven surveys with skills/competence representations of learning);
- Using these insights as a way to introduce a new conceptual model and re-purpose the data for the new research activity (e.g. using horizontal expertise to explore datasets); and
- Revealing new trends and relationships in an existing dataset and drawing implications for the conceptual model which guided the analysis.

On the basis of the three principles set out above, in the next section I will approach my secondary data analysis as follows. First, I will analyse the context in which the surveys emerged, such as the goals and interests that influenced their design. Second, I will analyse the skills and graduate transition surveys and evidence the learning assumptions taken on by the communities which created the surveys. Third, I will re-purpose the data with respect to

the research goals and claims of the quantitative research aspect of horizontal expertise. I will do this by overlaying a new set of assumptions about learning (e.g. CHAT) and the learning of graduates (the horizontal expertise framework) onto the dataset. This will involve the steps that the classical methods of secondary data analysis suggest – the evaluation of old and the construction of new data. In the next section I will follow these steps to analyse the REFLEX data set.

Table 7.2 The main principles and actions for the secondary analysis of skills surveys

Principles	Actions	REFLEX
Revealing the normative assumptions of the existing datasets - representations of the research phenomena	- Analysis of the context in which the surveys emerged (the goals and interests that underpin them) - Analysis of the representation of the research phenomena (i.e. the learning models)	Goals & interests related to informing international policy; providing comparable data and portraying the ‘skills’ landscape in different countries - Generic skills model
Explicitly introducing new normative assumptions and representations of the research phenomena (e.g. using horizontal expertise to explore the datasets)	Overlay a new set of assumptions about the research phenomena onto the dataset, examine old data and construct new measures and indicators	There is no continuity between skills assessment and work practice ‘readiness to learn’ is not solely a generic quality that results from educational and family background but is also the result of work practice
Revealing new trends and relationships in an existing data set and drawing inferential relationships	Reveal the statistical relationships between the new indicators and draw inferences for the new representational models that underpinned them	Demonstrated statistical evidence that the skills assessments of literacy and numeracy for graduates with up to five years of work experience are not associated with the length of their total work experience nor the frequency with which they use the assessed skill on their current job

7.3. REFLEX data set – cultural artefacts re-purposed for the analysis of horizontal expertise

In this section I will draw on the first principles for the re-purposing of data and outline the context in which the RELFEX survey emerged and the goals and interests that influenced

their creation. I will show that what the purpose of the survey is to inform education policy at national and international levels (e.g. by being endorsed and funded by the European Commission).³¹ Moreover, the community of researchers that worked on REFLEX draw on the conventional wisdom of the knowledge economy and use the skills and competence models as the underpinning for learning models.

Table 7.3 REFLEX as symbolic and material artefact of policy communities

Symbolic ↔ material	
Policy purpose Statistical and econometric concepts Competence learning model	Policy reports Data sets Technical reports

7.3.1 REFLEX survey: Communities, models of learning and re-purposing for horizontal expertise

The REFLEX project stands for ‘Research into employment and professional flexibility’.³²

The REFLEX survey was administered in 2005 to university alumni who had graduated five years earlier.

The Context of REFLEX

Based on the discussion in Chapter 2, where I described the current landscape of graduate transition to work research, there are several important aspects of the background through which the REFLEX survey emerged. First, as a survey of graduate transition and graduate competences, the REFLEX survey draws on the new policy consensus of the knowledge-based economy and the high-skill route to wealth creation in which highly skilled graduates play a fundamental role. For instance, the REFLEX survey, it was argued, rests on the assumption that,

³¹ For REFLEX see Brennan (2008). For the work of OECD see Grek (2009, 2010).

³² Also known as “The Flexible Professional in the Knowledge Society”.

In fact, within modern economies there is an expectation that highly qualified workers will both have specialised knowledge and skills to undertake specific professional roles and will be sufficiently flexible to adapt to new challenges in work situations not necessarily related to their field of study. (Brennan and Little 2010:6)

Second, within this new policy consensus there has been increasing interest from policy-makers and intermediary organisations in comparative education research. In the context of the EU, this is also evident in the imperative to bring the European education systems together through concerted efforts towards their convergence (European Commission 2001; Ertl 2006). The interest in comparative educational research resulted in the expansion of large-scale quantitative research in education and graduate transition to work in the late 1980s and early 1990s (Raffe 2014) when quantitative research into transition to work became a predominant form of transition research (see Cohen and Ainly 2000; Bynner 2001; Furlong, Woodman and Wyn 2011). One of the reasons for this is that quantitative large-scale research worked well with the emerging ‘New Paradigm’ in comparative research, which uses surveys and statistical indicators to provide evidence to policy-makers of ‘what works’ (Auld and Morris 2014, Raffe 2014). In this context REFLEX, as a collaborative project between eleven European countries and funded by the European Commission, is not an exception (Brennan 2008).

The Communities

The increasing interest in comparative educational research from policy-makers and intermediary agencies contributed to the expansion of complex expert networks for comparative research projects. The survey communities now represent networks of researchers, from ‘consortia’ of universities and government agencies to international organisations and private research consultancies. The emergence of these complex expert networks blurred the classic division of ‘five sectors’ of survey research (i.e. academic,

private research firms, government, media polls and market research) (Wright and Marsden 2010; Auld and Morris 2014).

When it comes to the professional communities that created temporary collaborative teams in REFLEX, the prominent actors involve national policy agencies, university rectors and research centres. For instance, in the UK the Higher Education Funding Council for England (HEFCE) contracted a research centre at the Open University to lead the research for England, although the coordination of the consortium of universities is led by Maastricht University (Arthur and Little 2010). Moreover, there is a clear orientation of the survey towards policy goals such as to determine ‘how graduates in different European countries were prepared for the labour market’ (Little 2011:233).

Moreover, the REFLEX project is not a standalone project but belongs to a family of research projects on comparative ‘tracer’ (i.e. post-graduation) surveys on transition of graduates to work. For instance, REFLEX was a successor to the Higher Education and Graduate Employment in Europe (CHEERS) study, which resulted from a series of discussions and decisions by European education ministers and rectors (Brennan *et al.* 2001; Schomburg and Teichler 2011; Teichler 2009) to develop a joint tracer survey of European graduates. The REFLEX project was also followed by HEGESCO, which used a similar questionnaire (the UK did not participate in HEGESCO). Finally, the use of policy-based vocabulary to describe graduate transition, such as ‘competences’ and the method to derive the list of competences, such as the ‘trends driven approach’ (see Chapter 3), further suggest that the overarching purpose of the REFLEX survey was to inform policy and contribute to the knowledge-based economy discourse.

The learning models

As suggested above, the REFLEX survey incorporated the policy-derived vocabulary or policymakers' definition of terms such as 'competences' and the method to derive the list of competences, such as the 'trends driven approach'. Representations of learning and expertise that underpin the REFLEX survey could be described in terms of the 'generic skills' that I described in Chapter 3. What makes the learning assumptions of REFLEX similar to the generic skills model is the trend-driven model of deriving a list of competences and then treating the derived list of competences as context-free, stand-alone entities relevant to all graduates (see Tables 7.4 and 7.5). For instance, before administering the REFLEX survey researchers identified a number of key macro-economic and social trends (e.g. volatility of labour markets, internationalisation and globalisation). Then, they derived a list of competences believed to be able to help graduates respond to macro-level challenges. Thus, desirable competences were identified, including 'professional expertise', 'functional flexibility', 'innovation and knowledge management', 'mobilisation of human resources' and 'international orientation'. These become a part of the survey and the graduates were asked to self-evaluate the extent to which these competences apply to them.

Table 7.4 Key competences in REFLEX survey

Mastery of your own field or discipline Knowledge of other fields or disciplines Ability to rapidly acquire knowledge Alertness to new opportunities Ability to come up with new ideas and solutions Ability to write and speak in a foreign language
--

Table 7.5 The logic of the ‘trends driven’ approach to competence analysis in REFLEX

Steps in the trend driven competence approach	Identified socio-economic challenges associated with the knowledge economy	A list of competences derived from these challenges	Survey items which relate to expertise
First example from REFLEX	The challenge of increasing the economic growth of countries through more educated, trained and skilled workforce	The need for high level expertise in various professional and disciplinary domains	‘How do you rate your own level of competence and the requirements of the job on: - Mastery of your own field or discipline - Knowledge of other fields or disciplines?’
Second example from REFLEX	The challenge of internationalisation and globalisation of labour markets	A workforce that is ‘internationally orientated’ by, for instance, speaking a foreign language or possessing intercultural competence	‘How do you rate your own level of competence on ability to write and speak in a foreign language?’

REFLEX dataset: Transition to work in the first job and horizontal expertise

In this section I will draw on the REFLEX dataset by bringing in the horizontal expertise framework, as developed in Chapter 4. First, I will outline the strategy of my analysis, such as developing proxies for horizontal expertise, selecting the variables of interest in REFLEX and showing how they make sense in relation to the horizontal expertise framework.

Research strategy

The first key point to be established for the re-purposing of the REFLEX data in order to research horizontal expertise is which indicators in REFLEX could be proxies of horizontal

expertise. In line with what I said previously about internships i.e. they are increasingly becoming more common forms of transition to work among students and graduates (Chapter 2), and in line with my qualitative study in the following chapter that takes internship as a proxy, I decided to proxy horizontal internship in the same way, with the internship experience. Thus, my foundational assumption is that internships enable graduates in the REFLEX survey to develop emerging forms of horizontal expertise. My second assumption will be, as I will show below, that, because graduates developed horizontal skills through internships their REFLEX survey responses about their experience of transition to their first job were different to those of graduates who had no internship prior to graduation.

Research question: What are the differences between the internship and the non-internship group in the REFLEX data regarding the experience of their first job?

Table 7.6 REFLEX indicators and horizontal expertise in an internship

REFLEX indicators	Horizontal Expertise (via internship)
1. Time spent looking for a first job and the first salary	Internship graduates are more likely to gain their first job faster, because they have developed a better understanding of what they wanted to do and how the employers think (e.g. what they value in a graduate candidate) and have a higher salary as an indicator of a 'better' graduate job
2. Job seeking strategies	The internship graduates are more likely to use proactive strategies (e.g. 'approaching the employer directly', 'through previous work experience', 'through family, friends, acquaintances') in searching for employment because they learned to recognise the specific strategies that employers prefer or endorse in addition to the traditional strategies.
3. Internship and the skills and knowledge demands of their first job	The internship group may still perceive their first job as demanding despite having prior experience of work, because they have developed an insight that every workplace is different and that they need to first learn to work in a new context and understand the norms and values of the particular work practice before applying their prior learning
4. Internship and the utilisation of graduates' skill and knowledge in their first job	The internship group is more likely to feel like their knowledge and skill are well-utilised because they have learned the importance of appropriating their skills and knowledge to the context of the firm and adjusted their expectations in terms of the ways in which they can contribute and be useful to the firm (e.g. they do not expect their tasks to match their competences, but that there are different ways in which they can contribute to the task). This will of course be mediated by the learning opportunities in the firm.
5. Internship and the feeling of 'overeducation' in the first job	Internship graduates are less likely to feel overeducated because they can distinguish between higher education and workplace knowledge and skills as being qualitatively different
6. The perception of relation between the field of study and the first job	Internship graduates are more likely to subjectively feel that their degree and the first job were related because they have developed the ability to draw on prior learning and knowledge and use them in a new context, thus being able to see the links between different domains

The REFLEX dataset enabled me to select the sub-group of graduates who had an internship before graduation that was not part of their degree by combining two variables: the variable that described whether there was a work experience component of their degree and a variable that contained information as to whether they carried out degree-related work experience during their studies. I chose my internship group by selecting those cases that answered negatively to the first and positively to the second criteria. I called this group the 'internship group', which is different from the 'degree-only group' of graduates who completed their

degree with no work experience. As I will show below I compared the two groups on a series of variables that relate to their *transition to their first job*³³ and drew inferences about the results in the context of the horizontal expertise framework. Thus, the more specific *research question* that guided the analysis was ‘*What are the differences between the internship and the non-internship group in the REFLEX data regarding the experience of their first job?*’

Horizontal expertise and variables

As I indicated before, the horizontal expertise framework suggests that the internship group had an advantage in transitioning to their first employment, because they were already in the process of developing what I referred to as ‘horizontal expertise’ through finding, applying for and working in an internship. In particular, I will explore whether the internship group had an advantage when looking for their first job (e.g. spent less time looking for the job or employed different strategies to gain employment), and whether the first job of the internship group was better suited (e.g. they felt they were not ‘overeducated’, their skills were well utilised and the job was related to what they studied). In particular, I will look at the differences between the two groups with respect to the six variables presented in Table 7.6.

Statistical analysis

In the following section I will explore the differences between the internship and the degree-only group on the variables that I identified in Table 7.6, using descriptive statistics and statistical analyses (e.g. Mann-Whitney U test, t-test, binary regression). The details of the analyses are listed in the statistical appendix (Appendix B).

³³ The REFLEX questionnaire has four distinct parts: (i) biographical information and information on education (e.g. degree information, retrospective assessment of the degree) and related experience (e.g. family, voluntary work, hobbies and jobs), (ii) employment questions (e.g. job search, employment history), (iii) self-assessment of competences at the time of the questionnaire, and (iv) questions about the values and orientations of participants.

In Table 7.7 I described the two groups of participants. The main difference between the two groups was the three months of work experience that the internship group completed during their BA or MA degree before graduation. On other variables the two groups were very similar (see Tables B.3, B.4 and Figure B.2 and B.3 in the appendix). There was a difference in the proportion of students from specific disciplines which is why where appropriate I controlled for the field of the degree.

Table 7.7 The differences between degree-only and internship group in REFLEX

Characteristics	Degree-only group	Internship group
Length of time spent in the internship during the degree	0	3 months (median and mode)
Number of participants	N=609	N=119
Age	27 (Median)	27 (Median)
Gender	38.4% male (N=233)	36.4% males (N=43)
	61.6% females (N=374)	63.6% females (N=75)
Father's level of education	Some further or higher education level (Median)	Some further or higher education level (Median)

Internship, the time spent looking for the first job and the first salary

The variable 'time spent looking for a first job' was taken to be an indicator of the 'smoothness' of the transition of the two groups. In the REFLEX dataset this variable described the number of months that the survey respondents reported taking to look for their first job *before* and *after* graduation. As Table 7.8 shows the internship group spent on average more time searching for work *before* graduation than the degree-only group and they also reported spending less time searching for work *after* graduation than the degree-only group (2.25 months as opposed to 2.31).

Table 7.8 Length of job search and first salary

	Interns or degree-only	N	Mean	Std. Deviation	Std. Error Mean
Searching for work before graduation (months)	Degree-only	453	2.31	3.314	0.156
	Internship	90	2.25	3.393	0.358
Searching for work after graduation (months)	Degree-only	459	1.35	2.45	0.11
	Internship	93	1.7	2.73	0.28
Gross monthly earnings on the first job (euro) (N=486)	Degree-only	453	1674.52	2010	29.41
	Internship	91	638.39	722.14	74.14

Since the distribution of scores for ‘months looking for the first job before graduation’ and ‘months looking for the first job after graduation’ was not normally distributed, as assessed by Shapiro-Wilk’s test ($p < 0.001$), I employed a non-parametric Mann-Whitney U test which is suggested in the literature as being less sensitive to the absence of normal distribution of data (Daniel 1990). It showed that there were no statistically significant differences in the amount of time spent searching for the first job **before** graduation ($p = 0.163$, $z = -1.280$, $U = 20949.500$) and **after** graduation between the internship (Mean Rank = 275.86) and degree-only (Mean Rank = 289.69) groups ($p = 0.453$; $z = -0.751$, $U = 20917$).

Moreover, to examine whether there were differences in the first salary between the groups I removed the extreme values from the data (see statistical appendix B), I checked for normality of distribution assumptions using the Shapiro-Wilk test ($p < .05$) which showed that the data was not normally distributed but had a positive skewness for both groups. However, the data for both groups was symmetric (a requirement for the Mann-Whitney U rank test) and I ran a non-parametric Mann-Whitney U rank test to compare the salaries of the internship and degree-only groups (see appendix B for more details). The test showed there were no statistically significant differences between the degree-only (Mean

Rank=291.03) and internship groups (Mean rank=302.77) when it comes to first salary ($U=22906$, $z=-0.627$, $p=0.531$). In the literature there are differing and inconclusive accounts about the impact of internships on graduate salaries, with some findings showing that previous interns experience salary penalty upon graduation (Holford 2017) whereas research in Germany showed favourable effects on interns' graduate salaries, especially for graduates in humanities and social sciences (Saniter and Siedler 2014).

Job-seeking strategies in the internship and degree-only groups

The REFLEX dataset researched strategies that students employed when seeking their first job (see Table 7.9) In the REFLEX dataset the 'job-seeking strategy' variable depicted eleven job-seeking strategies the graduates utilised to secure their first job. I grouped the eleven job-seeking strategies into two categories based on the agency and initiative in relation to employers that the strategy required. The two groups were 'traditional' and 'proactive' strategies (Table 7.9). The proactive strategy included actions such as 'approaching the employer directly', 'through previous work', 'through family, friends, acquaintances' and 'contacted employer on own initiative'. I was interested to see whether the internship group was more likely to use the proactive and work-based means of gaining employment.

Table 7.9 Two strategies for finding work upon graduation

Ways of finding work	Degree-only (%)	Internship (%)
Traditional Job search strategies (N=208)		
Through advertisement in newspaper	23.50	18.40
Through public employment agency	6.80	0.90
Through private employment agency	13.80	7.90
Through internet	6.60	7.90
Through help of higher education institution	4.90	5.30
Proactive search strategies (N=63)		
Approached by employer	3.00	7.00
Through work placement during higher education	2.10	7.00
Contacted employer on own initiative	17.40	19.30
Through family, friends or acquaintances	13.80	21.90
Set up my own business	0.90	0.90
Through previous work	0.70	0.00

$\chi^2 = 15.035$, $df = 1$, $p < .001$

Using the chi-square test I compared the frequencies for both categorical variables ('degree/internship' and 'traditional/proactive'). There was a statistically significant association between the type of job seeking strategy (i.e. traditional or proactive) upon graduation based on whether graduates had completed an internship or not with $\chi^2 (1) = 15.035$, $p = .000$. For instance, in Table 7.9 I have shown that over half of the internship graduates in the sample were likely to use proactive strategies as opposed to only a third of the degree-only graduates. However, although the relationship was significant, the strength of association is weak due to low Phi (0.144).³⁴

³⁴ Phi varies between 0 and 1. Close to 0 it shows little association between variables. Close to 1 it indicates a strong association. From http://changingminds.org/explanations/research/analysis/cramers_v.htm.

The relationship between field of study and the first job

The variable that corresponded to the question ‘Was the field of study appropriate for their first work?’ indicated how graduates in the sample perceived the relevance of their degree domain to their first job (see Table 7.10). In the labour economics literature when the domain of degree and the domain of the job differ this is known as ‘horizontal skill mismatch’ (e.g. International Labour Organization 2014). The descriptive statistics showed that the internship group tended to agree more with the statement that their own or related field of education was appropriate for the first job (69.70 percent of the internship group, N= 83) than the degree-only group (36.9 percent, N= 225). In other words, the internship group reported less horizontal skill mismatch than the degree-only group with respect to their first job. However, further exploration of this pattern is needed to take into account the respondents’ actual degree domain, as some degree domains and industries require a closer match (e.g. engineering, economics). Thus, in order to see whether there are statistically significant differences between the internship and degree-only groups in terms of how they perceived the relationship while controlling for the domain of the degree I used the domain of degree as a dummy control variable (seven dummies for seven degree domains). This is evident in Table 7.10.

A binomial logistic regression was performed to ascertain the effects of being part of the degree-only or internship group on the perception of the link between the domain of education and the domain of first job. The logistic regression model was statistically significant, $\chi^2(9) = 81.320$, $p < .001$. The proportion of explained variation in the response (i.e.

the perception of education/work domain match) was 14.0% (Nagelkerke R^2) and the model correctly classified 65.5% of cases.³⁵

In terms of the variables in the equation (see Table 7.10), having done an internship added significantly to the model prediction (** $p < 0.001$) but the degree domain did not add significantly to the model. Having done an internship increased the odds of saying that the degree domain and the first job domain are related by almost four times, when all other independent variables such as the domain of the degree are held constant. In other words, doing an internship decreases the odds by four times of reporting a horizontal skills mismatch in the first job upon graduation. An important insight from this analysis is that having done an internship, regardless of the domain of the degree, makes graduates more likely to see their degree and their first job as related.

³⁵ Sensitivity was 56.2%, specificity was 72.1%, positive predictive value was 59 % and negative predictive value was 69%.

Table 7.10 Logistic regression predicting the likelihood of internship group to say the degree and the first job were closely related

	B	S.E.	Odds Ratio
Constant	-0.322	1.042	0.413
Interns or degree-only	1.364**	0.225	3.911
Degree domains			
Education	-20.881	2840.722	0.000
Social Sciences, Business and Law	-0.334	1.948	0.716
Science, Mathematics, Computing	0.332	1.053	1.394
Engineering, Manufacturing and Construction	0.694	1.102	2.001
Agriculture and Veterinary	-1.576	1.593	0.207
Health and Welfare	1.057	1.200	2.879
Services	-0.885	1.190	0.413
General Programme (reference category)	0		
Nagelkerke Pseudo r ²	14.2%		
χ^2	81.320, df=9, p<0.001		

Note: Degree-only group is a reference group; **p<0.001

First job and perception of overeducation

In the REFLEX dataset there is an indicator labelled ‘overeducation for the first job’ which reflects how the participants saw their education-based expertise in relation to the expertise required on their first job. In the labour economics literature when the domain of degree and the domain of the job differ, this is known as ‘vertical skill mismatch’ (e.g. International Labour Organization 2014). The ‘overeducation for the first job’ indicator is a derived variable in REFLEX and was generated using the following two variables (see Table 7.11):

- The length of the respondent’s higher education programme in years (e.g. 3 years, 4 years)

- The number of years of higher education the respondent estimated was needed for their first job

The latter (years needed for first job) was subtracted from the former (number of years of respondent’s higher education degree). Thus, the values of the ‘overeducation for the first job variable’ include zero, or no overeducation (i.e. there is a match between the level of education and the level required on the job), one year of overeducation (i.e. the job required one year less of higher education than the candidate had) and so on (the first column in Table 7.11). The descriptive statistics in Table 7.11 showed that on average the internship group perceived themselves as less overeducated (M=0.85, SD=1.338) than the degree-only group (M=1.41, SD=1.486).

Moreover, the breakdown of the frequencies for overeducation for both groups shows that the internship group was more likely to claim they were not overeducated (67.3 percent relative to 50 percent).

Table 7.11 Perceived overeducation of interns and degree-only students

Overeducation on 1 st job	Degree-only (%)	Internship (%)	Total (row)
Not overeducated	50.50 (N=287)	67.30 (N=76)	53.30 (N=363)
1 year overeducated	4 (N=23)	9 (N=8)	4.70 (N=32)
3 years overeducated	44 (N=252)	22.10 (N=25)	40.70 (N=277)
4 years overeducated	1.10 (N=6)	2.70 (N=3)	1.30 (N=19)
Total (column)	100 (N=568)	100 (N=113)	100 (N=681)

In order to compare the differences between the internship and the degree-only group on an interval variable (i.e. number of years of overeducation) and establish whether the differences between the two groups are statistically significant I ran an independent samples t-test (Table

7.12). The test showed that there was a significant difference in the scores between the two groups; $t(679)=3.745, p=0.01$).

Table 7.12 Years of overeducation for the first job

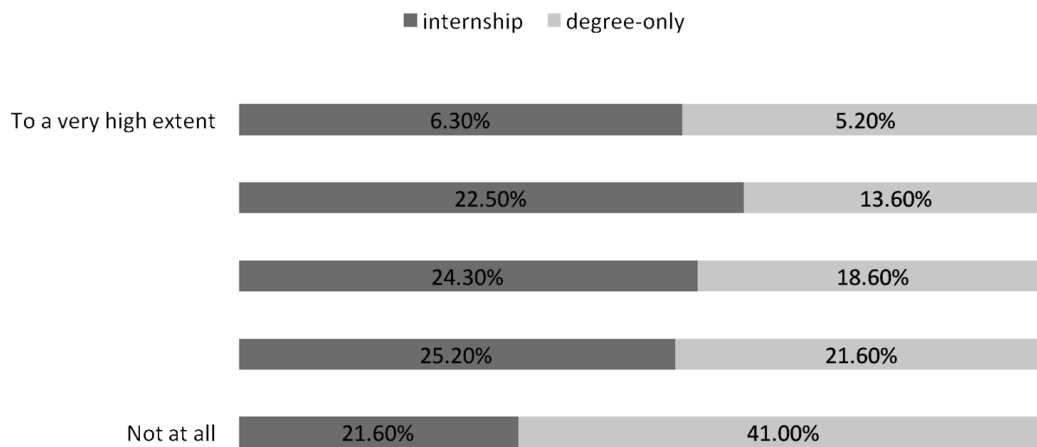
Interns or degree-only student	N	Mean (years)	Std. Deviation	Std. Error Mean
Degree-only	568	1.41	1.486	0.062
Internship	113	0.85	1.338	0.126

This suggests that, on average, the degree-only group was more likely to perceive themselves as overeducated for their first job.

First job and graduate skills and knowledge

In order to investigate how the survey participants saw their first job in relation to their prior skills and learning I used a variable which measured the extent to which graduates thought they were underskilled for their first job. It corresponded to the question ‘Did your first job demand more knowledge and skills than you could offer?’ The variables were coded on a five level Likert scale from ‘not at all’ to ‘to a very high extent’. First, I explored the differences between the ratings on this variable between my two groups descriptively. As presented in the chart, the internship group was more likely to highly agree that their first job was demanding (28.80 percent, as opposed to 18.80 percent in the degree group).

Figure 7.2 First job skill demand “Extent to which first job demanded more knowledge and skill than you could offer”



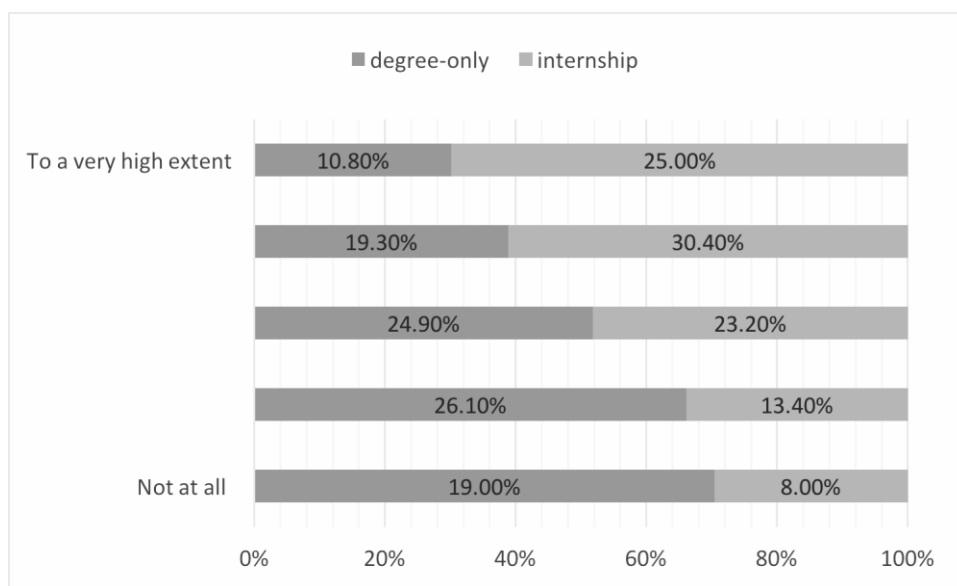
I further explored these descriptive differences by examining whether they are statistically significant. Since the dependent variable (i.e. ‘the extent to which job demanded more knowledge and skill than you could offer’) is on a Likert scale and, thus, on the ordinal level, I used the Mann-Whitney U rank non-parametric test. Distributions of the scores for the degree-only and internship groups were not similar, as assessed by visual inspection. The scores for the internship group (median= 3; mean rank =406.55) were statistically significantly higher than for the degree-only group (median= 3; mean rank= 331.33), $U = 24914.500$, $z = -3.809$, $p = .001$. Thus, the internship group was more likely to say that their job was demanding more skills than they could offer than the degree-only group. In other words, the internship group was more likely to describe themselves as underskilled for the first job.

The extent to which graduates’ skills and knowledge were well utilised in the job

In order to investigate further how the survey participants saw their first job in relation to their prior skills and learning I used a variable in the dataset which contained information on

the extent to which graduates' skills and knowledge were utilised on the job. Descriptive statistics showed that there are differences between the internship and the degree group and that the internship group tended to rate more highly the extent to which their expertise was used in their first job. Since the dependent variable is on the ordinal scale and the independent variable is categorical (i.e. internship/degree),

Figure 7.3 Skills utilisation on the first job “Extent to which your first job utilised your knowledge and skill”



A Mann-Whitney U test was run to determine if there were differences in scores between the degree-only and internship groups. Distributions of the ‘skill utilisation’ scores for degree-only and internship participants were similar, as assessed by visual inspection. Median ‘skill utilisation’ score for degree-only (median=3) and internship (median=4) groups was statistically significantly different, $U = 21769$, $z = -5.556$, $p = .000$, using an exact sampling distribution for U (Dineen and Blakesley 1973).

In the chart below, the statistically significant differences in median values of the degree-only and internship groups’ ratings of their first job are presented. The higher ratings mean that the first job utilised the skills to a higher extent. The internship group was more likely to say that

their knowledge and skills were highly utilised on their first job and that the first job was highly demanding skills-wise.

Concluding remarks for REFLEX analysis

In this section I completed a secondary analysis of the REFLEX survey, showing that using the logic of the graduate horizontal expertise framework it is possible to detect some new patterns in the data, such as differences between the internship and degree-only groups in how they searched for and perceived their first job. In Table 7.13 below I highlight some of the key differences. Namely, in the table I show that the internship group was more likely to use, what I called, proactive strategies when seeking first employment, more likely to say there is a relationship between their field of study and the domain of first job, more likely to see their first job as demanding in terms of skills and knowledge but also their skills and knowledge better utilised at work and more likely to say they were less-overeducated for the first job.

Table 7.13 Differences between internship and degree-only graduates in REFLEX

Attributes	Internship group	Degree-only group	Statistical tests
More likely to gain their first employment by employing more proactive strategies for employment (e.g. approaching employer directly, using their networks)	52.9 percent (N=63)	34.2 percent (N=208)	X ² (1) = 15.035 p = .000
More likely to say there is a relationship between their field of study and the domain of first job	Internship group 4x more likely to say their studies and first job are related		X ² (4) = 64.055 p = .001 The model explained 12.0% (nagelkerke R ²)
More likely to see their first job as demanding in terms of skills and knowledge	Mean rank=406.55	Mean rank=331.33	U = 24914.500 z = -3.809 p =.001
More likely to think their knowledge and skills were well utilised in their first job	Median value =4	Median = 3	U = 21769 z = -5.556 p = .000
Perceived years of overeducation in relation to first job	M=0.8 (years) SD=1.338	M=1.41 (years) SD=1.486	T (679)=3.745 p<0.01

The analysis suggests that there are important differences in the way that the internship group experienced the first job upon graduation. These differences between the internship and degree-only groups, I argue below, cannot adequately be addressed by the skills discourse and are better explained through the horizontal expertise framework.

The skills discourse would approach the differences between the internship and degree-only groups (Table 7.13) by arguing that the internship group developed sets of competences and skills during their internship and higher education that led them to secure a job that was a better ‘match’ for their education and skill level. However, the ‘matching principle’ of the

skills and competence discourse could not explain (i) why the internship group felt that their level of education was right for the job, while at the same time saying that they needed to develop new skills and capacities for work, and (ii) why the degree-only group felt overeducated and that their skills were underutilised at work. One possible answer from the skills discourse perspective could be that the internship group developed skills and networks to secure more demanding jobs appropriate for their level of education. However, the data shows that there were no differences in the hard indicators of transition such as time looking for work or salary, which indicates that the degree-only individuals did not struggle finding a job or have lower earnings.

My argument is that the emergence of ‘horizontal expertise’ could explain the differences in experiences of the first job between internship and degree-only groups. The internship group had the advantage of developing horizontal expertise capability through a ‘two-fold’ movement - from higher education to work and back to higher education, before transitioning to full-time employment. This movement enabled the internship students to develop an understanding that higher education and work are differently organised practices and that what is necessary to navigate them is to learn how to use skills developed at university in occupationally specific ways. This is ultimately what enabled them to (i) use more proactive strategies to find work, (ii) find work they felt they were educated (and skilled) for, and (iii) find work in organisations which found their skill contribution useful. Furthermore, the development of horizontal skills enabled them to re-purpose their degree-based skills and knowledge for the new organisation (and the new type of work activity), which is why the internship graduates were more likely to see their first job as demanding new types of skills which they could not have developed at university.

In contrast, the degree-only participants were making their first movement into work with their first job. The challenge for them was different from the internship group, because they had to grapple with the new realisation that the world of work and the tasks and problems they will encounter do not ‘match’ the skills and knowledge developed in higher education and that the two are qualitatively different. They were, perhaps, more likely to associate this difference between the normative frameworks of the two practices (higher education and work) with the nature of their first job, which would explain the trend in the survey that they were more likely to remember their first job as not related to their degree and as requiring less skill and expertise from them.

7.4 Conclusion

In this chapter I performed a secondary analysis of REFLEX dataset. I drew on CHAT, which enabled me to recognise the importance of investigating the communal representations within which the datasets were created and which underpin the datasets. I showed that this position could be used to critically examine the representational architecture (e.g. assumptions, goals, conceptual models) behind existing surveys as well as to introduce a new representational framework to an existing dataset. The outcome of this CHAT-based form of secondary analysis is that new insights and trends that were previously overlooked could be extracted from existing data. I demonstrated this using REFLEX data sets.

The new insights revealed in the secondary analysis were that graduates who had an opportunity to develop horizontal expertise in an internship were positioned differently in relation to their first job and may have been able to secure more rewarding first employment than their peers without an internship. This is despite the fact that there were seemingly no differences between the two groups with respect to traditional markers of graduate transition

(e.g. length of time searching for work, and first salary). Finally, the secondary analysis of REFLEX suggests that it is necessary to go beyond the research on graduate skills that operates on the input (e.g. background, years of education) and output model of graduate transition (e.g. length of transition, first salary) within classical transition research, and to supplant it with research that will examine in more depth the learning process that transforms inputs into outputs. In line with this, in the next chapter I will take the abovementioned insights forward and examine learning in internships through the use of qualitative methods.

Chapter 8. Horizontal expertise development in internships: Methods of analysis and emerging themes

8.1 Introduction

So far I have proposed that the learning dimension of graduate transition could be conceptualised as ‘horizontal expertise’ development (Chapter 5). Then, I developed a mixed-method framework that shares its fundamental dialectical assumptions with the substantive model of horizontal expertise. In particular, I showed how discussion about the dialectic principle led me to consider dialogue and argumentation in social research activity (Chapter 6). In this section I return to the ideas of dialogue and argumentation in a focus group setting.

In the previous chapter I re-purposed one extant graduate survey to reveal new insights into horizontal skills development and I showed how learning in an internship led to the different experiences of graduates’ first job. In this chapter I will bring the quantitative insights to life by showing what is specific to the learning in an internship that may subsequently lead to the identified differences in the experience of the first job between the internship and degree-only group. To do this I will show the accounts of students and graduates relating to their experience of doing an internship, and demonstrate how the graduate horizontal expertise framework can shed light on aspects of graduate expertise development that would otherwise go undetected.

This chapter is divided into four parts. In the first part I show why internships are a good analytical resource for expertise development. In the second I establish some of the guiding methodological principles for my qualitative study of students’ and graduates’ discourse on

internships. In particular, I show how the focus group method, when underpinned by dialogical and sociocultural assumptions, can extend the dialectical methodology I developed for researching the horizontal expertise model. In the third part I will describe and reflect on the research procedure and process. Finally, I will outline my key findings as to how research participants used the internship to rethink their degree and occupational pathways.

8.2 Internship as a form of graduate transition and a site for expertise development

In Chapter 2 I showed that the graduate labour market could be characterised in terms of congestion and ‘extended entry tournaments’ for highly-skilled and highly-paid jobs (Mardsen 2007). In this context I showed that employers use internships to employ graduate expertise and recruit graduate talent (e.g. Coco 2000; High Fliers Research 2015, 2016) and that graduates increasingly use internships to gain a competitive advantage on the graduate labour market as well as to explore their interests and develop their expertise (Hirsh 2015).

Moreover, in relation to previous discussions on learning and expertise development (Chapter 5), internships as sites of expertise development can be understood in terms of ‘mediational transitions’. I previously showed that internships as sites of learning could be seen, through the lens of Beach (1999, 2003) as a form of mediational transition or mediational learning across contexts. As intermediary activities between higher education and work activity, Beach showed (2003) that internships are full of developmental potential for the individuals who partake in them. The developmental potential of internships includes individuals having resources to develop new positions, relations and a sense of self in the world (Beach 2003).

However, in Beach’s work (1999, 2000) mediational activities, such as internships, tend to be described in the form of vertical development resulting from simulation of the real activity, or

from the periphery towards full participation in the real activity. In this sense an apprenticeship is a better example of the mediational activity in Beach's (1999) model, because of the assumption that a person is learning the trade in order to move to the real context of the trade. However, relative to the immersion of apprentices into the work process, the participation of contemporary interns can be seen more in terms of negotiating and visiting a practice for a limited period of time. Moreover, the occupational domain of internships does not have to be closely linked with the educational domain (Perlin 2011).

Thus, students doing internships act as 'visitors' to a particular workplace and their subsequent work destinations can vary from the internship workplace. For instance, the internship as a mediational activity may lead to another internship in a different sector, a job in a similar or different sector, or to further education. Thus, I see interns as participants in a mediational activity who are moving collaterally or horizontally between practices with non-linear trajectories. It is important to note that Beach's (2003) ideas about consequential transition in an internship were helpfully pursued in Lundsteen's (2011) sociocultural study of how students experience an internship. However, my study has a different analytical focus from Lundsteen's (2011) investigation of internship because I focus on the *process* of transition from education to work and the development of 'horizontal expertise', which influences ways of thinking and acting in different contexts, and not on the experience of a particular worksite.

Finally, one important distinction in the literature that further narrows down what I will define as the internship experience is the distinction between 'work experience' and 'internship'. Work experience is usually arranged by a University and forms part of the formal curriculum (Nijhof and Poortman 2013). In internships, however, the work is negotiated between the company and the intern (Guile and Lahiff 2013; Guile forthcoming).

This distinction is theoretically relevant because work placement and internships have different ‘objects of activity’ (Leontiev 1978). A placement that is part of the curriculum is embedded primarily in the activity of learning in an educational context rather than in the workplace context. In contrast to this, internships are part of the workplace activity.

Thus, in this chapter I will approach internships as a resource that students and graduates use to develop their expertise and move into work or back to education. Moreover, as resources imbued with developmental potential internships provide methodologically a window into the learning challenges that students and graduates encounter at work.

8.3 Method and methodology for researching horizontal expertise in an internship

In this section I will present my analytical framework for researching horizontal expertise in an internship. However, in order to do this I will first need to introduce the method of focus groups, and then specify how I will use dialogical methodology for focus group discourse analysis because I, as I mentioned (Chapter 4), there has been an activity-dialogue split in CHAT and show how this methodology is aligned with the mixed-method framework outlined in Chapter 6.

8.3.1 Focus group method and horizontal expertise research

The focus group is a method of data collection in which an informal group discussion is held around a topic selected by a researcher (Wilkinson 1998). Originating from market research, focus groups only relatively recently received more attention in social sciences education (Bloor *et al.* 2001) as methods that are positioned in the space between interviews and observation methods (Morgan 1997). As a method focus groups are credited with giving researchers unique access to two elements: (i) the interpretive aspects of social life (e.g.

language, social meanings, knowledge and norms that people attribute to events) or what I will refer to as ‘the content’ of focus group dialogue, and (ii) the interaction among participants in a focus group (e.g. how participants interact, how their opinions are formed, negotiated and changed) (Kitzinger 1994, Bloor, Frankland *et al.* 2001). However, at the same time these two key characteristics create challenges for researchers. Namely, some have questioned the extent to which participants express their genuine opinion or knowledge during the discussion as opposed leaning towards creating consensus with others or sharing opinions that are not theirs (Morgan 1997). However, the perspective I will introduce below views participants as using available voices, experiences and knowledge to reason and position themselves in the discussion (see below on heterogeneity in focus group also in Table 8.2) rather than as holding (or withholding) their true beliefs but

Moreover, focus group interactions are often characterised by social asymmetries and power relationship which can result from some participants having more experience or knowledge about the topic, or being more domineering or reticent participants (Krueger and Casey 2015). However, these challenges are usually addressed during the moderation of focus group (e.g. managing participation in a focus group; setting ground rules) (Morgan, 1997) and the analysis of data (e.g. see activity types in table 8.2). I will reflect on these aspects in the description of the research procedure below.

The focus group method is not affiliated with any particular qualitative methodological framework. There is a sense of ‘agnosticism’ with respect to focus groups relative to the theoretical and epistemological positions of the researchers (Barbour 2007). However, as outlined in Chapter 6, it is important to state how particular methods will be used to collect data and analyse discourse. Thus, I need to show how I will employ the focus group method by specifying the methodological assumptions that will guide its use and the analysis of focus

group data. Moreover, I will need to demonstrate how the methodology is associated with the overall CHAT methodology developed so far (Chapters 6 and 7).

The focus group method is not commonly used in CHAT research relative to other methods, such as in situ observations and interviews (Roth 2010; Engeström and Sannino 2011).

However, in relation to my qualitative study, focus groups have an advantage over observation and interview-based methods. Relative to observation based methods, focus group methods enable me to (i) gain insight into a variety of reflections about the experience of internships in a larger number of cases, and (ii) develop an understanding of the aspects of the internship experience that are common or unique among the focus group participants. In other words, the interactional aspect of the unfolding discourse in a focus group discussion is a dimension that would be lost in an interview. Thus, I will use the focus group method and show, in subsequent sections, that focus groups, like observation-based methods, enable researchers to generate insights about the unique and the collective sociocultural features of social life.³⁶ I will acknowledge that there is a tension between the sociocultural and activity theory CHAT researchers relative to the value of focus group dialogue and I will argue that focus groups have the potential to enrich the methodological repertoire of CHAT.

In the next section I will introduce a dialogical approach to the focus group method. I will show that the dialogic approach shares important epistemological commonalities with CHAT and that nuanced analytical categories have been developed to investigate focus group discourse.

³⁶ In other words, I will show that research that employs the observational method in order to examine a situated type of activity is no more of an 'authentic' research situation than focus groups, because the researchers, their practice and tools contribute to the locally produced meanings of their researched participants. For instance, the fact that research subjects are being observed, recorded and interviewed in situ means that researchers and their equipment enter the dialogical matrix of the research setting. The research subjects, as heterogeneous thinkers, will thus position themselves and think in relation to the researchers observing their activity.

Focus on dialogue: Synergies between the CHAT and dialogical perspectives

In this section I will show that although CHAT and dialogism are distinctive approaches they share important epistemological assumptions that make them compatible. First, both approaches have a common non-dualist epistemological position and operate on the assumption of a mediated relationship between the individual and world (e.g. Markova 2003; Stetsenko 2007; Linell 2009). Second, they both agree on the importance of dialogue as a way of relating to the world albeit there may be disagreements about the extent to which facet of mediation is dominant (i.e. mediation through dialogue or activity) (Guile 2011a). It is due to this shared assumption that both dialogism and CHAT conceptualise human activity as a relational and culturally mediated process and see the use of language and speech as providing rich insights into both the collective and local meanings. I focus here on the concept of speech genre, which figures prominently in both traditions, to draw attention to the compatibility and synergy of CHAT and dialogism.

In Chapter 4 I showed that Vygotsky's ideas evolved into several different strands of CHAT. One of the strands, the sociocultural approach, focuses on dialogue (language and speech) and the way in which people's relationships with the world are mediated through dialogue (Wertsch 1991). For example, I showed in Chapter 5 that the sociocultural perspective foregrounds the ways in which people think and talk about their transitions between different social practices (e.g. university and work) as a result of their participation. In contrast to this, the dialogical approach (from now on 'dialogism') is a distinct epistemological and ontological approach in psychology, linguistics and education that focuses on how people 'acquire knowledge about the world and ascribe meaning to the world' by giving emphasis to 'the role of interaction and contexts, as well as language and the contribution of "the other"' (Linell 2009:7; see also Markova 2003). Some of the main tenets of dialogism are illustrated in Table 8.1 and contrasted with 'monologicistic' approaches (Linell 1998). The monological

approach is seen as embracing dichotomous thinking (Linell 2009), and thus parallels the Cartesian model of social science (Chapter 6). From the table it is evident that, in contrast to the monologicistic approach, dialogism assumes an intertwined and mutually constituting relationship between thinking and speech (cognition and communication), mind and world, individual and collective.

Table 8.1 Monological and Dialogical approaches to language, cognition and communication adapted from Linell (1998)

Monological approach	Dialogical approach
Cognition and communication are two separate distinct processes	Cognition and communication are intertwined and interdependent (e.g. inner dialogue)
Cognition is seen in terms of information processing	Cognition is seen in terms of transactions with the world and as distributed across people, sites and artefacts
Communication is seen in terms of transferring meaning/representations from speaker to listener (e.g. the conduit metaphor of language as and the transmission model of communication)	Communication is seen as highly social and collective; speaker and listener attuned and responsive to each other and co-authoring the discourse

Although dialogism and CHAT are distinct philosophies and approaches, they share some fundamental assumptions about the relationship between the mind and the world more generally and the role of dialogue and argument in human thinking and activity specifically. These similarities are especially evident in the legacy of Bakhtin’s work in both the dialogical and sociocultural approaches and, in particular, in the way both traditions use ‘speech genre’ as a key concept. Below, I will focus on Wertsch’s work (1991) as representative of the sociocultural approach, and on the dialogic perspective of Markova and Linell (Linell 1998, 2005; Markova *et al.* 2007) in order to evidence their common assumptions, using Bakhtin’s notion of speech genre.

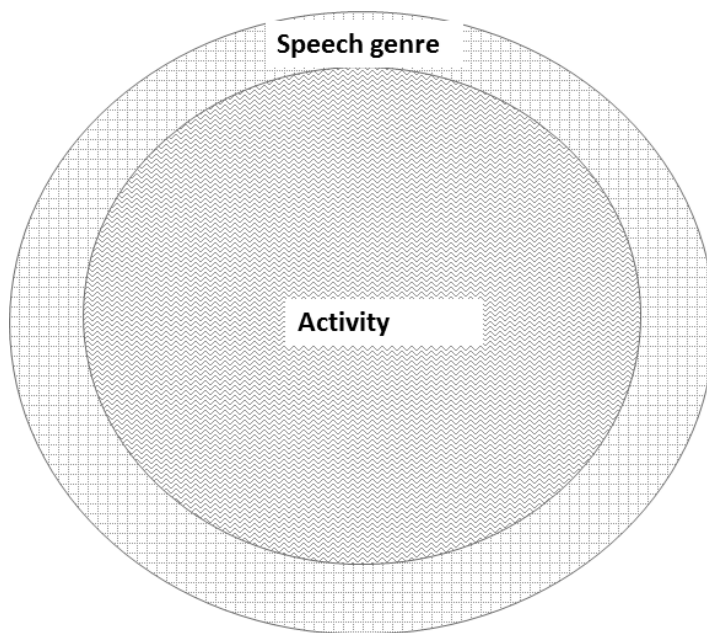
The commonalities and synergies of Bakhtin's and Vygotsky's work on dialogue have been covered extensively in the literature (Cole 1996; Daniels 2001; Markova 2003; Engeström and Sannaliso 2013; Stetsenko 2013; Roth 2016) albeit with authors such as Wegerif (2008) expressing reservations about the synergies.

Wertsch (1985, 1991), a sociocultural psychologist, gave one of the most influential accounts that draws parallels and point to synergies between the work of Vygotsky and Bakhtin on dialogue. He argued that the two fundamental ideas on dialogue that Bakhtin and Vygotsky shared are that: (i) human psychological processes are closely related to social and communicative processes that is specific to a particular context and (ii) in order to understand human action it is paramount to understand what mediates that action such as an overarching activity and the speech genre it affords as well as which signs, tools or semiotic devices are employed within the speech genre and dialogue-imbued activity. Based on these similarities, Wertsch (1991) further argued that Bakhtin's dialogical work could extend Vygotsky's approach to how culture and society mediate human action through dialogue. In particular, Bakhtin's work, Wertsch argued (1991), could be used to emphasise the role of societal discourses (e.g. institutional, specialised and everyday) as resources for individuals to talk, think and act on the world. One particular way in which the role of societal discourses in human thinking and development was conceptualised was through speech genres. For Wertsch (1991) speech genres represent cultural tools ('mediational means') that people can draw on to act and talk in a manner appropriate to a situation.

Speech genres, according to Bakhtin (1986), are 'stable types of utterances' that developed alongside various forms of human activity. Speech genres reflect the activity with which they co-developed. In particular, speech genres reflect the 'goals' and 'conditions' of activities, both in terms of what is being thematised (content) and the style of utterances (Bakhtin

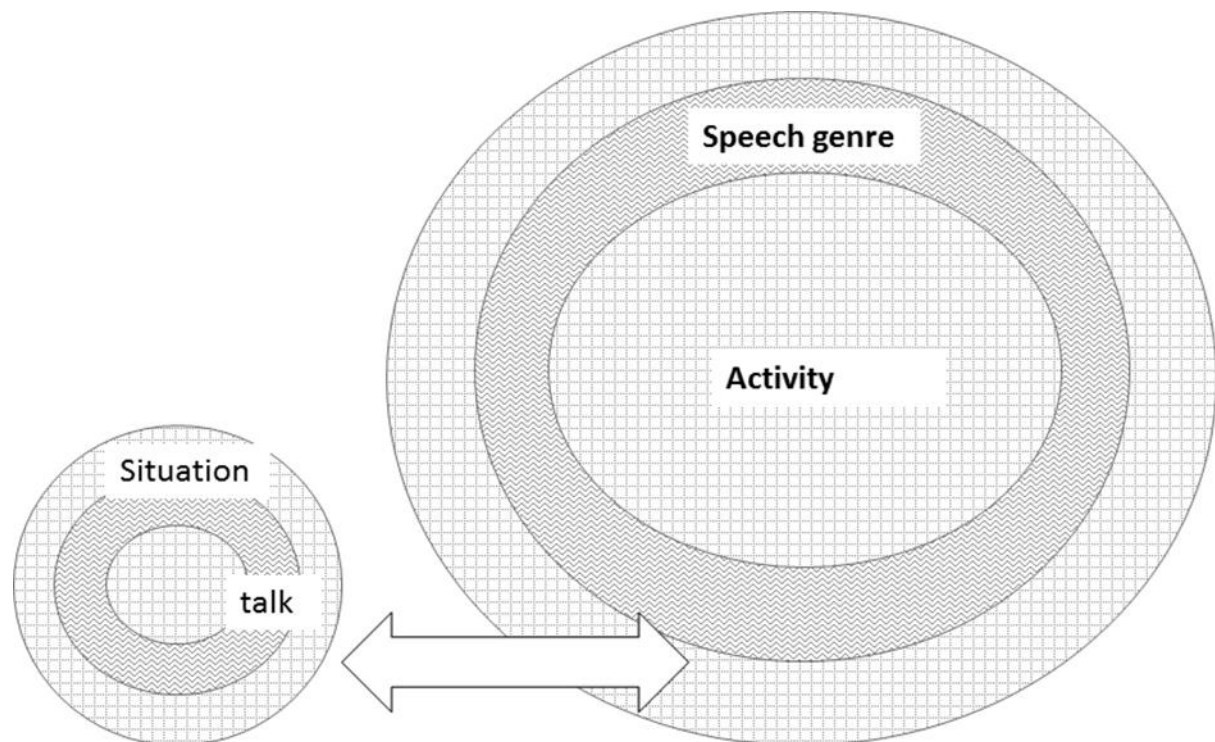
1986). Furthermore, Bakhtin's position was that we cannot escape speech genres, we can only learn more appropriate genres for a particular situation (Holquist 1986:xix). As Wertsch argued, Bakhtin considered that 'it is no more possible to produce an utterance without using some speech genre than it is possible to produce an utterance without using some national language, such as English' (1991:62).

Figure 8.1 Speech genres as co-developing with activity



Bakhtin's central conviction that speech is 'inherently and essentially belonging to settings, groups, or individuals' (Wertsch 1997:77) resonates with Linell's (1998, 2009) argument that speech genre is a central 'meso-level' concept connecting talk in situated settings (micro or action-level) and different societal and institutional (macro or activity-level) levels of analysis (Linell and Tunqvist 2003; Linell 2009). In fact Markova *et al.* (2007) and Linell (1998, 2009) have engaged with Bakhtin's ideas to develop the position that dialogue always has a 'double dialogical' character (see Table 8.2).

Figure 8.2 Double dialogicality of discourse and speech genres



This means that dialogue belongs simultaneously to the immediate context of speech (a particular situation or situational dialogicity) and to the overarching context of activity (activity type or sociocultural dialogicity) (see Table 8.2 and Figure 8.2). In other words, situated interactions belong to socio-historical traditions and socio-historical traditions are manifested and maintained in situated interactions (Linell 2009). This interdependent relationship is expressed in the following quote:

One of the basic assumptions of dialogism is that actions and utterances are interdependent with the overarching activity of which they are part (Bakhtin 1984; Todorov 1986). At the same time, superordinate activities are of course made up of their constitutive acts and utterances (Linell 1998a:87). (Markova et al. 2007:69)

Table 8.2 Double dialogicality of discourse (from Markova et al. 2007)

Local ↔ sociocultural	
Micro-level situations Actions of people Meaning is produced locally through situated interaction and dynamics circulation of ideas in focus groups	Macro-level or sociocultural level Social activities Sociocultural meaning formed and re-formed through social and historical process Circulation of ideas in a society

It is important to note that the position of Markova *et al.* (2007) differs from that of other approaches that focus on discourse, such as critical discourse analysis (e.g. Fairclough). The main difference lies in critical discourse approaches focusing predominantly on the social aspect of discourse and exploring it with reference to ideology and power-relations (e.g. Linell 2009). Hence, where dialogism assumes that dialogue and context mutually constitute each other, critical discourse analysts will focus on how social markers such as class, gender and race predetermine both dialogue and context.

This ‘double-dialogicality’ features in the work of CHAT researchers such as Roth (2008, 2010), who argue that situated language-use among groups of participants is one of the main tools that gives researchers access to the collective (this is an instance of the dialectical principles outlined in Chapter 6). However, Roth’s methodological examples (2008, 2015) presuppose that it is the ‘observation’ of action and talk *in situ* that enables researchers to extrapolate their insights to the collective. In the case of my study this would entail observing how students talk in an internship as opposed to in higher education. However, as dialogical authors such as Markova *et al.* (2007) have shown, to research talk on internships in a focus group is not to the detriment of ‘double dialogicality’ of discourse. This is because focus groups as ‘societies in the miniature’ provide a window into the collective, socio-cultural realm (‘generalised possibilities’) and the local, unique and individual realm (individual in the sense of individual realisation of the generalised possibilities). Thus, I argue that there are

important commonalities between the fundamental principles of CHAT and dialogism. However, due to the focus on the discursive aspects of relating to the world, dialogism developed a set of nuanced analytical categories to investigate focus groups' discourse. I will explore this in the next section.

Dialogical principles for focus groups discourse analysis

The assumption of mutual interdependence between micro-level situations of talk and action and macro-level activities (i.e. double dialogicality of discourse and cognition) was the main idea that Markova *et al.* (2007) took forward through their focus group framework. It is on the basis of the double dialogicality principle that the focus group could be understood as 'society in miniature'. They argued:

Focus groups illuminate the holistic aspect of symbolic communication. We assume that what is said and argued about is not only a local activity here-and-now but that language in real social interactions and sense-making involves socio-cultural aspects of dialogue; the ways in which people generate meaning in the group dynamics of multi-party talk interactions; the kind of communicative activities that participants in focus groups perform (Markova et al. 2007:47).

This view of focus group discourse as being simultaneously produced in relation to the collective (societal discourses, narratives) and local interaction (the 'face-to-face' and 'here-and-now' contexts) among individuals and settings (Grossen and Salazar Orvig 2011:497) could be seen as a methodological expression of the 'collectividual' principle of CHAT (Chapter 6). This is also evident in the following quote:

In our view, taking full consideration of the context in which focus groups take place and of the discursive processes at work in no way excludes the fact that participants of focus groups, as members of various social groups, share a great deal of social knowledge and participate in social life on the basis of implicit knowledge and routines. (p.50)

Extrapolating from this assumption, Markova *et al.* (2007) developed a focus group approach that sees focus groups as sites of ‘holistic communication’, where social knowledge is shared and transformed among the participants. I outlined these in Table 8.3 and I used them as a framework for the analysis of my data. The four key principles of this approach are as follows:

- (1) Focus groups are hybrid speech genres. There is no particular conventionalised form of talk (speech genre) in focus groups *per se*. Focus groups are communicative hybrids. Which speech genres will be used by the participants will depend on the ‘external framing’ of the focus group (e.g. what researchers state as the purpose and goal of the discussion, the setting in which the focus group is conducted, etc.) and its ‘internal framing’ as well as a range of individual presuppositions about what is expected of them. I will reflect on the external framing of my discussion groups in the section on research procedure.

- (2) Focus group discourse draws on social and cultural knowledge which participants have to draw on in order to make their point, agree and contest with others. This could involve a variety of narratives, beliefs, representations and knowledge. Markova *et al.* distinguish between different levels of deep-seated cultural presuppositions about objects.

Table 8.3 The analytical tools for dialogic discourse analysis (adapted from Markova et al. 2007)

Characteristics of focus groups	Analytical categories	Analytical questions
(i) Communicative activity types	<p>Framing (external): the context or the set-up of the group, the objective characteristics (e.g. Gender, age, profession)</p> <p><u>Footing: the position or attitude of participants toward the topic of the focus group</u></p> <p><u>Activity roles: different discursive roles that participants can take. For instance for participants the roles can be the speaker, the listener, instigator of the topic, the devil’s advocate. Moderators can take active, facilitating, intervening roles or choose to be in the background etc.</u></p> <p>Social roles: associated with the social position of the participants (father, student, lawyer, football fan)</p>	<p>What assumptions do participants have about the topic of discussion and how does this manifest itself?</p> <p>What else may play the role in how they approach the topic?</p>
(ii) Heterogeneity of subjects	<p>Dilemmas and characters in vignettes: create a form of identification for the participants</p> <p><u>Other’s arguments: participants position each other in relation to each other’s arguments</u></p> <p><u>Discourses: discourses participants are speaking from: imaginary audience they are addressing</u></p>	<p>Who is doing the speaking?</p> <p>Who are they addressing?</p> <p>What discourses, knowledge and particular positions are they introducing into the discussion?</p> <p>E.g. Quotations, represented discourses, fictional speakers, expressions of different points of view</p>
(iii) Circulation of ideas and the use of discursive devices used to construct and express a topic	<p><u>Topics: local, coherent episodes of talk in focus groups about certain events or objects that participants pursue.</u></p> <p><u>Themes: recurring topics in or across focus groups</u></p> <p><u>Discursive figures: tools to a) understand the issue which is discussed (analogies, distinctions, metaphors, examples) and b) bolster argument and argue a point (personal stories, exemplary stories)</u></p>	<p>What are more general patterns in focus group discussion?</p> <p>What is taken for granted, assumed?</p> <p>Which discursive figures were used as resources to make sense and argue?</p> <p>E.g. ‘reminds me of’, ‘is the same as’, ‘is similar to’ etc. Analogy is often part and parcel of a partially implicit argument of the following: y is good/bad and therefore x too should be accepted or not accepted</p>

(iv) Socially shared knowledge	<u>Proto-Themata: ‘taken-as-shared’ or ‘taken-for-granted’ cultural suppositions from which we think at a particular period of time (171).</u> Themata: more general underlying, embedded, cultural assumptions of themes. Implicit premises that ‘we think from rather than about’ (164).	What are the underlying assumptions of these patterns? What is taken for granted, assumed?
--------------------------------	---	---

- (3) Heterogeneity of thinking of the focus group participants. Participants are conceptualised as heterogeneous thinkers with the ability to think together (e.g. interdependently co-constructing meaning), think from different discursive positions and represent different and sometimes contradictory stances. In taking different positions, participants are said to reveal different forms of socially shared knowledge.
- (4) Circulation and transformation of ideas in focus group. Ideas in dialogue circulate, get transformed and contested, and participants may use discursive devices (analogies, metaphors, citations) to construct a topic. In other words, over the course of a focus group participants can take up varying accounts and positions because topics are dynamically developed throughout the dialogue and intertwined with managing relationships, identities and emotions.

8.3.2 The analytical framework for discussion groups on horizontal expertise in an internship

In Chapter 6 I established several key elements of my qualitative study, outlining the research problem and the specific research question that will guide the analysis (see Table 8.4). In this section I develop additional analytical resources for data collection and data analysis of focus group research relating to the internship experience. Specifically, I will foreground in the focus group discourse (unit of analysis) the various forms of sociocultural knowledge and understanding that focus group participants introduce when discussing their experiences of doing an internship.

Table 8.4 Research design of focus group research on internship

	Idiographic Qualitative Study of HE
Overarching research problem (Chapter 2)	Research on the learning dimension of graduate transition to work is divided along paradigmatic lines into qualitative and quantitative research. What kind of new insights can a mixed-method study of the learning dimensions find?
Specific research problem	Due to protraction and diversity of transitions in the contemporary context it is becoming increasingly more necessary to consider the horizontal aspects of expertise
Specific research question	How do students and recent graduates experience movement from education to work (i.e. development of horizontal expertise) in an internship?
Theoretical framework	Cultural historical activity theory (CHAT)
Object of enquiry	Graduate Horizontal expertise model
Unit of analysis	Focus group accounts of education to work movement in an internship
Evidence	Predominantly qualitative

Data collection

In total I conducted five focus groups and two interviews with eighteen students and graduates (see Table 8.5) during the period of February-May 2016 (for the timeline of groups see Table C.1 in appendix C).

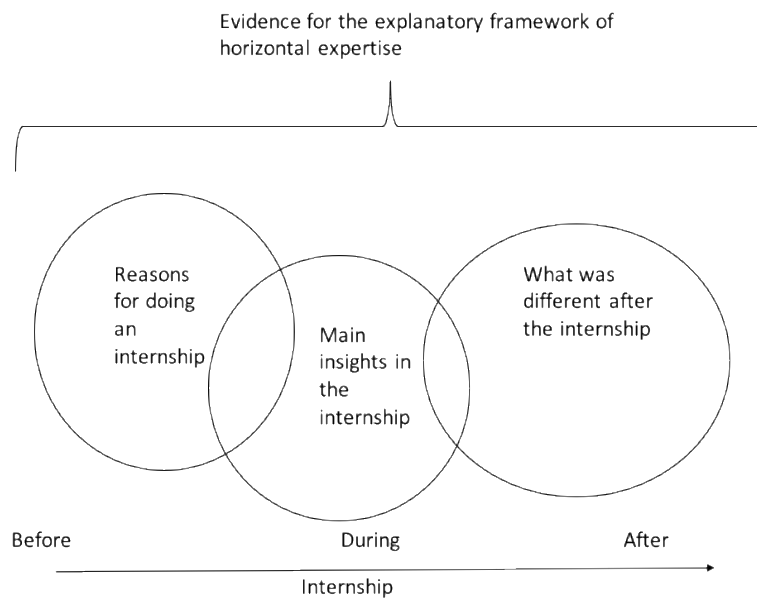
Regarding focus group protocols, I drew on Kvale's (1996) insights that interview guides (i.e. protocols and questions) should thematically relate to the research problem and the theoretical conceptions of the problem. This is in line with the assumption of research as a mediated activity whereby goals and interests explicitly and implicitly guide the research process (Chapter 6). Moreover, this is in line with the focus group literature which suggests that focused and moderator-led discussion is both a strength (e.g. collecting relevant data from larger number of participants quickly) and a weakness (e.g. a moderator influences the interaction and the unfolding of topics in addition to observing interactions) (Morgan 1997). For this reason and because implicit assumptions and theories always guide the discussions and interviews that researchers have with their research participants it is important to be

explicit about these assumptions. However, at the same time, I did not want to impose the horizontal expertise framework onto the discussion of internships and force the participants to discuss their experience in these terms. Instead, through interview prompts, I wanted to stimulate a more general discussion about the dynamics of the graduate transition process and to hear how their thinking about it changed over time and what brought about these changes.

The focus group protocol consisted of three open-ended questions or focus group prompts (see Figure 8.3). The prompts represent those tools which enable participants to actively reflect on the aspects of their experience that are relevant for my research goals and questions. My assumption was that through the first three prompts I could stimulate discussion about the temporal dimension of their experience of transitioning, thereby giving me rich data that would encompass the issues around horizontal expertise too. However, I also used more specific thematic prompts (see figure C.4 in appendix for focus group schedule) and more conventional probes in focus groups (e.g. ‘interesting, tell me more’, ‘does anyone have a different opinion/experience’).

The first prompt in terms of temporality aims to stimulate discussion about the time before they undertook the internship and the process of deciding to do an internship, choosing a particular internship, etc. The second prompt addresses the experience of working as an intern and the challenges and insights they gained from the experience of being an intern. The third aims to stimulate discussion about future plans in light of their experience of doing a degree and one or several internships.

Figure 8.3 Prompts and horizontal framework



In summary, the three prompts that guided the focus group discussion were:

- The reasons for deciding to do an internship;
- Insights, understandings and perplexities about the work which they took away from the internship; and
- The effect that the internship had on their future (degree and career) plans.

Furthermore, these prompts are associated with the horizontal expertise framework in the following ways:

- Enquiring about the reasons why the focus group participants decided it was important to complete an internship will give me insights into why they thought it was important to engage in boundary-crossing and what they thought they would gain from the experience.

- Enquiring about insights and understandings as well as perplexities and contradictions they encountered while making the transition to work will give me an insight into what they have learned from transitioning to work in an internship and from being immersed in occupational practice (boundary-crossing and recontextualisation).
- Enquiring about the effects the internship had on their future plans, as related to their degree and their career, will enable me to make inferences about how their immersion in occupational practices related to their self-understanding of who they were and wanted to become (identity), as well as what their future occupational plans might be (boundary-crossing, recontextualisation).

Strategy for data analysis

Focus group data analyses have been criticised for a 'lack of understanding of how to analyse such data' (Parker and Tritter 2006; Markova *et al.* 2007), especially as there is a tendency to analyse group data as a number of individual interviews (Wilkinson 1998; Parker and Tritter 2006). The dialogical analysis of focus group discourse overcomes this problem because it assumes that any individual contribution to a focus group is a collective achievement. In addition to this collective co-production of focus group discourse I will assume that each individual contribution to a topic suggests a sociocultural resource that participants deemed useful and relevant.

In analysing focus group discourse (unit of analysis) I focus on the content or the 'what' of the students' discourse (topics, themes, social knowledge), rather than the 'how' of the discourse (e.g. rhetorical devices, positions, turn-taking). I will primarily on the different types of social knowledge that are thematised and the participants' experiential insights and dilemmas in the

discourse. I draw on Table 8.3 which provides analytical tools for dialogic discourse analysis my focus group data.

Regarding the practice of coding and analysing data, there is an inherent tension between the dialogical view of discourse and the practice of coding and categorising the content of discourse (e.g. by looking at emerging themes). The practice of coding can be seen as a process that ‘freezes the dynamic of the dialogue’ (Markova and Linell 1996:369) and reduces the dialogical character of focus groups by ‘applying certain coding conventions to data, selectively imposing a certain structure on the data’ (Markova and Linell 1996:67).

My strategy for focus group discourse analysis combines a more conventional thematic analysis with dialogical elements. In this sense I followed the coding procedure as suggested by Markova *et al.* (2007) which involved the following. First, I read through the transcripts, searched and labelled the stretches of dialogue that are joined by a topic the interlocutors were thematising (see ‘circulation of ideas and the use of discursive devices’ in Table 8.3) These are ‘topical episodes’ (e.g. internship is an opportunity to network). I analysed the i) content of topical episodes using the analytical tools I outlined in Table 8.3, ii) how the content was thematised whether it involved using the voice of an employer, own experience, or making evaluations and judgements (see ‘heterogeneity of subjects in Table 8.3), and what the common underlying assumptions were (see ‘socially shared knowledge in Table 8.3). I then grouped the topical episodes under the same overarching ‘theme’ (e.g. internships provide opportunities to find work). Subsequently, I compared themes across focus groups. For an example of focus group topics and themes see Figure C.6 in appendix C and for themes and topic guides for all focus group see Table C.2 in appendix C.

When presenting the emerging themes from the data (Figure 8.3) I will link the themes with the three focus group prompts first (i.e. reasons, insights and effects) in order to illustrate

more closely how the focus group discussions unfolded. Then I will re-group the themes in relation to the horizontal expertise framework. I will use the framework as a backdrop to make interpretive inferences about the learning challenges in internships.

Researching horizontal expertise in an internship – research process and emerging themes in the data

Research process and ethical process

In this section I will describe the research process and reflect on any ethical issues which arose during this process. This research was approved by the appropriate University Research Ethics Committee on the basis that there were no major ethical issues that would impede the research. I also took appropriate measures to ensure the well-being and privacy of the research participants (BERA 2011, ESRC 2017) before, during and after the research process (see Kvale and Brinkmann 2009). My reflections on how I ensured the ethical process before, during and after research is outlined in the sub-sections below.

Participant recruitment

As a PhD student in a large multi-faculty university in London I initially used my familiarity with university services to recruit research participants. I used my 'insider' role as a student to negotiate access to the participants. I also used my insider/student status to access university facilities to book rooms, rent recording equipment etc. The situation in which researchers are 'already members of the organization or community they are seeking to investigate' (Humphrey 2012:572) has been debated under the category of 'insider research' (Humphrey 2012; Wilkinson and Kitzinger 2013). The challenge of being an insider researcher is that a range of dilemmas and conflicts can emerge due to holding multiple roles in an organisation (Humphrey 2012). However, as I will show in the 'reflexivity' section, being an insider researcher did not generate any ethical dilemmas, but rather elevated the

importance of developing a reflexive stance towards the research and towards myself as a researcher.

From my experience as a student I was aware that the careers department had access to the relevant BA and MA students' emails and could, thus, act as a gatekeeper to the research participants. I decided to approach the Careers Service with a request to include in one of their newsletters an invitation to my research. Two careers officers responded to my email and agreed they would send out the invitation to the BA programmes they were affiliated with. These were the undergraduate programme of engineering and an undergraduate liberal arts programme. Two rounds of emails were circulated to the students by the careers officer a month apart. The first circulation generated no response. In consultation with the careers officers and with the support of my scholarship provider (ESRC) I secured funding for £20 Amazon vouchers as tokens to incentivise focus group participants. Providing incentives is a common procedure in focus group research (Stewart, Shamdasani and Rook 2007). The response rate improved exponentially after this. Providing tokens for focus group participation is something which is a norm in the focus group research literature (e.g. Liam 2011). Additionally, I put up posters including the same text about my research and an invitation to participate in my research around the notice boards on campus and in two nearby student halls. The content of the email and the posters are in Figure C.2 in annex. The selection criteria for research participants was that they had experience of at least one internship in the UK and that they were either current students or recent BA or MA graduates. The requirement to have experience of an internship in the UK labour market was in place in order to be able to make informed connections about their higher education and work experience. This provided a common basis for discussion among focus group participants or what is referred to in the literature as 'group homogeneity' (Stewart, Shamdasani, Rook 2007)

I originally recruited twenty-five participants for my research, eight of whom dropped out over the course of arranging a date for the group discussion without providing me with a reason and seventeen of whom participated in the research (see Table 8.5). One unanticipated challenge of organising a group discussion was negotiating a day and time that would work for everyone and retaining the interest of potential participants for a couple of weeks, which is how long it took on average to agree on the meeting. Challenges such as this one are well-noted in the literature (Bloor, Frankland *et al*, 2001) and I made sure to leave enough time and ‘over-recruit’ in order to tackle it.

In focus group three (FG3) there were only two participants because the rest of the participants cancelled their participation at the last minute. However, the two participants had a lively discussion. Moreover, in order to enable them to reflect on more internship experiences I mentioned some of the themes from the previous group discussion as additional prompts. I also conducted two individual interviews using the same protocol and strategy. I believe that having previously moderated five discussion groups made me more attuned to the similarities, differences and peculiarities of the dialogue with individual participants. I found that interviews could supplement, but not replace, group discussion in terms of richness of insights. Nevertheless, they provided me with valuable insights.

Discussion procedure

The discussion group/interview sessions began with me introducing myself and my topic and thanking the participants for attending. I then explained the focus group format and told the participants that I would ideally like to have minimal input into their discussion. I asked if I could have a recorder on, explaining the anonymity and confidentiality of data from the group and asked them to sign a consent form. Nothing was recorded until after interviewees’ participation was agreed. We also agreed briefly on a verbal code of conduct for participants

outside of the focus groups – namely that the participants should respect the privacy of others by not disclosing any particular information that emerged in the focus group. This is in line with the ethical principles of focus group research (Bloor, Frankland *et al*, 2001).

One of the ethical principles I followed before, during and after the focus groups and interviews was to ensure trust-building to secure the emotional wellbeing of participants. Before the focus group I made clear the purpose and goals of the research. I also offered a one-to-one interview option in case the participants were not comfortable with the focus group set-up. During the focus group discussion I was aware of the importance of the participant-researcher relationship, not only to generate good data and insights but also to empower participants to gain insights about their own experiences. Throughout the discussion I was aware of the importance of active listening and maintaining a curious, interested and accepting attitude.

After the focus groups I ensured I left time for a debrief and asked participants about how they felt and what they thought about the focus group. In most focus groups several participants would linger on and continue to discuss their university and work-related experiences. Moreover, I made clear that if they wished to withdraw from the research they could do so. Several participants told me in the debriefing session that the group discussions and interviews helped them to reflect on what their internships meant for their occupational and degree trajectories. Some of them lamented that universities and the career service are concerned with placing them on the internship, but that they do not follow up with students afterwards to discuss their experiences. Some of them remarked that thinking about their internship and career projects during the discussion group will be beneficial for them in upcoming internship and job interviews. This, I believe, reflects the way they framed (internal framing) the discussion group and which activity type they associated it with, for

instance, as something similar to meeting a career advisor or as a session for interview preparation.

If the participants did not talk amongst themselves before the group discussion and were reticent I began the discussion with some informal topic such as their holidays, favourite parts of London and so on.

The four prompts I outlined in the previous section were the main questions I posed to the group. In situations where I thought discussions were veering away from the main prompt or becoming repetitive I would summarise what was being discussed and asked if anyone would like to add something or if they had a different opinion on what was being said. Furthermore, when I felt that the participants had not engaged in-depth with the prompts I probed then by introducing 'hypothetical scenarios'. For instance, I would say 'So, if I was a BA student and was on the fence about doing an internship, how would you convince me to do an internship?'.

Reflexivity

As an insider researcher I tried to develop a reflexive stance consistently throughout the research process. The importance of reflexivity has been widely discussed in the social science literature (e.g. Bourdieu 1996; Butler 2001). It is especially important for researchers who eschew the positivist assumption of neutrality of researchers towards the research process. The challenge in this case becomes how to conceptualise the relations between the researcher, the object of the research (the research problem) and the research participants in the absence of a safe touchstone of researcher neutrality. The challenge, put differently, is to maintain a reflexive researcher role in which 'a researcher is both integral to the social world she investigates and the medium through which others come to understand the research subject' (Elliott, 2011:1). One of the ways to achieve this, as Bourdieu (2003:281) argued, is

to use social science research tools to investigate oneself ('the work of objectivation of the subject of objectivation'). Bourdieu (2003) suggested reflection on one's social milieu, life trajectory, position within the disciplinary and professional field, and the collective history of the disciplinary domain, as well as the meta-framework one is espousing (e.g. the point of view, the illusions).

Although this task falls outside the remit of this section I have already mentioned in the introductory chapter how, having moved between work and education through internships and work experience for the last decade and having researched learning and transition across the boundaries, I am sympathetic to the learning and transition trajectories of my research participants. Moreover, in terms of my disciplinary identity, which is still situated in my primary discipline of Psychology, I felt it was important and personally liberating to conduct focus groups and give voice to the participants as opposed to using the experiments and surveys more common in psychology. What was liberating is that this research enabled me to research *with* my participants not research *them*. In hindsight I realised that this is probably the reason why I had omitted to tell my participants that I have a background in Psychology and that I consider myself a psychologist and an educational researcher simultaneously. This, I now see, would have left me concerned about the kind of meaning the participants might attribute to the purpose of my research. However, this is just my representation of how they might have responded and how this could have impacted the 'internal framing' of the focus group.

In addition to Bourdieu's account of reflexivity, another account of reflexivity that I found useful was Judith Butler's (2001) in which she argues that the key to research reflexivity is to try to understand and sympathise with the 'the other', but also to be aware of the fallibility and the futility of this project. This line of thinking, I find, resonates well with Wilkinson and

Kitzinger's (2013) statement that every researcher is always both an 'insider', in the sense of having something shared with the research participants, and an 'outsider', due to having not only a different role in the research but also different social positions (age, sex, class, ethnicity etc.) and associated experience of the world. I used these insights to develop my reflexive stance in the following way. During the research process I used my sense of familiarity and difference with what the participants were discussing as a cue to check whether I had understood what they meant. For instance, if I found myself feeling familiarity with what they were saying and anticipating how the discussion would further develop I made sure to 'check' my own presupposition and ask for clarification.

Transcription and data protection

The content of the five focus groups and the two interviews was transcribed verbatim generating 150 pages of transcribed material (about 25 pages per focus group). I also included in the transcription some non-verbal elements of discourse such as laughing and overlapping speech and longer pauses (2-3 seconds break, based on Liamputtong 2011). When analysing the data at times I went back to the original recording to get a better sense of the natural discourse. The transcripts were anonymized and participants had letters (P=participant) and numbers (P1, P2, P3) assigned to them. When presenting excerpts from the dialogue, for the purpose of coherence, I used the sign '(...)' to denote that some words (e.g. like, yeah, um), which were incomplete or resulted from rephrasing and did not add to the meaning of the sentence, were taken out. In order to ensure the anonymity and privacy of the research participants during the transcription process I assigned and used pseudonyms for my research participants. Furthermore, when presenting excerpts from the discussions/interviews I removed the names of the companies they worked for to ensure an extra layer of anonymity. The data (focus groups, interviews and transcripts) are safely stored on an external hard drive.

Table 8.5 Focus groups and interview participants

Participant pseudonym	Degree	Occupational domain of their internship(s)	Focus group /interview
Manuel	BA Arts and Sciences	Bank, hedge fund	1
John	BA Electrical and Electronic engineering	Technology company	1
Darta	BA Information Management for Business	Multinational technology company	1
Chrissi	BA mechanical engineering	Chemical company	1
Kiersten	BA Electrical and Electronic Engineering	Automotive company	2
Bao	BA Electrical and Electronic Engineering	University department, small consulting company	2
Tom	BA Arts and Sciences	Management consulting, Film industry	2
Tina	MA Environment and Sustainable Development	Manufacturing company, sustainable materials	3
Sandra	BA, mA history	Museum	3
Ana	BA liberal arts	Charity	3
Elisa	BA liberal arts	Museum	3
Kho	MA financial systems	Programming, banking	4
Stella	MA economic policy	Central bank, embassy	4
Ximena	MA public management	Multinational company PR department	5
Sara	MA public management	Policy analysis in a consulate	5
Andres	BA Journalism and Media	Corporate communications	5
Mo	MA international law	Supreme court, corporate law	6
Nina	BA English Language and Literature	PR department in a charity	7

8.4 Emerging themes and integration of insights into the internship experience

This section has two parts. In the first I will indicate the emerging themes in the data and illustrate them using 23 excerpts from focus groups and interviews. In the second part, I will

use these emerging themes to make interpretive inferences about horizontal expertise development.

Emerging themes in the data

In this section, I will outline the emerging themes in the data. I will present the data by (i) dividing them into three categories or three main focus prompts (reasons, insights and effects), (ii) specifying the overarching themes for each of the prompts/categories and (iii) illustrating the themes with excerpts from topical episodes. There are 23 excerpts from the discussions grouped around the three themes. The extracts selected thematised important and relevant insights that graduate horizontal expertise model revealed. I chose extracts that were representative of the themes in all the focus groups and interviews but that are also complementary and added to the range of insights within a theme (e.g. reasons for doing an internship theme, future plans) about horizontal expertise.

In addition to the content (topics and themes) of the discourse I will reflect on the position or voice from which the speakers are talking about their internship experience. For instance, as is evident below, in accounting for their experience of internship the participants were moving between their own experiences and their knowledge of the employers' perspective (or the voice of the employer). The additional perspectives they drew upon to discuss internships were the perspectives of their older peers and siblings, the careers' departments and lecturers. The perspective of parents was, interestingly, for the most part missing from their discussion of their educational and professional plans.

Moreover, another emerging perspective the participants drew on was the perspective of their future self. When discussing why it was important to do an internship and fine-tune their pathways, the participants tended to speak from the perspective of their envisioned futures –

as making sure that upon graduation their future selves have possibilities to choose from and resources to use to fashion a professional trajectory they would like.

Reasons for doing an internship

There were three emerging themes in relation to reasons and motivations of participants for taking on an internship: (i) to gain employment in a competitive labour market, (ii) to explore a particular occupational practice and career, and (iii) in order to develop workplace skills and capabilities.

Excerpt 1

Darta: I think in today's world a lot of companies, before hiring people for grad roles, they look at the person's, not just their final grade but their experience. And I feel like you learn a lot more during your internships than you do in lectures, because I feel like I didn't learn half as much as I did in [University] as I did in California and my experience with [the company she was interning in], so yeah. It's a good, way to like get grad roles with companies later along the line (...) and it presents a lot of like networking opportunities as well. Like when I went to California to work for [the company] not only did I get a chance to like network with the people within the [company] family but we had opportunities to go to like Facebook, Twitter, Amazon. So that's another incentive to apply to like an industry that you're really passionate about.

Chrissi: Yeah I would agree to that. Like from my experience the companies that I have worked with and heard about actually think that students just at the education are kind of ruined by (...) they like to influence the people that come in and teach them more, they don't like people that just have their one way of doing things. For example if you are with a Masters and maybe a PhD just at uni and then know all your theory but then don't understand the company values I think they would like to influence people early and know them, especially in, where I was, like engineering, they are very conservative, so they prefer, they nearly never take people that they have never seen before as a full time job. So for me it was kind of the only way of kind of getting my foot in the door and, yeah, knowing if that's what I want to do.

Manuel: Yeah, like [an international banking and financial services company] were on campus the other day and I was speaking to a lady and she said 'the best way to land a grad role with us is to do the summer internship because the summer interns are guaranteed a job'. I mean if, you must be really crap in, during your internship to not get a grad role in the end

John: I did an internship because, in engineering at least, companies want you to have experience because quite often the stuff that you learn in uni is theoretical and you can't actually then go off and build anything useful and a lot of the time the only way you learn is actually by building something and it not working and then going to talk to someone who knows how to do it and being like 'I have no idea why this isn't working' and then your whole like explaining it like 'set your something to like a random register' and it's stuff that you don't really learn in textbooks. And yeah I did mine where I did it because my dad's friend worked for them and he could get me an internship without like me having to do anything, and they're a really small company and so they couldn't sort of guarantee that they'd pay me. (...)

Chrissi: I think the money part is also a reason (...) Like a lot of internship nowadays, especially because companies focus so much on them, they are really well paid as well. And another thing is, for a lot of people, and partly mine as well, it's a lot of pressure from the department from the professors. Departments, they make it look like 'the hundred and twenty people that you're in a lecture room right now with, they're all going to be competing for this one job with Shell.

This exchange took place ten minutes into the group discussion and I chose this excerpt because of the breadth of reasons that they have covered in a continual stretch of time. The excerpt begins with Darta who draws on the employer's perspective to consider the importance of an internship for graduates. She draws on arguments such as what employers value (grades, but also experience) and then distinguishes between the learning experience at work and that in education by saying that the former is more important than what was learned at university. She continues to talk from the employer's perspective by saying that eventually doing an internship eases one's way into the graduate labour market. The horizontal expertise framework suggests that Darta is drawing on a resource available to her (her knowledge and experience of work) to justify the importance of boundary-crossing from education to work and learning how to navigate the normative framework of a workplace in an internship.

Chrissi continues the discussion in a similar (employer) tone by saying that too much education can have a detrimental effect on one's employability in the eyes of employers. She expands on and refines the notion of 'experience' of work from 'learning' something (introduced by Darta) to learning in the workplace as developing familiarity with 'company

values' and becoming 'known' and familiar to the company. She also briefly explores the perspective of students by saying that she chose to do her internship in order to decide whether this was the kind of job or occupation she wanted to do in the future. In other words, it is evident that Chrissi developed an appreciation of the normative framework that underpins work in a company (e.g. understanding values and ethos of a company, demonstrating that interns align with the values) and demonstrated she is able to reflect on the boundaries between education and work and make inferences based on this (e.g. too much education can be detrimental for finding employment).

Manuel gives another example of the reason Dartá and Chrissi already discussed by confirming that graduate roles are best secured via an internship. He makes this point by using a direct quote from an employer visiting the campus.

John's comment suggests that he responded to Dartá's cue about an internship being about learning 'more things' than at university and Chrissi's comment about too much education 'ruining' the graduate's standing with potential employers. He expands on the point of learning by contrasting education as a place where theory is learned and work as a place where you learn useful skills by learning through doing and by learning from people who have encountered the same challenges before. However, unlike Dartá, John sees the workplace and education as more complementary in providing students with skill (theoretical vs. practical that you cannot find in textbooks). This is something he returns to later in the discussion.

Another cue that John offered to the group that could be categorised as belonging to the domain of 'reasons' for doing an internship is the question of being paid for internship work. Chrissi responds to this cue by saying that internships can be not only paid but well paid, and in that sense this can serve as a reason for some students to apply. She then quickly switched

from the topic of pay to introducing another ‘actor’ in the internship discussion – that of lecturers and professors at university. She paints them as fierce advocates of internships who pressurise the students and create yet another reason for undertaking an internship. Put differently, according to the perspective I am putting forward another resource for Chrissi when deciding on her future plans were the various others at her university (e.g. lecturers, tutors) that helped her realise the importance of doing an internship. Then Darta adds to the range of reasons considered by the group by suggesting another element of the internship experience - networking with other companies in the same industry through work as a route to employment. The importance of other people and networks in learning in an internship and securing subsequent internships or employment was thematised in several focus groups and show recognition that other people in a company are a resource for interns when creating their own trajectory.

In other discussion groups similar reasons for doing an internship were discussed. The reasons seem to be similar to what Chrissi said about ‘trying out’ an industry and the reasons around finding employment discussed by Darta and John. For instance, in discussion group two Kiersten talked about internships as ‘tasters’ for a particular occupational route:

Excerpt 2

Kiersten: My brother also works in engineering, and his advice to me was basically if he hasn't taken internships when he eventually got thrown into business he would've just been like 'what the hell am I doing?' So he's like 'do an internship (laughs) so you know what you're doing and you don't get stuck in a job eventually that's not what you want', because you need a taster of, there's so much option with engineering you've got to get a taster of what sort of area you're going to be working in. It's different everywhere. There's so much selection. It would be really easy to pick the wrong industry for you and then just be, you know, sort of stuck for a bit, because student loans you get stuck as well, you can't leave a job (laughs).

Kiersten here describes internships as opportunities to try out a particular professional domain, but she also explores the consequences of not doing so, which, for her, is going down the unwanted professional route and feeling ‘stuck’. She draws on the more experienced person to give more weight to her assertion that is important to search for and find a right job. This is also a continuation and elaboration of her earlier contribution to the discussion in which she said internships and graduate schemes are ‘feelers’ for what she is going to be doing for most of her working life. In other words, in addition to showing how she uses the experience of her brother as a voice that mediates her actions and choices with regards to internships, Kiersten also thematises the importance of using internships as a resource to negotiate and develop identity by learning about professional identities, decide where to move next and avoid having to accept a job that does not enhance her sense of self.

Excerpt 3

Nina: I think that it depends really what you want, because if you wanted an internship that will turn into a job, there are a lot of internships like that, but there are also a lot of internships it's just 'we've got some work that we would like help with, you want to find out more about working in this field, that's a mutually beneficial thing but we're not going to employ you afterwards'. It's two different spheres of internship I think.

J: And you can tell them apart?

Nina: I think so. I don't think it's overt, but it's sort of the length of the internship will I suppose be an indicator. And I suppose just the language that they use when they advertise the internships, whether there's the hint of progression, or whether it's just you're doing a thing and that's this sort of isolated experience.

Nina in this excerpt thematises her knowledge of different kinds of internships that are available based on the goal/purpose the internship has for the employer (the ‘taster’/‘expertise development’ internship vs. internship as the first step towards employment in the company). She also gives examples of how she learned to understand the signs of an employer’s perspective from the internship ads – the length, progression and

future-orientedness of the internship. Nina shows she developed an understanding of the speech genre of employers and of employers objects and motives relative to student work. Put differently she developed her judgement about work that employers are offering by understanding the underpinning reasons for advertising an internship.

Insights, understanding and the perplexities about work they took away from the internship

In this section I will outline the range of ways in which discussants described the main insights about the world of work that they got from their internships. Based on the aspect of the internship they described as having been the most striking I divided the excerpts into the following themes: (i) insights about the world of work (how to get work and how working in a company operates), (ii) insights they had about their own expertise in relation to the tasks they faced in the workplace, and (iii) insights into how their degree knowledge related to performance at work requirements. All of these insights, I will show, relate to different aspects of horizontal expertise development.

Insights about the world of work

Excerpt 4a

Manuel: I got off the phone and I was like 'yeah it's this', I passed it on to the European investments guy. (...) The next thing they knew they'd made a sale. That's how fast it was. And then again the fun-, I mean the amount, I was the only one doing that kind of research at the time. It was really fast-paced. Yeah, and the good thing about it is that you got to see it right away. The bad thing is that they were twenty down on the year so I don't know, maybe there was a, some sort of institution which invested and you had made them invest and then you think like oh shit they lost like twenty million in less than a year, you know? (laughter)

Chrissi: That sounds really, like they trust you, you know, it's good. Actually, it was so funny, there was one guy and he worked two months on something on Excel and then he showed it to his neighbour, and his neighbour was like 'oh do you not know this program? You could have done it, put it, put the values in and got the result the next day', and it's not like his supervisor didn't know that (laughs).

Manuel: It's actually interesting that, 'ask questions' you get told a lot, but nobody really tells you what to ask (laughs) and then you end up messing around and spending too much time on something which doesn't require the time. (...) I feel like as an intern you have to ask those questions and cannot be really, you have to put this thought in your mind that there are no stupid questions out there, even though later you'll probably realise there are stupid questions out there (laughs) but you just have to try and get over it.

In the above excerpt Manuel talks about the responsibility attached to doing work in an internship, in which, he said, he was fully immersed as an employee. He talked about the experience as 'fast-paced' and 'fun', whilst also contrasting the 'fun' with the 'high-stakes' nature of the job and the responsibility and risk that comes with it. Chrissi interprets what Manuel said in terms of 'trust' between Manuel and the company he was interning with. She tells a story about another intern in the company who was not trusted with important tasks (unlike Manuel), but was, on the contrary, given an unimportant number-crunching task. The intern worked for a long time to complete this task not knowing that he could have used a shortcut in the programme. Chrissi hints that the intern's supervisor might have done this intentionally to keep him occupied and suggesting the importance that other professionals in an internship play as gatekeepers of meaningful work (i.e. opportunities to develop identity and expertise). This is another way she contrasts her story to Manuel's case, and her comparisons could be formulated as 'being immersed in high-stakes tasks as an intern' vs. 'being held on the periphery of work as an intern by performing meaningless tasks that keeps the interns occupied'. However, Manuel interprets the situation of the intern from Chrissi's story as one in which he was lacking the right information (i.e. that there is a formula in Excel which could have solved the whole task in a day) and enough understanding of the work practice to ask his superiors the right questions. In other words, Manuel constructs the unfortunate situation of the intern in terms of his own experience of being an intern which involved overcoming 'shyness' and asking a lot of 'stupid' questions. Manuel describes the process of learning how to work in a job as a process of having to ask a lot of questions and

only later realising that some were irrelevant. Horizontal expertise framework suggests that Manuel's account of the necessity to learn about work by asking great amount of questions shows that Manuel learned that to navigate the workplace practice he needs to learn what context-appropriate reasoning is by asking questions and making inferences for what follows based on the answers.

Excerpt 4b

Chrissi: I really did some things where I knew exactly what I was doing and I had even done it during my course already, like calculating tasks or analysis tasks. But then I realised I never asked during the lecture (laughs) why are doing this. So I was actually asking [her boss] what would he do with the data I have him or the analysis and He said 'your work now is going to be presented in a year at', that's the earliest the customer will actually see it or the person that's going to present your work is going to see it. So I realised how there are so many layers to it, to one project. I always saw engineering, I actually liked it because I knew I would get results. If you work on a project you'll see the end of a project, but then to realise those projects also take so many years (laughs)

A little later in the discussion Chrissi shared the main insight she gained from her internship. She referred back to the previous discussion (above) with Manuel by positioning herself as being different from the intern in her story, because she 'knew exactly what to do', and when she did not know she would ask her boss to explain the context surrounding her task. She further notes that she realised that what she needed to learn at work in order to keep going was 'knowing why she is doing something' or 'knowing how her work fits into the bigger picture'. In fact, understanding this 'bigger picture' and how actual engineering projects are complex with 'many layers' is something that is different from the engineering practice she imagined as a student. In the engineering practice she imagined the outcome of her work would be apparent that she could 'see' it, whereas in the practice she encountered in the workplace the end result and her drive to 'see it' are mediated by the work of others, the project cycle, presumably client involvement, etc. Her account portrays well the process of

graduate expertise development in an internship by suggesting that interns such as Chrissi come with particular knowledge and skill for how to perform certain tasks but they need to add to this knowledge an understanding of the context of work, project and a concrete task. Chrissi suggests that understanding the underpinning reasons of her tasks and how they relate to the overarching purpose of the project was helpful (i.e. it helped her recontextualise her prior skills). Moreover, by working alongside others Chrissi developed a more nuanced perspective on engineering project and on her own work tasks and goals.

Excerpt 5

Tom: For the second internship there were no channels, they're not even advertised as internships, so basically you just have to make your own internships and say 'can I work for you?' or 'are there any opportunities out'. But it's not like, a couple of months in advance 'we're going to have this in summer'. (...) So like just email random people and sometimes you get an email back. I mean that's like the only way of doing it, like email random people and then once you know, meet people at that internship you just meet your boss for a coffee and then he gives you another email and you meet that person for coffee and then they give you another email. But that's more like, it's different, like that depends on the industry. That's like for film and publishing and whatever, the creative industries.

In the second discussion group Tom argued that by deciding to pursue an internship in publishing he learned a lot about the industry itself and how differently it operates from the other industries he experienced through internships, such as management consulting. What preceded this excerpt is a discussion about the application process for internships which can be lengthy and time-consuming. Tom previously compared the application process for big companies in the UK and Germany because he was familiar with both contexts. Then he introduced into the discussion his experience of looking for an internship in publishing. His comment reveals that horizontal expertise entails becoming familiar with the communities of practice of the publishing industry and norms and rules that govern labour market entrance (i.e. how things are done in particular industries, how new employees are recruited)

and as a result making inference about how to position himself better in the recruitment process (i.e. learning how to 'play the game' of the creative industries to get an internship by emailing, meeting people and being recommended).

Excerpt 6

Nina: I was getting a lot of work and at times I felt like it was impossible for me to do what they were giving me to do. I did feel a bit overwhelmed. I did sometimes leave the office feeling a bit like 'oh, I wish, I feel like I haven't done as much as I should have done or could have done' (...) So, it was overwhelming, but it was actually really good to learn how to cope with being overwhelmed. Because when you're working, you have all these deadlines, and when you're studying you have maybe a few deadlines but people are often get really stressed out about it. You know, when you see people in the library and they haven't washed in a week, and it's just one essay, whereas in the internship it was like you've just got to get it done by five o'clock. It made me feel less precious about doing work, and just being more efficient and actually being able to just get on and do it rather than stew over it.

Nina comments on her experience of work by comparing it to her experience of preparing for exams. She considers the examples of working to deadlines in education and at work, describing work in terms of having more deadlines and more definitive or stricter deadlines, and associating this with higher levels of stress and the feeling that her tasks are never fully completed ('I haven't done as much as I could have'). She also mentions that she developed new strategies and mechanisms to cope with stress that have to do with 'efficiency' and 'getting on' with work, as opposed to the overstating and pondering over problems and challenges that, presumably, she did relative to deadlines and exams during her degree. The choice of terms such as 'efficiency', 'getting on and doing it', and 'getting it done by five o'clock' indicate how she is using workplace vocabulary to describe the challenges she encountered in her internship. This indicates that Nina learned to recognise that the nature of her work differs in educational and professional practices even when the actions she is undertaking are considered to be similar (e.g. working to a deadline, being efficient). In other

words, she learned to recognise that the she is undertaking are influenced by the overarching object/motives of educational and work activities.

Excerpt 7

Elisa: Another thing was not having anything to do as well. Throughout the day I had to constantly find ways to adapt myself to whatever situation and to look for needs of the moment, what they needed and what they required, and make myself useful in that situation (...). It was more like look for whatever they need help with at the moment and to be whatever they needed me to be.

Tina: I suppose if you're being made to do something like that then you maybe get to understand the company even better at the end because you're looking for the loopholes and the, needs maybe.

Earlier in the discussion, Elisa said that her internship taught her how to be 'proactive' because she needed to go beyond her job description and 'look for gaps in the workflow processes and then fix those gaps'. In this quote Elisa describes how one of the challenges of her internship in a museum was that it required her to find work to do. This meant learning to recognise situations in which her work could be useful and to recognise the role she is performing as an intern. Relative to the previous statement about 'loopholes' it seems that she is grounding her previous statement in her own experience, saying that this could be a strategy for working in an internship that does not have a strictly prescribed programme and tasks. Tina previously argued that lack of structure in an internship is a problem that could potentially be reported to the university if there is a partnership between the university and the organisation. However, in the excerpt above she seems to reconsider what she said before by saying that there is merit having an unstructured internship in which one has to be observant and adapt to the needs of the company. Thus, in this excerpt the participants discuss learning how to contribute to the work practice by taking into consideration both formal aspects of work (e.g. the job description, the job role) and the informal ways that work is organised by contributing from the side-lines and recognising when their expertise can be

helpful. In other words, they report expanding their understanding of what counts as working and developing expertise in an internship.

Insights about their own expertise (and skill)

The second major theme that emerged from the data had to do with the insights and perplexities individuals experienced regarding their own expertise and ability to work proficiently in an organisation during an internship. Participants contributed in different ways to the topic. Some talked about how they managed to cope with challenging situations by trying to ‘think like their boss’, become less shy about contributing to the problems their team encountered, trying to position themselves based on their skills and expertise relative to their colleagues, or sometimes just knowing how to ask the right questions.

Excerpt 8

Ximena: I wanted to do everything perfect and I don't want to make any mistakes, and it was really difficult because you're new (...) And some tasks were like horrible, not nice, like oh I need to print this report. Or oh, we need to buy some stuff, I would go and do it. But then, I remember once my boss sent me to a meeting with like three different groups of agencies, and they were going to present to us what they had been working on, and he sent me to decide, alone. So I remember it was a long table, they were all sitting down, and this little young girl came smiling, hello, and it was really strange. So, on the one hand it was really like embarrassing, like they had left me their main chair, and on the other hand I felt really empowered, like wow, he trusted me to come here because he knows that I can do it.

So it was like okay, let's do it. I can do it. I didn't have the faintest idea. It was really terrifying. I mean it was like the most terrifying experience ever. I actually was like nodding and I was thinking I have to say something, like I have to say something intelligent and I have to complain about something, and I didn't know really what to do. It was like more intuitive, like well, I will act as if I am a senior person. What would he do? I was thinking about that. Or what could I do as a senior person? So I learnt quite a lot about that. It was really uncomfortable and I think that was good.

In this excerpt Ximena talks about some of the challenges she encountered in her internships.

First she describes the uneven nature of work in her internship – from doing small menial tasks to sitting in a meeting, representing the company and making decisions on behalf of her

boss. In the latter case she describes a situation in which she felt 'strange' and 'embarrassed' about being out of place, but at the same time 'empowered' and 'trustworthy' due to being given the responsibility. She described resolving this ambivalent situation in which she found herself by trying to put herself in her boss's shoes and act the way he or she would in a similar situation. She thus used a resource she perhaps did not know she had. It took her boss's absence for her to realise she could 'think as a senior' to solve workplace tasks and problems. In this excerpt Ximena exemplifies several important dimensions of the horizontal expertise development such as i) how expertise development entails working through the emotions of being a boundary-crosser, peripheral participant, and a novice (e.g. the emotions of shame, embarrassment, fear as well as emotions of pride and fulfilment) ii) the need to recontextualise the knowledge and skill she learned at work (e.g. by working alongside her boss) to solve a concrete problem such as representing the interests of her boss and her unit in a meeting.

Excerpt 9

Bao: I think in the beginning I struggled with making suggestions because we were developing something and there was like a week where I just thought we were doing the wrong things but I thought they must know better than I did, and it turned out, they didn't, but it took me like a week to like say 'hey, I think we forgot something'. So it was a bit, I trusted them, I was too shy to speak out.

Tom: It's like the people who have employed you, a lot of the time they're still, just other people, and you have to get used to that because sort of you think 'oh they're all professionals' and 'they all know what they're doing', but they don't, they don't (laughter). There's plenty of people who you will work with in internships who are actually less competent than you despite the fact that you're like an intern (...) When you go into a place you have to learn not to be intimidated because not everyone's like terrifying and scary like they seem to be at first because but you can bring them up and be like 'no, no, that's not it' (laughs) and it's okay.

Kiersten: Yeah I think I had a similar experience. They actually have a shortage of electronic engineers, so I actually had, at some point like part owners would come up to me and ask me to explain their circuit diagrams to them, because they'd been given to them by suppliers, they had no idea what they did. So he was like 'do we need all

*this or not, or is he just selling me this when we don't actually need it?' (laughter)
I'm like 'I'm an intern, I shouldn't have this responsibility'.*

In this excerpt Tom, Bao and Kiersten also discuss some of the challenges they encountered. Bao is the first to introduce the topic of being too careful and 'shy' to suggest to colleagues during an internship that things have gone wrong. Tom takes up the topic introducing his insight about the expertise of other people in the company. He makes a distinction between employees who appear to know what they are doing when in fact this may not be the case and those who are actual experts. For him, this distinction seems helpful, because he describes the context of not allowing oneself as an intern to be intimidated in the workplace – because not everyone is intimidating in terms of what they know. Huong gives an example of another internship he did. He incorporates Tom's suggestion and says how indeed in the second internship he was perhaps the only one in the company who had the capabilities, due to his background in electronics, to address certain elements of the problem. Kiersten adds to this argument by giving a similar example in which her background in electrical engineering put her in a position to explain things to employees in the company. She also thematised the issue of responsibility that comes with being the 'expert intern', 'speaking out' and not being intimidated. This excerpt suggests that interns at times need to reconcile competing demands of, on the one hand, being a short-term novice practitioner and, on the other hand, contributing to work with their knowledge and skill on beginning the internship. From these competing demands interns learn about their expertise and the expertise of the colleagues.

Excerpt 10

Nina: What was really helpful [about her degree] was that I was more aware of creating the impression on the reader. So it was being aware of how I wanted the reader to respond to the text and therefore crafting my writing in such a way to create that response. So, it was quite focussed on being a bit humorous, so being witty and kind of making it an enjoyable experience for the person reading it, because I had an understanding that that would make them respond more positively and be more

engaged. So I think that was really good because it wasn't just trying to transmit information in a deadpan way. I think because when you're reading a text you're always thinking about 'how am I responding to this text? Why?' and you're looking at what the writer is doing to create that response in you as a reader. So, I suppose, just trying that out for myself as a writer and thinking about what response I wanted to create. I think that's just sort of what I worked out.

In this excerpt Nina explains how she drew upon her thinking from her degree in English language and literature to attune the texts she was writing for the charity she was working in. She explains how she found the way she was taught to think about the relations between the audience and the writer in her degree useful in considering how she should create her message to the audience of her work in the charity. In the parlance of the framework I suggested Nina learned to recontextualise a resource from her degree (e.g. writing as addressing and engaging an audience) to perform better work tasks.

Insights about the relationship between education and work

In this section I will present the variety of ways in which the discussants thematised the relationship between education and work. As I will demonstrate, for some discussants the two practices are entirely separate, whereas for others they are linked in different ways. Some participants saw their degrees as providing them with knowledge and skills that they cannot use at work or that they can only tangentially use (e.g. some more general skills and knowledge), whereas others argued that they could see the continuity between the domains.

In the following excerpt Stella and Dang discuss what they saw as the contribution of their degrees:

Excerpt 11

Stella: Economics in general is a highly theoretical field of study (...) what you actually learn (...) it's models that are quite detached so you can't apply them. So I wasn't able to use any of my knowledge but when it comes to skills, yes, I've done a lot of obviously maths during my degree which is always useful (...) I felt more

confident than I otherwise would have been, but when it comes to actual knowledge of economics [necessary for her internship] most of my knowledge of debt and inflation is from newspapers, it's not from my degree because that's what economics is like (...)

Dang: For me, the technology changes quite rapidly, so the university can't provide you with everything in the technology area. Without any fundamental knowledge the company does not want to hire you and let you learn to walk before you can run, they just want to hire someone who can run and who has some fundamentals in this area. So, you may have to go to one job and code some completely new language but in the new language you have the programming language you learned before. The university can't prepare you for work but it prepares you what you need to know before you can learn more at work.

In this excerpt Stella and Dang discussed how their degrees helped them perform in an internship. Stella argues that she saw no connection between the content of her degree and the world of work she was engaged in. The resources she did draw upon are the mathematical skills she developed through her course and her reading of non-academic economic literature. Dang, on the other hand, found that the content of his degree was necessary in being able to pick up work-related skills and knowledge that are always changing in the domain of technology and programming within which he is working and considering a career. This suggests two different ways in which Stella and Dang were re-positioned in relation to their degrees in the aftermath of boundary-crossing to internships. For Stella, her degree in economics enabled her to subsequently develop and recontextualise mathematical skills (but not domain knowledge) and it opened up possibilities for her whereby she could feel 'confident' pursuing certain tasks and career trajectories. For Dang, recontextualising and building on degree-related knowledge was part and parcel of developing his expertise in software engineering.

Excerpt 12

Andres: I studied communication, so I had a lot of sociology and so much anthropology, like so many theories and I was feeling awful because I was studying them for the exams, and really trying to get a lot of information about history, past.

And at work they were asking me more like 'do this now, look more in the future, like how are we going to innovate, what are other companies doing. That I never learned.

In this excerpt Andres discussed the relationship between his degree and his first internship, comparing the requirements and orientations of the two practices. He imitates the voice of the employer as a way to show a gap between past-oriented disciplinary knowledge and the work requirements to create something new, that does not exist yet ('innovate'). In this respect his position is closer to Stella's with respect to the gap between skills in educational knowledge and work requirements. In other words, for Andres, like for Stella, some of the available conceptual resources from their degree have not born relevance for their work practice yet. Moreover, for Andres, the insight that education and work activity have different object motives in which the former is, according to him, oriented towards understanding the past and the latter towards anticipating future also results from his movement between education and work.

Excerpt 13

Manuel: The only problem with this subject is (...) that you have academia stepping in and saying 'so this is how you do consultancy'. Consultancy can be going to the doctor and you are consulting the doctor' and you're like 'yeah but that's not management consultancy', and they make you do essays following their idea of what it was like to work and I think (bleurgh noise). The distance you have (...). I mean in The States it's really cool because they try to involve the corporations and private institutions, private investors as much as possible with the universities, which to some extent is good, to some extent is bad, but that's debatable. But you get a bigger, better taste. But when you get someone who has worked in academia but has never actually gone, you know, a job in consulting and they try to make you write an essay about some sort of sector which you might even know more about and you have to agree with them when you know that you're the one who's right, and that's incredibly stressful.

John: Yeah the only thing that I realised was that we should, I should do more practical stuff even if it's like in my own spare time, just like little projects, and that the best way you learn is by doing. But other than that not much if I'm perfectly honest. Like I still think that the theory is important and I don't think that like they should change like the amount of theory we do or anything like that (...) it's just that we also need to be able to apply those skills. But perhaps, it's definitely better to have

a broad theory base and then go to whatever job and then learn your practical skills there (...) I'm not a fan of the soft skills side of it at all, like I just don't really think it's necessary.

Manuel, who has experience in consulting, explains that although the course appears to entail solving a real world problem the way to go about that in education is very different from the work setting. For Manuel workplace practice and educational practice, even when they concern a similar problem (e.g. consulting an organisation), are different and do not necessarily intersect. Manuel, as a result of his internship experience and a year abroad in the US, has come to see education and the workplace as two separate activities. This is reflected in the latter quote in which he describes how after the internship he decided to explore his interest through his degree and through independent learning rather than using his degree to obtain employment. His new position is that he will pick up work-related skills at work through training or learning-by-doing. Put differently, Manuel has learned that the object of an activity powerfully shapes the meaning of goals, actions and tasks and that hence the same action of consulting in education as opposed to work are two different actions.

For John the experience of work led to him to consider supplementing his degree knowledge and skills ('I still think theory is important') with more practical activities. His realisation about his degree revolves around developing capabilities to solve problems in practice through working on practical problems ('learning by doing') and applying what he has practised. His comment on soft skills might relate to Darta's earlier comment in the discussion (not included in the excerpt), namely that she could not see parallels between the theory in her degree and the work practice she encountered in her internships (this is a similar idea to that expressed by Stella in the previous excerpt). In relation to horizontal expertise framework John has recognised that he needs to develop both practical and theoretical reasoning in order to solve problems in the workplace and in order to be able to infer what follows from theory and practical knowledge for problems in hand.

Excerpt 14

Mo: When we are taking our education, we all learn something but it's by topics, it's very clear but in real life it's always very ambiguous, we need to sort out the other elements of the case to have this problem to be solved, so I think it's education that provides you with the basis to enter into practice and it is education who helps you to know how to do in practice but I think it's practice, what makes you to learn deeper about what you have learned because even for me, it's the same, when I do some practices, I say, 'Oh wow, this is why I've been learning things in this way', because when you are learning something, it's some principles we don't see stuff deeply like the way you do in practice.

In this excerpt Mo contrasts how in her degree the world of law was depicted as 'clear' and organised through topics and 'principles' as opposed to the law she experienced in practice during her internship as 'always very ambiguous'. She views the skills she gained in education as necessary to enter the world of practice and understand it. However, according to her, these skills and knowledge are 'deepened' when applied in practice, and the resources which she brought into the practice ('the principles') are, through work experience, being seen and understood in a different light and from a different position. In this sense she seems to share a more general position with John and Dang, in particular that what was useful for their work in an internship was their degree knowledge and skill, but only when supplemented by on-the-job learning and development. This suggests that boundary-crossing and developing horizontal expertise entails learning that it is important to recontextualise prior knowledge by modifying it, building on and extending it.

In the following excerpt the discussants took an example of 'group work' in education as opposed to working in teams at work to explore the differences and similarities between the two activities.

Excerpt 15

Tom: I'm not sure how it is in engineering but like at the moment I find that [the university] pushes group work a lot and like a lot of modules are heavily structured to do group work, and other times in the internships they'd sell you like 'oh you're going to be working in teams, but I think that's much different than in university where you sometimes work in teams, and there [at work] you think that there is a hierarchy but then you're supposed to have an open discussion and that's kind of creating a bit of conflict I think.

Bao: Yeah I think the working in teams part is also something that I found very different in the internship and what they tried to teach us at [the university]. So for the first internship it was the engineering people and the computer science people, that was the best team I ever worked with, because everyone was there to just get the good experience and everyone was working. But say last summer, they [the university lecturers] told us 'you have to go or', so everyone came but no one did any work, so I guess it seems like an internship where you work with people, and actual group work opportunity rather than what they try to teach us.

In the above excerpt Tom and Bao discussed the differences they see in terms of 'group work; or 'working in teams' in education as opposed to work. For Tom it is the hierarchy of the work context that makes group work very different from when it is used in education, where the groups consist of his peers. For Bao the difference lies in how the team is selected.

In contrast to this, Ana stated that working with other students on a project was useful for her later work in an internship in a museum.

Excerpt 16

Ana: My group work experience was quite good, I saw the ways in which people go about not doing their work or what they supposed to do. Their attitudes when things change or someone else poses an opinion that might be different to theirs. And you realise that these things happen in real life and they're probably the most real thing that you'll come across in a university setting because when you don't know people you are teaming up with which is almost always the case in real life. So group work skills are pretty much the most important thing I learned.

Here Ana argues that these 'interpersonal skills' are something she can use in situations where she is collaborating with a variety of people who may relate to work and to other team members differently. She views her 'group work experience' differently from Tom and Bao, in terms of understanding and managing interpersonal frictions when collaborating on a

common task. Unlike Tom and Bao, who saw group work in education and work as two different activities, Ana suggests that there are aspects of group work which are applicable to situations both at work and in university. In other words, Tom and Bao thematise that the meaning of teamwork differs in education and at work (e.g. power relations, compositions of the group) while Ana suggests that by participating in a team at university she learned something valuable that she was able to recontextualise to work context.

The effect that internships have had on their degree and occupational plans

The main theme that emerged from the discussion about participants' choices and plans after the internship is that the internship repositioned the participants (i.e. they saw the world in a different light and developed a new perspective) in relation to their degree, to workplace practice and to their self-understandings and future-plans. This relates to Akkerman and Bakker's (2011a) "reflection mechanism" of boundary-crossing in which boundary-crossers enhance their perspective of both the old and the new practice as they try to make sense of their differences and similarities.

Internships repositioned students in relation to their degree

Using the following excerpts I show how the experience of internships repositioned the research participants in relation to their degrees.

Excerpt 17

Chrissi: [Now] when I have a problem I think about it and I can imagine how that would feed into something, so I'm really interested in it and put a lot more work in it, also I'm more behind the work. But then, when I realise 'oh this task, I'm never going to see it like this' because I know exactly that someone else is going to do market research, and there's always going to be a whole team of market researchers so it's not one of the necessary skills that I need.

Manuel: It [the internships + the year abroad] made me reconsider everything. I knew instantly that it didn't matter really what I studied at uni. Like as long as I had some sort of credential or some way of justifying that I would be good working for a team in some sort of company I knew they would teach me the rest. So I just started doing things that I really wanted, I was like 'okay I'm gonna literally going to study what I like, I'm not going to bother about so much like during my degree about getting a job at the end.

In the above quotation Chrissi said that her internship made her begin to perceive her degree through the lens of the engineering practice that she was eager to go back to. For instance this made her less stressed about her university work and more attuned to the issue of the relevance of what she was learning at university to the world of work. Manuel confirms that his internship repositioned him in relation to his degree, although he drew different implications from it than Chrissi did. For Manuel the degree changed from being a resource for transition to work and developing his 'professional thinking' to becoming a resource to develop new knowledge and interests that are not work related.

In focus group 2 an excerpt shows how the three participants develop their thinking about the importance of their degrees, thus enabling them to have varied professional trajectories.

Excerpt 18

Tom: I mean I've varied quite a bit with what I've done, so it's very different to what you guys do because you study an engineering programme, and like the internships I didn't like it that much and then I also kind of changed what I studied. I was starting out being quite interested in the whole management consultancy thing, and then I worked in an environment where there's basically only like McKinsey graduates [...] and I just didn't feel that we created any value to anyone and that the whole expertise that these guys had I didn't feel like it actually did help anyone in any way. So reorientated myself because at the beginning I did a little more subjects that were sort of geared towards that, like I did some law modules and some economics modules and now I'm doing completely different things. I'm doing only neuroscience and psychology and it was kind of a big change, and I think that was partly because I didn't like internships and I thought maybe I should do something more interesting with my life.

Kiersten: I think I would stick with triple E just because statistics-wise it's one of the degrees that you can get the broadest variety of jobs from. You can get into pretty

much anything with an engineering degree, especially electrical because you can branch into computers, you can branch into banking, so many options, which is pretty much one of the reasons why I chose it in the first place, because the more doors open the better really when it comes to uni, so yeah. No point changing the degree, just change the path at the end of it.

Bao: Pretty much the same reason I picked triple E.

In the excerpt above Tom describes how he changed the focus of his degree in light of his internship experience so as to ‘fine tune’ his trajectory in line with new insights and realisations about himself and the work he wished to do in the future. Kiersten extends this by adding that, for her, it is important that her degree allows her to explore many professional trajectories in order to find the right one. However, she also rebuffs Tom’s suggestion that an engineering programme does not allow for variation. The possibilities of a degree affording different and varied professional routes is an underlying theme. Variety and expansion of possibilities seem to be the important degree-related values in this topical episode. What is evident here is that boundary-crossing enables students/interns to fine-tune the object of their activity of transitioning into work and into a career. In this context internship and degree become resources to pursue this particular object/motive.

Excerpt 19

Ximena: [if] you don’t have experience working, so it’s like you are a little kid learning, you know, like receiving information. And the difference is [if] you already have experience so you already know how the world works and how you can apply things, at least you have connected with other people and you understand. So, what you will learn, theories for example, you will be able to process them differently, because you can connect them to what you already know, so for me that’s much more useful, because I’ve had management experiences and now, for example, I’m learning the five steps of good management, and I say ‘oh, I was always missing the fourth, I never used it’.

Sara: Yeah I always, the whole thing that we are learning in the master, I am always thinking of relating with how I’m going to implement these kinds of knowledge in my work, or how I can interrelate the different topics that they are teaching us, but I think that I was expecting that more students who have masters have more background in the work. Some of them, they just finish their degree. I think this is some

disadvantage, because you want to learn from everyone, but you want to learn how to apply all the knowledge in our own work, and if it is someone that doesn't work before, he's only saying opinions like without any fundamental experience.

In the excerpt above Ximena and Sara, two MA students with extensive internship and work experience, discuss what sets them apart from their course mates who have no work experience. They talk from the position of work practitioners and professionals to set themselves apart from the 'others' (the less experienced course mates on their MA degrees). They see their degrees predominantly in terms of professional training and the deepening of professional judgement (e.g. by learning from other experienced colleagues), contrasting this to the educational knowledge of their colleagues, which they see as surface-based and not grounded in professional judgement. In other words, Sara and Ximena, like Chrissi in the previous excerpt, have come to talk and think about their degree experience predominantly through the filter of the workplace practice they have become familiar with.

Re-positioned in relation to their occupational pathways and their self-understandings

In this section I will discuss excerpts from the dialogue in which participants discussed what has changed for them after the internship regarding their occupational pathways and their self-understanding.

Excerpt 20

Tina: I chose engineering because it was pragmatic, because my perception of it is that it opens doors, or it doesn't close any doors. After I did the lab based internship I knew I didn't want to work in that [...] I mean I didn't want a job where I was in a lab all the time. Evidently I'm not becoming an engineer because I'm doing development now [...] And internships I think make you more comfortable and more confident to try out jobs that you might not think you would have tried in the first place. I think the greatest take away from internships, is knowing that different organisations work differently and then your ability to adapt to different organisations. [...] In terms of field, sometimes that's what it boils down to. Sometimes the internship tells you that you don't want to do that. Which is fine, it narrows down the options.

Sandra: For me it has made me more critical of our higher education [...] and at the same time I'm more hopeful about changing that, so I'm still planning on teaching in universities, I will do that in a completely different way. I would tell my students, 'OK so go to schools, go to the streets, do different things' [...] And these are all internships that you can do but you can create more than that. And it has prepared me more to be a better professor or lecturer.

Ana: The more experience you have, the better off you are. Even bad experiences also teaches you about expectations [...] It sounds really selfish not to want to help people, which is obviously not true. But it [the internship she was doing] felt like not learning anything in a way. You could see the impact that you had on the students that took part in the programmes but you just did things that you didn't really put much thought into them. So I think that's why I don't want to do that [...] I think you have to be a certain kind of person to work in that environment and I would just like to do something that is more [...] That expands or broadens my horizons.

This excerpt followed a discussion about the degrees the participants were doing and what they would change in their degree in light of their internship experiences. In this excerpt Tina responds to Sandra's earlier more general claim that students are not sufficiently informed about potential occupational pathways before or during their degrees. Tina confirms this with an example from her own experience, in which, through internships, she realised that the trajectories her first degree afforded her were not the professional trajectories she wanted to pursue. She then changes topic to talk about internships from a more impersonal position and 'recommends' the internship as a way to correct one's educational and professional trajectory ('sometimes the internship tells you that you don't want to do that'). In addition she made the point that internships are valuable because they help develop an understanding of where one wants to move next. Tina adds that internships are also valuable, because they build confidence to set and pursue new goals. Thus, the experience of doing an internship helped these focus group participants to, what I called previously drawing on Beach (2003), "negotiate their identity" and decide which professional identity they want to subscribe to and pursue next.

Sandra argues that the internship experience changed her perspective on the extent to which her degree prepared her for professional work. From the previous discussions it was clear that she had a strong disciplinary identity as a historian and she was about to embark on a PhD in history. In this excerpt she imagines how her experience could inform her future practice by drawing on what she would say to her future students about moving into the domain of work during their degrees.

Ana recaps the discussion and shares her own experience of interning in a charity and learning that she did not enjoy working there. She also shared a conflict she may have had, namely that, although she shared some of the ethos and values with the company, such as wanting to help people and impact their lives, she still felt like the organisation was not right for her. In other words, Ana's self-understanding could not be validated or extended by continuing to work for the charity she interned in.

Excerpt 21

Stella: I was quite disillusioned with the fact that diplomats don't really do anything, they're not creating something, it's mostly giving people Visas, at least that's how I felt in the aftermath of the internship. But now I've been thinking about it more and more about diplomacy in general and how it is important, and maybe you don't get to be that person who gets to negotiate something, maybe you end up as the person in front of a desk, giving people visas, but I think I'd rather be surrounded by people than be cooped up in my office doing some maths, it's my personality as well. So yea, even though it threw me off initially, now I think that is something I would like to do. I think any sort of job that you're doing what you have to bear in mind is that the ultimate goal/the whole purpose of what you're doing is net positive, when you group it all together you are doing something of value.

In the quotation above Stella is working out how she feels about a potential occupation in diplomacy in her home country. She comments that she's been reconsidering the occupation she initially dismissed after the internship, explaining her initial dismissal of working in diplomacy in terms of a wrong-headed perspective she had with respect to work – looking at

the mundane nature of daily tasks rather than the overarching goal of diplomacy. For her the goal is ‘bringing people together’ and ‘negotiating’, and this type of work is contrasted with working in administration. However, even the mundane aspects of her potential work are positioned more highly than an office job with a lot of ‘maths’. Here she is hinting at an earlier dialogue in which she went for an interview with a bank, where at the interview she was told that she was a good candidate but that it was obvious she was not interested in banking. When explaining her aspirations she argues that her ‘personality’ was the reason for her finding diplomacy more appealing. Later in the discussion she describes a situation of not knowing the occupational pathway she wants to pursue as partly due to feeling she does not have a lot of choice in the current economic climate. This excerpt illustrates complex negotiations that students/interns need to perform when deciding where to move next by taking into account their preferences, identity, and available opportunities.

Contrary to Stella, who is still in the process of thinking over her options and decisions, in the following quote Ximena describes how she realised what occupational pathway she wanted to take upon completing an internship.

Excerpt 22

Ximena: I had my final feedback, I was chosen to stay, and I felt very free in saying ‘thank you very much but no, I’m leaving.’ I learnt that that was no what I wanted to do. I was working in marketing there and I realised it had too many numbers and I looked at my boss’s life and I didn’t like it at all, so I said in future I wouldn’t like to be in that position. I realised working there that I enjoyed the presence, well, the company of other people that were in the sustainability team, and I felt more related to them, and talking in the free moments I realised that I was really interested in non-profit organisations. I even remember having lunch with them and oh yes, that’s what I would like to do [...] And then I decided to start working for non-profit organisations, where my work would be more valued and where I would have like a direct impact on things. So I decided to change with courage [laughs].

I started, I remember calling non-profit organisations. I remember one for example, I said ‘oh you will have an event in two months’ time, maybe you need help, I can

volunteer, I'm a professional, I've just graduated'. That's how I started, and I started networking and connecting with different organisations, so that was really nice. [...] So it was really frightening for me, but thanks to all the volunteering activities that I had done and all the experience I have learned and connected with people that I got that job.

In the excerpt above Ximena describes how she learned that she did not want to stay with the company she was interning in for almost a year. She gauged her potential occupational pathway by observing her boss's positions and imagined her own future if she was to aim for a similar position and occupation to her boss. The internship also enabled her to gain an insight into the occupations of her colleagues in other departments. She described how important it was for her to meet colleagues from a different team that she 'enjoyed' and 'felt related to'. It is through contact with these people that she made a decision to redirect her occupational trajectory from her large international organisation towards a non-profit organisation. Later in the discussion she described the importance of contacts and networks created in an internship as a way to 'connect' with an industry, 'learn about herself' and discover 'what do I like?' Ximena, who discovered she did not enjoy working in a corporate culture, described how the transition to working for a non-profit required her to be very proactive, volunteer and network extensively before obtaining a job in the non-profit sector which she wanted. She describes having to work her way into the new field that was different from her old one (corporate communications). This involved calling the organisations she was interested in and offering to volunteer for them as a graduate. She also highlighted, like Tom, the importance of networks and connections to gain a position in the non-profit domain. What is later revealed in the discussion is that Ximena left the non-profit field to work in corporate social responsibility before embarking on her MA degree, because she realised this was her 'dream job'. This excerpt shows another angle of identity re-negotiation as occurring relationally by working alongside others and deciding whether colleagues can be role models or indications of futures selves or not.

Excerpt 23

Nina: For me, it was really good to write in a different way [in an internship] I was writing articles for newspapers, and it gave me kind of a confidence to feel like I was capable of doing that, and I feel less worried about going out after my degree because I've had experience of being in that world, and enjoyed it, and succeeded in what I was doing, so it's really positive. [...] I think that by realising the applicability of what you're doing to other areas kind of empowers you to realise that you can do them. Whereas, for example, the friends I have who are doing the same things as me, day to day, but have this fear of graduating, it's like they haven't realised that what they they're doing right now is learning skills, and it is preparation by they see it a something completely new that they are about to be confronted. It gave me confidence to assert myself more in university life [...] now I'm part of [university journal] and I do quite a lot of articles for them.

In the quotation above Nina talks about how doing an internship made her more confident in her capabilities to write for different contexts and audiences. It also helped her realise that what she was studying at university was not entirely detached and separate from the world of work. This gave her confidence to be less worried about employment after her degree, but also the capability to apply her skills to work made her take on more activities and challenges during her degree. For example, she mentions writing for the university journal as something that required her to address yet another new audience and thus continue developing her capability to write differently for different audiences. She distinguishes her position from that of her friends on the same degree, who seem to have a 'fear of graduating', because they are unable to see how their skills and knowledge could be used for a different job. According to her they are missing the insight that their skills are applicable and the capability to use those skills in the workplace successfully. In the parlance of horizontal expertise framework, having learned from boundary-crossing to recontextualise her degree-knowledge to new work domains, Nina developed a new perspective not solely on the world of work but on her degree as well. She began to think of them as related and mutually beneficial. In turn, this helped her be less fearful about graduating and looking for employment after graduation, and

this is in contrast with her peers who did not have the experience of moving between education and work (i.e. boundary-crossing and recontextualisation).

Horizontal expertise and the emerging themes

In this section I will make interpretive links between the emerging perspective from the focus groups and the main facets of the horizontal expertise framework.

Graduate horizontal expertise development

Horizontal expertise development, as my qualitative evidence suggests, takes place through the horizontal movement between different educational and work practices. None of the participants' accounts portray expertise development as a vertical movement of gaining more and higher forms of knowledge (Engeström 1995; Beach 1999) when moving from education to work and back to education. In fact, the practices of education and work discussed in the focus groups were often seen as unrelated (Darta excerpt 1; Stella excerpt 11; Manuel excerpt 13), complementary (John excerpt 13) or related in complex and nuanced ways (Mo excerpt 14). Thus, students' and graduates' movement between education and practices can be theorised as follows:

- (i) Moving between education and work as boundary-crossing

The data thematised what I called 'boundary crossing' (Chapter 5) in the following ways. First, the participants consistently depicted the challenge of making sense of the workplace and learning how to work in an internship. Second, participants depicted how their experiences of internship enabled them to develop a new perspective on both practices (education and work). Finally, they also discussed, at great length, how the experience of an internship (i.e. of boundary crossing from education to work in an internship) informed their subsequent trajectories (I will discuss this as part of the identity re-negotiation section).

What preceded the development of the new perspective is immersion in workplace practice and learning how to navigate the context in which the interns were participating. The concepts of co-participation in a community of practice, navigating the normative framework/space of reason and learning to work in an activity system are particularly pertinent to explaining the learning challenges that the participants describe. For instance the participants discussed the challenge of working on the periphery and having to ask ‘stupid questions’ (Manuel excerpt 4a), and being shy about contributing at work and developing confidence to assert one’s expertise (excerpt 9). They were learning how to navigate the workplace space of reason/normative context, but observing the needs of the work process and trying to respond to them (excerpt 7) by working relationally with others. They argued for the importance of other colleagues in order to be given access and trust to do meaningful work (excerpt 4a) and the importance of networks and contacts in order to secure an internship in particular industries (excerpt 5).

Second, in the aftermath of engaging with the boundary, in line with what Akkerman and Bakker (2011) suggested, the participants report developing a new perspective on the world of work and that of education, as well as how they relate to one another. For instance, some participants learned how to ‘read’ internship descriptions and decipher the intentions of employers behind them regarding the possibility of subsequent employment (Nina excerpt 3) or how to apply for internships that were not advertised (Tom excerpt 5). Especially in relation to education, the participants showed that their new experiences repositioned them in relation to their degrees. They thematised insights, such as work being more ‘future-oriented’ than education (Andres excerpt 12) and that education and work contribute to expertise development in different and complementary ways (excerpt 13). They also highlighted that actions such as ‘teamwork’, ‘project’ and ‘consulting a company’ have different qualitative meanings in education and work (excerpt 15).

(ii) Using prior learning through recontextualisation

The process of recontextualising or modifying prior knowledge to navigate the work practice (Guile 2010 2014) was also thematised in the discussions. I will explore the thematisation of recontextualisation through more detailed examples.

First, Chrissi (excerpt 4b) discussed how she learned through her internship to ask about how the task she was assigned to fit into the overall picture of the project. She gives the example of skills she developed in a degree ('calculating tasks') as, in the first instance, seeming incomplete, because she did not know 'why' she was learning the skills and what the purpose of the task was. She also adds how she learned to ask her manager about the bigger picture of the project and how her tasks fit into the bigger picture. In this excerpt Chrissi showed that she developed an appreciation of the mediating role of context (e.g. the purpose, the outcome of the complex collective work) when thinking about her own immediate tasks. Furthermore, she suggests she may have learned the importance of contextualising her prior learning.

The second account of recontextualisation is Nina's account of how she used a resource from her degree in English (text analysis and an orientation towards and the techniques of 'making an impression on the reader') and repurposed it in her communications internships towards the new audience, which required her to be 'humorous and witty' (excerpt 10).

The third example is the recontextualisation process suggested by Sara and Ximena's discussion (excerpt 19) which worked in the opposite direction to usual. As more experienced students pursuing an MA degree Sara and Ximena are using the insights from their degree to enrich and reassess their professional judgement. They talk about 'processing differently' their degree in light of their work-experience or 'always thinking of relating the knowledge with their work'. In other words, the notion of recontextualisation became part and parcel of

their MA learning experience. This corroborates the claim that recontextualisation is as much an aspect of expert work and performance as novice expertise (Guile 2011a).

One important aspect of learning in boundary crossing and recontextualisation is the extent to which they take place relationally. By working alongside more experienced professionals (Lave and Wenger 1991) the internship accounts show how valuable this relationality can be for recontextualisation of insights. For instance working alongside and learning how her boss thinks enabled Ximena to move from the sidelines of practice to actually using her prior knowledge more broadly (not just degree-related but also work-related) in order to address a task she encountered in a meeting (Ximena excerpt 8).

Finally, my qualitative data suggests that, more generally, the ability to successfully recontextualise knowledge and fully participate in workplace practice encouraged the participants to set new challenges, seek new work opportunities and strive for more challenging tasks and roles. For instance, Nina discussed feeling ‘empowered’ by learning that she could apply the insights from her degree to work and perform satisfactorily in a work context. This, she argued, is in contrast to the ‘fear of graduating’ felt by her colleagues, who had not engaged in boundary crossing (excerpt 22). Finally, Tina discussed how one of the most important things for her was how the internships made her feel ‘comfortable and more confident’ to move into new and different work domains. She then added that the most important takeaway from the internship is ‘knowing that different organisations work differently and then your ability to adapt to different organisations’ (Tina excerpt 20). Taken together, these two points suggest her understanding that organisations are normatively different (different underpinning frameworks) and require ‘adaptation’ of the person, but learning how to adapt successfully to their requirements encourages a person to engage in further boundary crossing into new domains. In the rest of the discussion Tina explained the

different normative frameworks predominantly in terms of cultural differences of organisations, due to her rich international experience.

(iii) Identity re-negotiation and the identity project

Analysis of the focus group data demonstrated that ‘identity renegotiation’ is relevant to the internship experience, because the participants discussed:

- Trying on different professional identities (internships as ‘feelers’ and ‘tasters’) and deciphering the meaning, value and lifestyle that comes with each of these,
- Deciding whether this is ‘for them’, whether it aligns with who they think they are and who they want to be (e.g. by looking at the societal values and meanings attached to certain industries, whether they want to be associated with these values, and whether the profession and the workplace are populated with ‘people like me’ or ‘people I want to be like’),
- Modifying their paths accordingly by using the resources available to them (e.g. choosing new core subjects, enrolling on an MA degree in a different field, looking for an internship in an entirely new industry).

First, the internships provided the focus group participants with an opportunity to ‘try on’ different professional identities and the accompanying meanings and values. In the data this was evident in the importance that the students placed on the overarching purpose of the work activity. This was also one of the factors the students seriously considered when thinking about whether the industry or the company was right for them (excerpts 18, 21 and 20). For instance, in excerpt 18 Tom discussed enjoying consulting work because of the dynamic and interesting work (i.e. he appreciated the tasks he was given), but at the same

time disliking the industry, because he felt that the overarching purpose of the work did not align with what he found important ('it did not help anyone'). In excerpt 20 Stella discussed how she learned to appreciate that what is important in a profession are not the immediate tasks and work *per se* but the overarching purpose and the value it creates for other people (e.g. bringing people together).

Second, the students used their self-understanding to fine-tune their trajectory and decide whether to refuse or accept work and education-related opportunities. For instance, focus group participants discussed how they used internships as a resource to help them clarify their self-understanding and to decide on the direction they wished to go in and/or their next educational and professional move (excerpt 20). The newly finessed understanding of what they wanted to do and become made them actively seek out those internship opportunities that were in line with their self-understanding (i.e. their current and future identities).

When identity-enhancing internship opportunities were not available or when interns did not have a clear understanding of who they wanted to become the young people showed a preference toward choosing those opportunities that would enable them to have more choices and opportunities in future. This was done by, for instance, deciding to work for less attractive companies or doing less interesting work for more well-known companies in order to enhance one's future internship and work opportunities (e.g. you can become more 'picky' with time).

8.5 Conclusion

In this chapter I argued that internships can provide a window into the learning experience of moving between education and work. I then showed that there is merit in a dialogic approach to focus group discourse. This is because positing that the focus group dialogue unfolds using

social knowledge of participants, enabled me to use the internship discussions to make statements about horizontal expertise development.

Thus in the previous chapter I showed how the surveys enabled graduates to develop an awareness of professional identity and expertise. This insight was unexplored within the dataset. In this chapter I evidenced the forms of social knowledge and representations that students and graduates discussed in the focus group as resources when transitioning to work. For instance, I showed that participants discussed how internships enabled them to develop a nuanced understanding of the employer's perspective and to use that perspective to inform their subsequent actions. In the next chapter I will bring together the insights from the quantitative and qualitative studies and revisit the horizontal expertise framework in the light of these joint insights.

Chapter 9. The learning dimension of graduate transition to work and horizontal expertise framework – integration and discussion of insights

9.1 Introduction

My overarching argument, which will be presented in detail throughout this chapter, is that there is merit in conceptualising the learning dimension of graduate transition as horizontal expertise development. This is because, in addition to conceptual reasons (i.e. the contribution of robust learning theories such as CHAT) there is quantitative (i.e. patterns in the data on first job experience) and qualitative (interns' lived experience of transition into and back from an internship) evidence suggesting that students and graduates develop 'horizontal expertise' when moving between the practices of education and work in an internship. Moreover, I will discuss the contribution my horizontal expertise has made for the CHAT community, graduate transition research community and mixed-method community.

In this chapter I (i) show how I have brought together insights from quantitative and qualitative research on the learning dimension of graduate transition to work using the integrated mixed-method principles and my mixed-method design, (ii) evidence how I drew implications about the synthesis of quantitative and qualitative evidence for the concept of graduate horizontal expertise development, and (iii) discuss the contribution of my horizontal expertise research for CHAT community, mixed-method community, graduate employability community and CHAT community.

9.2 The integrated mixed-method research framework and four principles of mixed-method integration

In this section I will briefly return to and fine-tune the integrated mixed-method framework I introduced in Chapter 6 in light of what I discussed in Chapter 7 and Chapter 8 in order to outline four principles of integration of quantitative and qualitative data for my study of horizontal expertise development.

The integrated mixed-method research framework is underpinned by three sets of mediating factors that I have discussed so far (Table 9.1). These factors are (i) the research design factors that I discussed in Chapter 6 such as the research problem, theoretical framework, methodology, including object of enquiry and unit of analysis), (ii) the research community factors related to the practices of the communities in which the researcher(s) are working and to which they are referring, as introduced in Chapters 7 and 8 such as social representations, spaces of reasons, speech genres and conventions and (iii) the argument-based research activity factors such as evidence, claim and warrant that are addressing an audience, that I discussed in Chapters 6 and Chapter 8.

Table 9.1 Mediating factors in mixed-methods social research

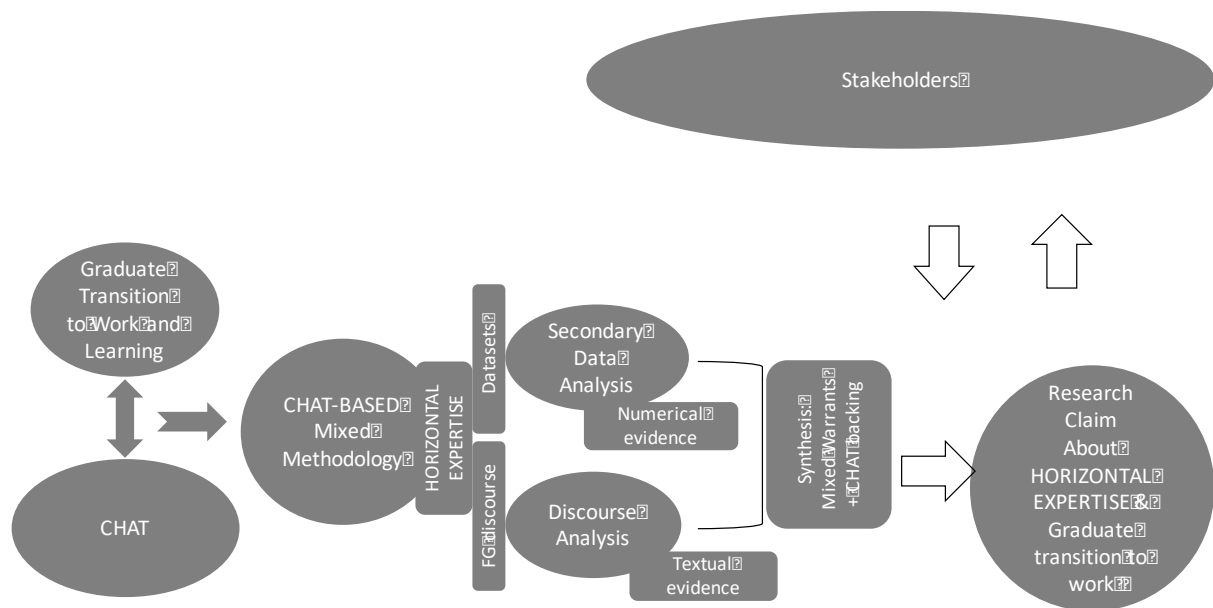
	Mediating factors of social science research explored
Chapter 6	Research problem, Theoretical and Methodological approach Object of Enquiry and Units of Analysis
Chapters 7 and 8	Implicit representations, spaces of reasons, speech genres and conventions of research communities
Chapter 6	The research argument structure: Claim, Evidence, Backing, Interpretive inferences and Stakeholders
Chapters 4 and 9	The purpose and goal of specific research projects: to convince stakeholders of its merit and of the type of generalisation the researcher seeks to make

Since Chapter 6 when I first presented the integrated mixed-method framework I discussed in more detail that the research practice of a particular community also shapes the way in which

researchers will approach the research problem, but also their use of theories and methods (Chapter 7). I described the practice of the community in terms of social representations of communities related to the research, and the spaces of reason – as conventions and norms of the communities. Moreover, I introduced the notion of ‘speech genres’, which denote the linguistic (spoken and written) genres that particular research communities prefer.

Third, in Chapter 6 I showed how various elements of research design could be recast as different elements of an argument with results and interpretation taking the form of the claim, methodologies and methods being a way of producing evidence, and theories acting as forms of backing. This approach places value on ‘interpretive inference’ or ‘generalisations’ that bring together the different elements of the research process into a unifying research claim. In addition to this, re-conceptualising research activity as social communicative and argument-based throws light on the dialogic dimension of research. I showed in Chapter 8 that one of the main tenets of dialogic approach is the assumption that thinking and communicating (e.g. in research) is responsive to and oriented towards various others (e.g. research communities). This responsiveness of social actors is evident in the framework that conceptualises research as a form of argument-based dialogue with research stakeholders.

Figure 9.1 The integrated framework for the analysis of horizontal expertise



Finally, based on the integrated framework, I will present how four principles of the integration of qualitative and quantitative data can be conceptualised.

1. Revisiting the object of enquiry to integrate quantitative and qualitative evidence. As established in Chapter 6 the objects of research enquiry are always both qualitative and quantitative, and thus the object of enquiry represents the point of intersection between the nomothetic and idiographic reasoning in a particular research project. This means that the integration involved in research claims in mixed-method design must refer back to the object of enquiry as the unifying element in methodology (see Figure 9.1).
2. Integrating mixed-method insights entails considering who the research stakeholders are and which research, professional or policy communities the research is addressing. Specifically, it entails asking, who am I trying to persuade of the merit and usefulness of my research-based claims? Who will find my research claims useful? This is the stakeholder principle of integration.

3. After identifying the stakeholders it is important to consider the traditions of reasoning and conventions of talking of these communities (see Table 5.13). In other words it is important to understand the ways in which the communities talk, represent and reason about the phenomena related to the object of enquiry of the research. It is important to align the backing, inferences and ultimately research claims with these traditions and conventions in order to make the research claims understandable and persuasive and to enable the communities to judge the merit of the research claims. This is the alignment principle of integration.
4. The integration of mixed-method insights. Researchers should consider the purpose of their claims and the generalisations they wish to make – whether they are trying to convince the relevant stakeholders of the analytical merit of their conceptual models, if they want to convince stakeholders of the statistical generalisability of certain insights from the research sample to the population, or whether the stakeholders need to be convinced that the insights of the particular research context are also relevant to other contexts. This is the generalisation principle of integration.

In the next section I will use these four principles to revisit the concept of horizontal expertise as the learning dimension of graduate transition to work in light of the qualitative and quantitative evidence.

9.3 Horizontal expertise framework – integration of insights and implications for the stakeholders

In this section of the chapter I will draw upon integrated mixed-method design (Figure 9.1) to integrate my quantitative evidence (quantitative patterns about the experience of the first job of the internship group with horizontal expertise and the degree-only group without the

horizontal expertise) and qualitative evidence (discursive themes and topics about the experience of moving between education and work in an internship) related to research on horizontal expertise. Following the logic of the integrated framework I will first revisit my object of enquiry – horizontal expertise – and review it in light of the empirical evidence. I then draw upon the stakeholder principle to identify and address two different communities of educational researchers: the CHAT community on expertise research, the mixed-method research community, the youth research community and the graduate skills and competence research community. I will make an ‘analytic’ and ‘case-to-case’ generalisation and argue that the concept of horizontal expertise and the associated research methodology provide a solid model for understanding the learning challenges of graduate transition to work (the analytic generalisation). This model also describes the relevant experience of students and recent graduates and can be informative to other researchers and practitioners working on issues relating to graduate transition (the case-to-case generalisation).

Revisiting horizontal expertise and integrating qualitative and quantitative evidence

In this section I return to the main claims of this thesis and discuss them in light of the empirical (quantitative and qualitative) evidence I have gathered to support these claims.

So far I have shown that the conventional wisdom of skills and competence and the traditional qualitative and quantitative dichotomy in research (i.e. the ‘two gaps’ in the literature) are inadequate for explaining the issue that is at the heart of this thesis – the learning dimension of graduate transition to work. I have shown that current research on the learning dimension of graduate transition to work tends to focus either on (i) conceptualising learning as qualifications and skills and representing them as levels of education, years of schooling and psychometric assessments for quantitative research or (ii) on the lived

experience of young people making the transition from education against the background of larger economic (e.g. late post-industrial capitalism) or sociological concepts and categories (e.g. class, gender, ethnicity, identity) and representing them as qualitative accounts (e.g. accounts, narratives).

My argument is that what has been missing from both strands of research is (i) critical engagement with, and an analysis of, the learning concepts conventionally used to describe the learning dimension of graduate transition (i.e. skills and competence), and (ii) a general methodological orientation towards mixed-method research that captures both patterns of transition and the meaning attributed by individuals that underpins these patterns.

In order to address these underdeveloped features of the current learning dimension of graduate transition I have drawn eclectically on different strands of CHAT to develop my *substantive* argument, my *methodological* argument and my *empirical* enquiry.

What made CHAT an appealing perspective for my project was that it explicitly deals with the complexity of human learning, and, as I have shown, learning is the key element of graduate transition to work that is often neglected in transition to work discussions. In other words, the different strands of CHAT enabled me to make explicit the aspects of graduate transition research that previously remained hidden, such as boundary-crossing, recontextualisation and identity renegotiation (see below).

Therefore, I have introduced another notion to the learning dimension of graduate transition to work –horizontal expertise development. This model is underpinned by the assumption that learning is related to social practice, or the interplay between people, tools, norms and traditions (i.e. the ‘dialectical’ relationship between the individual and the context in which they act).The merit of the model is that (i) it is underpinned by theories of learning (e.g.

CHAT) and grounded in considerations of the concept of learning across contexts (as the process of recontextualisation of prior learning), (ii) it operates on a wider notion of expertise that encompasses both the epistemic and identity-related aspects of expertise development, (iii) it is based on the internship research (i.e. paid employment that students and soon-to-be graduates undertake during vacation time) which incorporates the key challenges of graduate transition, namely, learning across boundaries and recontextualisation of the insights from different knowledge domains, and (iv) it is supported by quantitative (quantitative trends in a graduate survey) and qualitative (discursive accounts of internship experiences) evidence.

My *methodological* argument involved demonstrating the importance of developing a dialectically informed mixed methodology for researching graduate transition to work as horizontal expertise. This was important because despite a mixed-method orientation of foundational figures, contemporary CHAT does not have a tendency to operate within a mixed-methods approach. I showed that some of the key mixed-method and CHAT-based methodological principles are the following. First, the research problem (i.e. the learning dimension as horizontal expertise) and research methods (i.e. surveys and interviews) are always both qualitative and quantitative.³⁷ I demonstrated this by showing how (i) in both survey and focus group methods there is a qualitative frame (e.g. models of skills and models of dialogue, respectively) that underpin the design and interpretation of the data and (ii) introducing the new ‘qualitative frame’ of horizontal expertise to the existing data can help extract and generate new insights from the existing quantitative data sets and from the qualitative interview data (see below). Second, the premise of the dialectical relationship between the individual and social planes enables mixed-method researchers to (i) approach their research participants as carriers of practice, even when they are outside of the immediate

³⁷ In contrast to this, the orientation of the researchers and the claims they wish to make in terms of their research being either qualitative or quantitative.

context of the practice, such as when they are reflecting on a practice with others (e.g. in a focus group reflecting on the experience of doing an internship), and (ii) make generalisations from both qualitative and quantitative data to overcome the conventional limiting belief that only quantitative research can be generalised. The principle enabled me to find a new unit of analysis of graduate transition (i.e. reflection on the internship experience) that encapsulates the key aspect of this process (i.e. working across and making sense of the boundary between the practices of education and work).

The empirical argument: Quantitative and qualitative evidence for graduate horizontal expertise development in an internship

The substantive and methodological arguments enabled me to design my own empirical enquiry of horizontal expertise. I employed a mixed-method design to research the learning dimension of transition as ‘horizontal expertise development’ of interns and recent graduates. The mixed-method study involved secondary analysis of graduate transition surveys (REFLEX) as well as focus groups and interviews with students and graduates in a higher education institution (University of London) who completed an internship.

The mixed-method study began with the re-purposing (or recontextualising) of the graduate survey for the purpose of researching horizontal expertise development. In the case of REFLEX, from the representative sample of graduates from England I selected a group of 126 young people who had found and completed an internship that was not offered as part of their degree (i.e. I excluded students who had work placement embedded in their degree) in order to find an adequate proxy for horizontal expertise.

The quantitative research strongly suggested the importance of boundaries between different social practices. It showed how the boundaries can act as barriers and how boundary-crossing affords opportunities to generate new meaning and draw new implications for actions (e.g. in

REFLEX). Finally, the quantitative data strongly suggested that the availability of learning opportunities at work significantly affects the construction of learner identities for recently employed graduates.

Specifically, the REFLEX data showed that 126 young people (i.e. individuals who had the opportunity to develop emerging forms of horizontal expertise) differed from their peers in the way that they gained their first job and how they perceived their expertise in that job. Mainly as a result of having had the opportunity to begin to develop horizontal expertise in an internship they subsequently chose employment that they saw as more relevant to their degree and employed their expertise well.

Thus, the quantitative data on horizontal expertise provided two ‘snapshots’ with narrow descriptions of learning challenges for a large number of individuals (i.e. 126 people and 244 people) and for two different points in time (2005 and 2013) that are, statistically speaking, generalisable to the population of young people in the UK within these two time periods.

However, what the quantitative data could not enable me to see is how students engaged with and made sense of the boundary between education and work, how they became ‘boundary-crossers’, and the implications of this engagement for their subsequent thinking and actions. In other words, it is the ‘how’, ‘why’ and ‘what for’ of boundary-crossing in an internship and the implications of this for subsequent work that were not available from the quantitative data. To uncover these aspects of the data I drew on qualitative research methods, such as focus groups and interviews.

The qualitative data suggested that the following facets of horizontal expertise development were hidden in the quantitative datasets. First, making sense of the boundary between education and work is a highly relational and iterative process. Students and graduates, by

working alongside and in dialogue with other employees, uncover the rules, norms and values associated with a particular workplace – both in terms of recruiting and everyday company practice. Furthermore, they are ‘in dialogue’ with their prior disciplinary knowledge and understanding and, in this way, are slowly developing an understanding of how they can draw on prior learning in the new context.

Second, the salient theme that is essential to graduate transition and that the quantitative data could not provide insight into was the process of graduate identity negotiation. This included, for instance, the students’ more general self-understanding, their degree-related learner identity and their professional (work-related) identity, which was afforded to the young people in an internship or in their first job. This negotiation took place against the backdrop of a general orientation of these young people to create professional trajectories that are in line with their understandings of who they were and who they wanted to become. This process also involved highly symbolic and relational work in which the students and graduates, through the observation of their senior colleagues and superiors, were making decisions about what mattered to them in a profession or a career, and what work related societal positions and meanings they wanted to align themselves with.

Finally, the two aspects of horizontal expertise (i.e. boundary-crossing/recontextualisation and identity renegotiation) are intrinsically related because, on one hand, the identity project of the individual (see below for a more nuanced distinction between ‘identity project’ and ‘identity renegotiations’) guides them to exercise their agency and choose from the work and internship opportunities that are available to them. On the other hand, the experiences of boundary-crossing and recontextualisation that underpin their successful performance at work affect what kind of goals they will set for themselves and which opportunities they will seek out in the future.

Thus, I showed that the learning dimension of graduate transition, conceptualised as horizontal expertise development, makes clear that (i) what is hidden in the quantitative literature is the struggle to develop expertise across boundaries, against the backdrop of identity renegotiations, and (ii) what the qualitative literature cannot locate is the extent to which the struggle with the boundaries between education and work and the challenge of developing expertise and identity is intrinsic to transition.

Taken together, the relationship between the qualitative and quantitative evidence and the interplay between their insights suggests (see Table 9.2) that the development of horizontal expertise in an internship entails the following.

Table 9.2 The synthesis of evidence and the explanatory framework (i.e. interpretive inferential links)

Explanatory framework	Boundary-crossing	Recontextualisation	Identity renegotiation
Qualitative evidence	Accounts of the benefit of internship as learning how to think from the perspective of employer about what a good job candidate and a good worker consists of	Accounts of how they have come to learn which aspects of their degree knowledge and understanding are relevant and appropriate for the context of work in an internship	Accounts of internships as tools to enhance an understanding of the professional domain in which the students want to work
Quantitative evidence	More likely to find their first employment through their network	More likely to say that their studies and the domain of work are related More likely to see their first job as demanding, but their skills as well-utilised	More likely to say that their studies and the domain of work are related (i.e. to see their disciplinary and first-job identity as a continuous process)

First, by developing horizontal expertise in an internship, the students and graduates gained a deeper understanding of the employer’s perspective on the graduate recruitment process and work. This enabled the individuals to better understand the cues in the recruitment process (e.g. how to interpret internship advertisements in terms of employment prospects and how

different recruitment strategies vary between different industries). Moreover, it enabled them to adjust their actions to secure better work opportunities for subsequent internships or jobs by, for instance, using the networks they had established. Being aware of the employer's perspective enabled them to better position themselves with respect to the labour market. This could explain why graduates with emerging forms of horizontal expertise were more successful in securing their first jobs through their networks and, additionally, the jobs that they found more demanding and rewarding.

Second, the development of horizontal expertise in an internship entailed learning about the norms, values and reasons that underpin the world of work. This provided opportunities for the interns to (i) reflect on the differences and similarities of their degree-specific expertise and expertise needed at work and (ii) devise new ways to draw on their prior knowledge and to contribute at work. This led the interns to reflect, consider and assess the role of their degree in their expertise and their future professional pathways. The rethinking of education as a source of expertise, in light of their experience of an internship, could be the reason why students with internships tend to see their degrees and their first employment as more aligned and related than their peers without an internship (as found in quantitative analysis of REFLEX).

Third, the development of horizontal expertise was situated in and driven by the process of identity development. The students used the internships to try out a professional identity and decide whether it aligned with who they were and who they wanted to become (i.e. their self-understanding). Moreover, the emergence of horizontal expertise was reflected in the ability of interns to be productive in the workplace and made students more confident about pursuing more challenging forms of work. Thus, the soon-to-be graduates fine-tuned their

pathways to be in line with their realisations (e.g. by choosing different modules, different MA degrees, different domains of work, applying for more challenging work, and so on).

Moreover, the quantitative evidence allowed me to see that the opportunity to develop horizontal expertise can be one of the reasons why students with internships assessed their first jobs more favourably than their peers without an internship. In other words, it suggests that one of the outcomes of horizontal expertise may be finding subsequent work that they are satisfied with (e.g. that matches their level of expertise yet demands new forms of expertise they have yet to develop). Furthermore, the quantitative evidence helped me understand that the opportunities to learn and develop (horizontal) expertise on the job were a powerful mediator for graduates-at-work as well. In other words, the available opportunities to learn and develop on the job were still a powerful mediator of graduates' self-understanding about their learner identity and of their ability to cope with novelty in the workplace. For instance, graduates-at-work saw their learning capabilities at work as a reflection of their actual learning opportunities at work. In other words, the real opportunities they had to recontextualise their learning at work and develop their horizontal expertise were echoed in their self-understanding of themselves as learners. These insights from the quantitative data require further qualitative follow-up work but point to the complex interrelationship between opportunities afforded to them and their self-understanding.

Thus, the interrelationship between the qualitative and quantitative evidence enables me to claim that horizontal expertise in an internship profoundly alters the way students and graduates think and act in relation to their employability and their future careers. In the next section I will consider the implications of these findings for the 'stakeholders' of my research – the CHAT community on expertise research, the mixed-method research community, the youth research community and the graduate skills and competence research communities.

9.4 The horizontal expertise framework and educational research communities

In this section I will consider the implications of my research for the (i) CHAT community and expertise research, (ii) mixed-method research community, (iii) youth research community and (iv) graduate skills and competence research communities.

Horizontal expertise framework and implications for CHAT

The key contribution of my research on horizontal expertise for CHAT community is that it goes beyond the recent work on transitions (e.g. see edited collection of Edwards and Hedegaard, 2014) by trying to capture the back and forth movement between education and work as well as the resulting changes in aspirations of boundary-crossers. This is what makes my account of transition and learning different from a well-known sociocultural account such as Beach's (1999; 2003) where 'consequential' expertise and identity development occur in an existing mode (e.g. students learn to become shopkeepers). The contribution of my research for expertise/identity development literature is that from the transition new identities, pathways and aspirations emerge that could not have been anticipated before (e.g. see figure in which I identified three potential outcomes of horizontal expertise development). In addition to this young people develop an ability to grapple with boundaries of knowledge domains and use prior learning through recontextualisation.

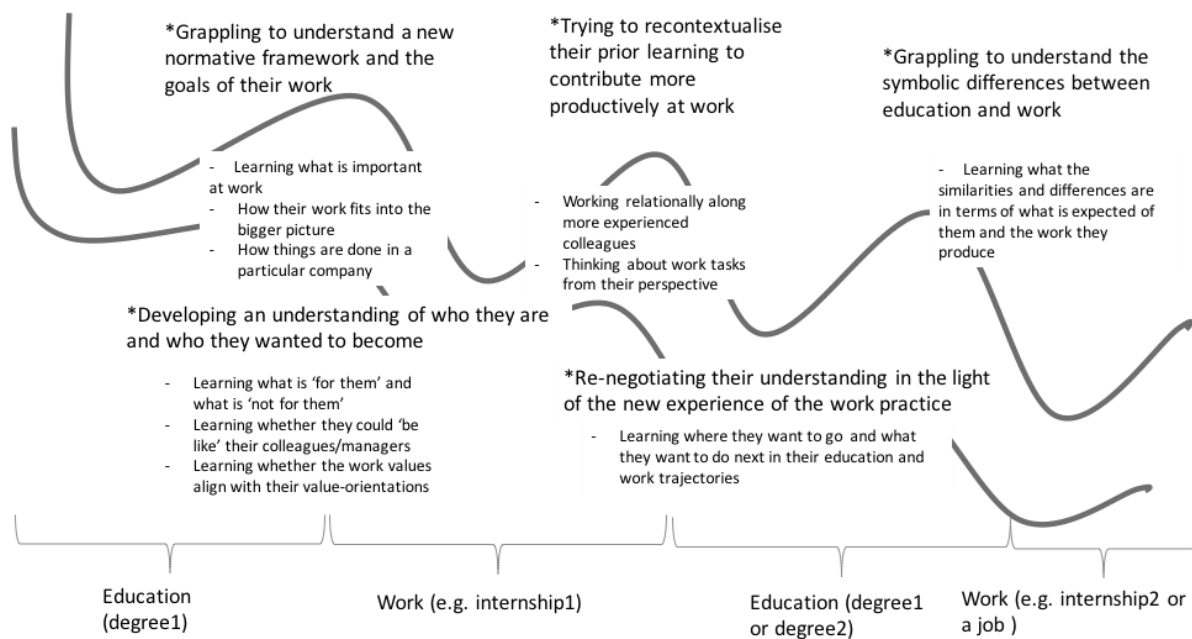
Below, I will, first draw conclusions for the horizontal expertise framework I have developed conceptually and empirically. Then, I will focus on showing the contribution of the identity-renegotiation or 'identity project' as an important factor of graduate expertise development and discuss how it can be developed further. Finally, I will reflect on the contribution of the mixed-method approach for researching horizontal expertise.

Revisiting the horizontal expertise framework

The horizontal expertise development, my qualitative and quantitative evidence suggests, captures the (ii) challenge of moving across the boundary between education and the world of work (Vasilyuk 1991), learning to operate in the normative framework of a particular workplace (e.g. grappling to understand what is important in their work, how their work fits into the bigger picture) and how to use prior learning in the new context, and (ii) the outcomes of horizontal expertise development in an internship in which the students/graduates pursue their aspirations by affirming that they want to pursue the object of their work activity (e.g. by deciding to stay in the company or in the same industry), modifying and fine-tuning the object by deciding to move into a related field (e.g. by working for a client of the company), or re-cast it and develop a new object in a different area (e.g. by deciding that an industry is not for them due to ethical concerns about the work).

As shown in Figure 9.2 regarding the challenge of moving across the boundaries of education and work, the qualitative data showed that by crossing and engaging with boundaries between education and work and learning to navigate the workplace-related normative framework individuals develop an understanding of the object of work activity and how goals and tasks contribute to an overarching purpose. Once they have understood this they are able to engage in ‘cognitive re-tooling’ and recontextualise their prior knowledge and learning and thus to contribute more fully at work. Thus, boundary-crossing and recontextualisation are closely intertwined because the former is necessary for the latter to emerge.

Figure 9.2 The process of graduate horizontal expertise development



The development of horizontal expertise comes into being through working relationally alongside more experienced others to develop a common understanding (see Edwards 2010) and to recontextualise prior learning (Guile 2011b). The relational work of interns refers, crucially, to the emergence of an understanding through collaborative work with concrete others and learning who their colleagues are, what they stand for, what matters to them and the implications of their work. As the qualitative evidence shows it is precisely through this relational work with concrete others that enabled some interns to make their first steps towards recontextualisation by, for instance, thinking from the perspective of their colleagues and their university teachers.

The importance of the relational work with concrete others evident in data suggests that horizontal expertise development could be augmented with reference to the inference-based dialogical mind (see Chapters 5 and 8). The inference-based dialogical mind suggests that people have the ability to (i) be attuned to other people's thinking, talking by anticipating what they will say next and what the response to that might be and in this way that learn to

operate in a particular space of reason, (ii) create meaning by responding simultaneously to new local cues, norms, meaning, and by drawing on their prior sociocultural knowledge and experience (see ‘double dialogicality’ and ‘heterogeneous thinking’ in Chapter 8) and (iii) think and infer what follows from inhabiting different normative frameworks and holding different dialogical positions for their subsequent actions. These features of the dialogic mind help explain why working alongside experienced others in an artefact- and reason-imbued context has rich epistemic potential for interns. Moreover, it helps explain how the experience of workplace practice ‘repositions’ students and graduates relative to the knowledge and understanding of their degree (see Guile 2009), by providing them with a new vantage point from which to think about the knowledge and skills afforded by their degrees. Thus, conceptualising the process of recontextualisation as a feature of the dialogic mind suggests why and how ‘recontextualisation in the wild’ (i.e. outside of the structured educational context or planned partnership between educational and workplace institutions) can still have learning potential and how this process could be nurtured in the workplace.

Finally, it needs to be noted that the different dimensions of the horizontal expertise are intertwined. As I showed in chapter 8 not only is boundary-crossing necessary for recontextualisation and identity development but also the ability to successfully recontextualise knowledge and fully participate in workplace practice reassures and empowers young people to seek more challenging work opportunities and to choose more challenging tasks and roles. In this sense, the effects of boundary-crossing and recontextualisation affect and inform what I will call in the next section the identity project and more generally that expertise and identity development should always be considered together.

Identity re-negotiation: The integrative, future-oriented and transformational potential of identity

My research suggests that the present and future oriented identity-project becomes a powerful mediator of graduates' participation in activities and their collaboration with others. Namely (i) graduate identities influence their participation in work activity during an internship by shaping how they relate to that activity and (ii) identity-projects represent objects of graduates' activity on the basis of which graduates choose to engage in new activities that will further their self-understanding and identity in the future.

The first point is pertinent for the discussion on the relationship between individual-level actions and collective activity in CHAT (Stetsenko 2005, 2016) because it suggests that individuals who make up and contribute to a particular work or education activity bring with them commitments, values and identities which mediate the way they take up the tasks and goals of the activity. For CHAT and activity theory in particular this is a significant point in two ways. First, because it suggests that it is important to focus analytically on the tension and co-production of individual level goals and motives and the collective purpose and motive (Stetsenko 2005). In other words in addition to the collective activity individual-level actions and their goals could be seen as powerfully moulding the object of an activity (Stetsenko 2005). Second, because the commitments of individuals make them oriented towards their future and powerfully shape their engagement with the present (Stetsenko 2016). In her 'transformative activist view' Stetsenko (2016) suggested an important mediating role of person's ideas and beliefs about how to lead a life and what kind of world one wants to live in in the future. Although she does not mention identity per se, a person's place and position in this world and life are arguably associated with one's commitments and this is an important mediator of how individuals engage with their present activities.

In my data this was evident in the following examples in which the students discussed how their self-understandings, worldviews and commitments shaped how they experienced their internship, including the societal purposes and values embedded in the work. For instance, some of the focus group participants discussed enjoying the consulting industry because of the dynamic and interesting work (i.e. work tasks and immediate goals to achieve), but at the same time being put off by the industry because they did not see the value behind the purpose of the work activity. Another focus group participant discussed how she realised that although she disliked the administrative tasks of her internship in an embassy she remained attracted to the work because she could identify with the purpose of the work, which was to bring people and nations together.

Regarding the second point, my concept of identity is different from what Beach (2003) argued because in his work identities are set (e.g. student and a shopkeeper) and the re-negotiation of identity is such that one transforms an old identity into a new work-related identity (e.g. a student identity is replaced by the shopkeeper identity). In my research identity-development results from moving back and forth across boundaries to carve out a particular trajectory and enhance identity-project. In other words, identity-projects represent objects of graduates' activity and internships and education represent sites to pursue this object. In the parlance of horizontal expertise framework identity re-negotiations are not solely consequential, resulting from boundary-crossing, as Beach suggested (2003) but identity development is a driving force for further cycles of boundary-crossing, recontextualisation and identity re-negotiation. For instance, my research participants discussed internships as opportunities to 'try on' different professional identities and the accompanying meanings and values (internships as 'feelers' and 'tasters') (see also Lundsteen 2011) and how this enabled them to develop their self-understandings and decide on their subsequent work and education trajectories.

Hence, further development of the horizontal expertise framework would entail conceptually developing the identity re-negotiation dimension of horizontal expertise by drawing on two concepts from Holzkamp's (2013) critical psychology which has seen a 'revival' in the English speaking world recently (e.g. the recent 2013 edited collection of his work): 'the conduct of everyday life' and 'life-interests'. Both concepts can capture the renegotiation process implicit in horizontal expertise because they suggest the present and prospective dimension of identity development.

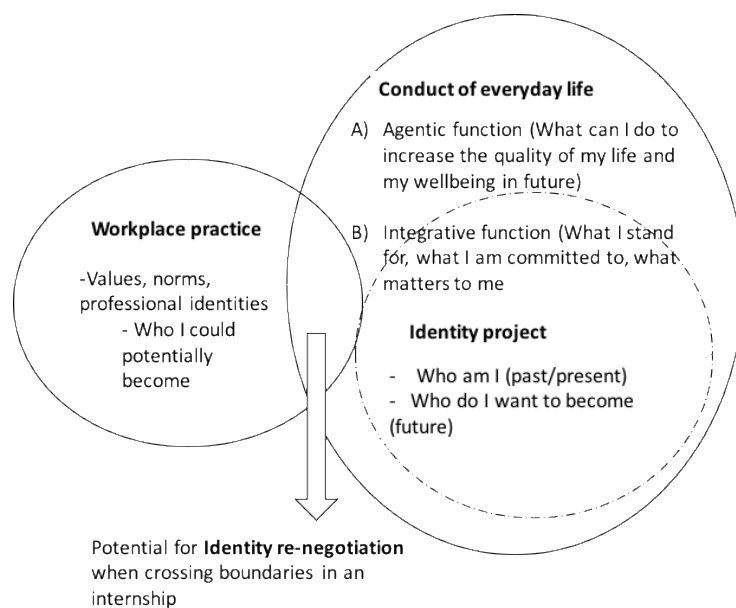
The concept of the conduct of everyday life assumes that (i) an individual trajectory is created through participation in and across several activities, (ii) individuals, as simultaneous co-participants in various communities, integrate insights and meaning across these different contexts into coherent wholes by developing present and future self-understandings about what matters to them and what they stand for, and (iii) the individuals pursue these self-understandings and concerns across several contexts and draw on self-understandings.

In critical psychology the 'conduct of everyday life' encapsulates the idea that a person not only 'conducts his or her life in a trajectory of participation in and across social context' on a daily basis (Dreier 2003:23),³⁸ but in doing so exercises 'the specific integrative sensibility and a way of sense-making' (Højholt and Schraube 2016:6) as 'many personal concerns are pursued across several contexts and in varying ways as people move from one context to another' (Dreier 2003:24-25). The conduct of everyday life is 'connected to the subject's conception of his/her history as well as future. It is related [...] to a broader imagination of how we see the world and what we want with our life' (Højholt and Schraube 2016:6).

³⁸ Although the focus is on individuals and their conduct of life they are seen as profoundly socially structured, such that the individual conduct of life is continually negotiated with other people (see Højholt and Schraube 2016; Dreier 2016).

In my data this was evident in the examples in which the students discussed how their self-understandings, worldviews and commitments shaped how they experienced their internship, including the societal purposes and values embedded in the work. For instance, some of the focus group participants discussed enjoying the consulting industry because of the dynamic and interesting work (i.e. work tasks and immediate goals to achieve), but at the same time being put off by the industry because they did not see the value behind the purpose of the work activity. Another focus group participant discussed how she realised that although she disliked the administrative tasks of her internship in an embassy she remained attracted to the work because she could identify with the purpose of the work, which was to bring people and nations together.

Figure 9.3 Identity renegotiation in transition to work as an intersection between professional identity, the identity project and the conduct of everyday life



The latter concept suggests that an under-appreciated aspect of individual agency is the need to ensure their own well-being and agency in future. For instance, in my research students and graduates create and choose work and study opportunities even when they do not align

with their identity projects – in order to enhance future internship and work opportunities. This tendency is also captured by one of the focus group participants, who was giving advice to new students by telling them not to be discouraged by their first internship, because ‘you can become more “picky” with time’. The concept of ‘life interest’ is one of the foundational assumptions in Holzkamp’s work.³⁹ Holzkamp (2013) describes this tendency to ensure well-being in the future in various ways, for instance, ‘[to] gain influence over their life prospects’, and “achieving control over the resources of satisfaction – that is, the conditions upon which one’s possibilities for living and developing depend’. Furthermore, he adds that incapability to advance one’s life interests is perceived as the ultimate ‘injury to my subjectivity’ and, on the contrary, that ‘overcoming this dependency [on others] is virtually identical to the prospective possibility of developing my individual life quality’ (Holzkamp 2013:20). Hence, students use internships as a resource to create opportunities for themselves in the immediate future even when the internships do not afford identity-development that is in line with their identity projects and value commitments.

Implications of the mixed-method research for CHAT

Finally, a methodological and empirical contribution of my research for the CHAT community is the following. I showed that mixed-method orientation has always existed in CHAT because of the dialectical and cultural historical nature of the tradition but that this mixed-method tradition was unacknowledged until recently with the work of Roth (2008) who showed that dialectic assumptions and the use of qualitative and quantitative evidence are not at odds. In that sense, my research showed empirically that cultural behaviour can become objectivised as patterns and categories and informative of the aggregate trends for a particular group of people. These insights need to be followed by the understanding of

³⁹ For Holzkamp life interest is the ‘sole material *a priori* in a science of the individual’ (Holzkamp 1983: 350 in Holzkamp 2013).

thinking and reasoning of concrete individuals that are in some way representative of the trend or the group. Further development in this regard would entail fine-tuning the integrated mixed-method framework based on cultural-historical assumptions with more empirical research such as the use of secondary longitudinal data or designing a survey.

Mixed-method approach – implications and possibilities

The contribution of my mixed-method approach (Figure 9.1 and Table 9.1) for the mixed-method research community my framework suggests the following. By positing a different epistemological position (i.e. non-binary or dialectic position) the mixed-method researchers have mainly operated on an assumption of the binary world such as objective and subjective worlds that have to be brought together and a dialectical, cultural-historical approach to mixed-method can contribute to the discussions of the mixed-method community.

My framework draws upon and contributes to discussions among the community of social science researchers, advancing the need for a broader argument of mixed-method thinking in social research (e.g. Elliot 2005; Mislavy, Moss *et al.* 2008). The mixed method-model I developed in this thesis represents a clear epistemological position that is under-represented in the mixed-method community (i.e. dialectical epistemology), a set of analytical assumptions (i.e. the integrated mixed-method framework and four principles of integration), and an empirical illustration of a dialectic mixed-method study of expertise development.

The contribution of my approach relative to the epistemological position it introduces as the foundation of mixed-method research (i.e. dialectical and cultural-psychological assumptions) an assumption that social world is both qualitative and quantitative and hence that the two different methodologies are not juxtaposed but are seen as complementary forms of generating evidence about social phenomena.

The analytical contributions is that my integrated framework is that it takes into consideration an intrinsic dimension of research practice in social sciences (i.e. what the researchers actually do – make arguments, attempt to convince stakeholders of the merit of their work)

This framework draws on the strengths of the dominant mixed-method models in the literature (i.e. substantive, pragmatic and dialectical approaches) by highlighting the importance of the overarching conceptual and methodological model of the social world (in line with the substantive approach), by making methodological choices based on the requirements of the real world research problem (in line with the pragmatic approach), and by acknowledging the differences and contradictions in the worldviews of qualitative and quantities methodologies (in line with the dialectical mixed-method approach). At the same time, the integrated framework contributes to the discussion on integration or synthesis of data and debates about what mixed-method research is (e.g. Creswell 2003, Denscombe 2008, Creswell and Plano Clark 2011, Freshwater and Fisher 2014)

As an expanded frame for thinking about mixed-method research in social practice terms my mixed-method model has some affinities with Elliott's (2005) mixed-method approach that focused on (social) narratives as an analytical unit in which qualitative and quantitative data intersect. According to Elliott (2005) narratives are not solely a form of everyday communication but researchers too construct narratives to make sense of the social world (e.g. concepts, theories models) using (qualitative and quantitative) empirical data. The research narratives like any other narratives are evaluative and expressive of the location of the narrator. In this sense her notion of a narrative has affinities with (i) what I referred to as a dialogical dimension of research reflecting the position of the researcher/narrator and the researcher stakeholders/interlocutors and (ii) the (social) representations of research phenomena that the qualitative and quantitative data, as artefacts of research communities and their symbolic practices, are imbued with. In other words, what underlies both

approaches is the idea that both qualitative and quantitative data are seen as research artefacts that have a story-telling quality and reflect the wider ‘story’ of the particular research practice which produced the data.

However, where my model differs from Elliott’s (2005) is that it assumes that what gives quantitative data a ‘narrative’ (i.e. dialogical and representational) quality is not the temporal ordering longitudinal research data but rather the research activity of communities in which the datasets were created or in which they are used (e.g. in the case of secondary analysis). For instance, in my mixed-method approach, cross-sectional surveys like the longitudinal ones discussed would have a ‘narrative quality’. For Elliott useful research narratives can be created more strictly from data of the cohort studies, by quantitative data textually (e.g. ‘pen portraits’ of outliers) or when researchers take into consideration the context of quantitative studies, such as how the time and place of quantitative research limit the scope of the research.

Further development of my mixed-method involves empirical development through, for instance, as Elliott’s approach suggests (2005), the use of longitudinal and cohort data could help extend the potential of quantitative data to recreate the trajectories of individuals over time.

The horizontal expertise framework and implications for youth transition research

An implication of my research for the youth studies community is that it shows a mutually productive synergy between graduate transition research that focuses on the learning dimension and youth research with a focus on the learning dimension would be important.

On one hand, the sociological tradition of youth research can provide a rich grounding to the subsequent research on graduate horizontal expertise. Namely, this tradition already established some the post-1970s generations have more protracted and complex experiences of transitioning to full-time employment (Furlong, Woodman and Wyn 2011) and developed new conceptual tools to capture the changing nature of young people's transitions to work and adulthood over time (Wyn and Dwyer 1999; Evans 2002).⁴⁰ The implications of this is that horizontal expertise development could be researched with regard to the macro-level variations among students in different countries (e.g. Evans and Heinz 1994), in relation to different generations in the same country (Bynner and Roberts 1991), or by looking at how expertise development differs along social markers, such as gender, ethnicity and class. It could also be considered through framing the resources and opportunities available for graduate expertise development (Schoon and Eccles 2014) and how these are played out in the lives of individuals (Evans 2002).

In addition to this, youth studies have recognised the importance of identity development as part of transitioning into adulthood in the way that some mainstream learning approaches have not (e.g. cognitivist and behaviourist learning theories). For instance, the broad lens of the life course perspective in youth research, which approaches transition to work in the context of the broader life trajectories of individuals (Furlong 2009; Helve and Evans 2013),⁴¹ can provide a rich background for further research on horizontal expertise. For instance, youth researchers recognised that, in the absence of traditional markers of adulthood, what becomes highly important is: managing multiple social identities associated with participation in communities (e.g. education, work) (Côté 2009, 2013; Bois-Reyomond

⁴⁰ For instance, as some have argued, Ulrich Beck's ideas have been popular with youth researchers partly because his work demonstrated that the analytical tools of 20th century sociology are 'no longer up to the task' for 'the contemporary social world' (Woodman 2009).

⁴¹ 'Core transitions to adulthood concern the matching of education and employment which is the backbone for implementing one's aspirations and to coordinate participation in the spheres of family life, consumption and citizenship' (Heinz 2009: 4).

2012), values young people hold and their aspirations about the future to understand how they navigate historically new opportunities and choices related to education, work and family life (Schoon 2006; Jones and Schneider 2009; Kirkpatrick Johnson and Monserud 2009). These themes are all salient aspects of the identity dimension of horizontal expertise.

On the other hand, the horizontal expertise framework could be a useful analytical resource for youth researchers who are interested in the learning process that takes place during the transition to work. Several youth researchers have argued that there is a need for a ‘comprehensive and adequate *learning theory*’ (Du Bois-Reymond 2004:188, added emphasis; also see Cohen and Ainly 2000; Bynner 2001) and some have argued that, there is a need for a theory of ‘cultural learning’ à la Lave and Wenger’s (1991) model of apprenticeship (Cohen and Ainly 2000) that would address questions such as ‘How do people learn to culturally labour?’ and ‘How some young people learn to culturally labour more productively than others’ (Cohen and Ainly 2000:92).

From the perspective of learning that I have been developing in this thesis, horizontal expertise would contribute to youth research by providing analytical tools to describe (i) *how* young people learn to ‘culturally labour’ across the boundaries of different contexts (e.g. through engaging with the boundary, recontextualising and relating to the practice through their identity re-negotiation and (ii) *what* they learn in and across contexts that enables them to fully participate in social practices (e.g. navigating the spaces of reasons, using speech genres and relating to object and motive of activity). This potential synergy between youth research on learning and transition and the horizontal expertise framework has strong implications for education, because it suggests concrete ways in which the transition of students and graduates could be supported to better navigate their lives.

Implications of horizontal expertise for graduate skills and competence research

The contribution of my research for the graduate transition research community is that it shows that it is important to consider the learning dimension of graduate transition to work both conceptually (horizontal expertise development) and empirically (as trends of graduate transitions and as qualitative accounts of the experience). This is because the quantitative data on horizontal expertise brings to light destinations of groups of graduates but it cannot detect the decision-making process and the rationale that underpin the choice of a particular destination.

The model of horizontal expertise I suggested has advantage over the skills and competence model, because it is more relevant to the current context of highly-skilled knowledge intensive work and is grounded in the analysis of learning challenges that are embedded in the process of expertise development (Table 9.3). This is also evident in the discussions that competence approach is outdated for the new economic and social conditions that are significantly differ from those in the 1970s and 1980s (Fernandez-Araoz 2014) in the same way that the competence approach suggested as a shift from broad, general and stable units of expertise (e.g. ability, personality) of the psychometric approach towards the more varied and context-specific units of expert performance. This shows that the competence and skill approach in education which views graduate transition to work in terms of 'skill matching' should also be strongly reconsidered, and, I suggested re-cast along the lines of learning challenges of graduate and horizontal expertise development.

Table 9.3 The skills/competence and horizontal expertise models of graduate transition to work

	The traditional skills/competence approach	The horizontal skills approach
Graduate transition process	Framed in terms of possessing, demonstrating and matching skills with employer needs	Framed in terms of thinking with and relating to the workplace. Tradition of thinking and solving problems
Learning challenges	How to gain sets of generic and specific skills	How to develop horizontal expertise across education and work
The principle of crossing context	Matching principle	Relational recontextualisation principle

In contrast to the competence model with the horizontal expertise model of graduate transition (Table 9.3) I moved the analytical focus from the generic outputs of learning and the concern for how to best match them to the requirements of work towards the learning challenges embedded in developing expertise in a competitive social world that result in a complex expertise/identity relationship (i.e. ‘horizontal expertise’). Thus, according to my model, it is a particular co-evolving expertise/identity relationship that will enable students and graduates to move forward. This expertise/identity relationship is a developing and ongoing aspect of the learning dimension of graduate transition to work. Moreover, as suggested in the literature, the relationship between expertise and identity is increasingly one of the key aspects of professional practices as well (e.g. Edwards 2010).

Thus, based on the discussion above, I suggest that the focus on expertise/identity can enable graduate transition researchers to reveal more salient and relevant aspects of the transition process than the skills and competences approach can. It can also enable graduate transition practitioners (e.g. policy-makers, lecturers, and careers advisers) to devise new strategies to support the transition to work of graduates by focusing on the specific challenges of graduate expertise development.

9.5 Limitations and future developments of graduate horizontal expertise research development

In this section, I will outline some of the important limitations of my conceptualisation of the issue this thesis addresses, its methodology and its empirical evidence. To further develop my research on horizontal expertise I would need to address the limitations in the ways I suggest below.

Regarding the conceptualisation of the horizontal expertise, it is important to acknowledge that graduate horizontal expertise can be seen as an elusive concept. Unlike the conceptions of expertise from the tradition of Psychology or Philosophy my concept cuts across the disciplinary domains and I can identify expressions of horizontal expertise rather than operationalising concrete measures of it. Similarly, graduate horizontal expertise is a concept that captures a capability that arises out of relational context-specific action and that is manifested in how graduates subsequently think and act about their professional trajectories. Hence as a concept it captures development in thinking in relation to oneself and the world rather than a stable individual feature such as competence, skill or a trait. This makes the concept challenging to research but I have provided guidelines in my methodology.

In the case of methodology, a limitation of my study on horizontal expertise is that my foundational methodological assumptions rest on a set of assumptions about research (as social, communicative and argument-based activity) that are breaking new ground. I was advocating for a particular approach to mixed-method research underpinned by dialectical assumptions and applying it to my own research. Moreover, I have attempted to devise a CHAT-based mixed-method approach in a tradition that has not been recently characterised by mixed-method. Hence my claims need to be subject to peer review. So far, the closest to

peer review I managed to ensure was ISCAR 2017 conference in feedback which I implemented in the integrated mixed-method framework.

Regarding my empirical study I chose to use extant data survey rather than undertake a survey to substantiate my claim that quantitative data can be used to analyse the qualitative experience of participants. However, I recognise that there are problems with the extant survey because it was not explicitly designed to gather data on the internship experience of recent graduate and hence I had to devise a new indicator of horizontal expertise development (i.e. an internship that was not part of the graduates degree).

Moreover, since the dataset is over ten years old (the data was collected in 2005) I recognise that it may not reflect the latest internship-related labour market trends. These include both the increase in the number of companies offering and students taking on an internship (High Fliers Research 2015, 2016) but also in the aftermath of the 2008 recession the intensification of competition for graduate jobs (Brown, Lauder and Ashton 2011). In other words, under the pressure for graduates to be employable, internships have in the meantime become a more common way to gain experience at work and employment. By extension the need for graduates to develop horizontal expertise may have increased. Thus, in order to strengthen and further develop the quantitative evidence for my framework, I plan to design a survey that gathers more detailed information on the degree-related, internship and post-graduation experience is needed. In addition to this, there is a great potential of extant longitudinal surveys to make claims about the value and importance of horizontal expertise development after graduation.

For the qualitative study I chose focus group method because it enabled me to see how discussion on internship unfolds in small discussion groups with students from different disciplinary backgrounds and how knowledge and insight that the interns have gathered from

their experience is seen by other group members – whether their experience was common, unique, complementary or opposing. Moreover, the focus group method was aligned with my theoretical assumptions that mind is social and dialogical. However, it needs to be acknowledged that focus groups are still a relatively recent addition to qualitative methods and hence that they are seen as problematic because of their association with market research. To offset an eclectic approach to focus group method, I used focus group explicitly as a tool of dialogical methodology to uncover social knowledge about graduate expertise that circulated in focus groups. Furthermore, I followed the focus group literature on how to avoid power imbalances in focus groups when designing and moderating the groups by selecting participants who were similar in age and education level, and managing dominant and reticent discussants (e.g. setting ground rules beforehand, using non-verbal cues to discourage or entice someone to talk).

Finally, a limitation of my focus group study related to the design of research was the size and composition of the discussion groups. The participants were predominantly from one, high-ranking university and they volunteered to share their experience of doing an internship. To overcome this limitation having a larger group with more diverse voices. For my future research on horizontal expertise it would be important to diversify the sample by including participants from different universities across England, and by including students from universities of different prestige (e.g. the post-1992 Universities). This would enable me to see whether and how horizontal expertise develops among students in different geographical regions, in less prestigious universities and with lower levels of social and cultural capital as well as whether these students have access to internships that are as imbued with learning opportunities.

In addition to this, running focus groups with students and graduates who did not have the experience of an internship in parallel could have enhanced my research design. For my future research on horizontal expertise, having focus groups with students who did not complete an internship before graduation in addition to having focus groups with those who have, would enable me to make comparisons. Subsequently, it would help me make stronger inference about horizontal expertise development in an internship.

9.6 Conclusion

In this chapter I showed how I have brought together insights from quantitative and qualitative research on the learning dimension of graduate transition to work using the integrated mixed-method principles and a mixed-method design. I then revisited and fine-tuned the key facets of the ‘graduate horizontal expertise framework’ in light of this integration. Finally, I demonstrated that the horizontal expertise framework can make a contribution to graduate transition researchers concerned both with policy research and academic youth research as well as to the specialist communities of CHAT and mixed-method researchers. At the same time, the graduate horizontal expertise framework is in its nascent phase and needs to be further fine-tuned, both (i) empirically, with longitudinal data and by incorporating a broader perspective on youth transition established in youth research tradition and (ii) conceptually, by working in synergy with concepts and models from youth research.

Bibliography

Adler, S. P. (2004) 'Skill trends under capitalism and the socialisation of production', in C. Warhurst, I. Grugulis and E. Keep (eds) *Skill Trends under Capitalism and the Socialisation of Production*, Basingstoke, Palgrave Macmillan, pp. 242-260.

Adler, S. P. and Heckscher, C. (2006) 'Towards collaborative community', in C. Heckscher and S. P. Adler (eds) *The Firm as a Collaborative Community: Reconstructing Trust in the Knowledge Economy*, Oxford, Oxford University Press, pp. 11-106.

Allen, J., et al. (2007). *The Flexible Professional in the Knowledge Society: General Results of the REFLEX Project* Maastricht Research Centre for Education and the Labour Market, Maastricht University.

Archer, W. and Davison, J. (2008) 'Graduate employability', The council for industry and Higher Education.

Ainley, P. and Corbett, J. (1994) 'From vocationalism to enterprise: Social and life skills become personal and transferable', *British Journal of Sociology of Education* 15(3): 356-374.

Akkerman, F. S., and Meijer, P. (2011) 'A dialogical approach to conceptualizing teacher identity', *Teaching and Teacher Education*, 27(2): 308-319.

Akkerman, F. S. and Bakker, A. (2011a) 'Boundary crossing and boundary objects', *Review of Educational Research*, 81(2): 132-169.

Akkerman, F. S., and Bakker, A. (2011b) 'Learning at the boundary: An introduction', *International Journal of Educational Research*, 50: 1-5.

Allan, H. T., Magnusson, C., Horton, K., Evans, K., Ball, E., Curtis, K. and Johnson, M. (2015) 'People, liminal spaces and experience: Understanding recontextualisation of knowledge for newly qualified nurses', *Nurse Education Today*, 35(2): e78-e83.

Allen, J., Velden, R. V. D., Arnesen, C. Å., Calmand, J., Frontini, M., Paul, J. J., Rostan, M., Schomburg, H., Støren, L. A. and Teichler, U. (2007) *The Flexible Professional in the Knowledge Society: General Results of the REFLEX Project*, Maastricht Research Centre for Education and the Labour Market, Maastricht University. Available from: <http://digitalarchive.maastrichtuniversity.nl/fedora/get/guid:645a542e-02bd-4db6-bad4-b7ecec53a4ef/ASSET1> (Accessed 08/09/17).

Allen, J., van der Velden, R., Helmschrott, S., Martin, S., Massing, N., Rammstedt, B., Zabal, A. and Von Davier, M. (2013) 'The development of the PIAAC background questionnaires', *Technical Report of the Survey of Adult Skills (PIAAC)*, Paris, OECD Publishing.

Allman, P. (1999) *Revolutionary Social Transformation: Democratic Hopes, Political*

Possibilities and Critical Education, Westport, Bergin & Garvey.

Anderson, J. R., Reder, L. M., & Simon, H. A. (1996) 'Situated learning and education', *Educational Researcher*, 25(4), 5–11

Anderson, J. (2000) *Cognitive Psychology and Its Implications*, New York, Worth Publishing.

Anderson, N. (2005) 'Relationships between practice and research in personnel selection: Does the left hand know what the right is doing?' in A. Evers, N. Anderson and O. Voskuijl (eds) *Blackwell Handbook of Personnel Selection*, Oxford, Blackwell Publishing, pp. 1-25.

Arnett, J. J. (2005) 'The developmental context of substance use in emerging adulthood', *Journal of drug issues*, 35(2): 235-254.

Arnseth, H. C. (2008) 'Activity theory and situated learning theory: Contrasting views of educational practice', *Pedagogy, Culture & Society*, 16(3): 289-302.

Aronson, P., Callahan, T. and Davis, T. (2015) 'The transition from college to work during the great recession: Employment, financial, and identity challenges', *Journal of Youth Studies*, 18(9): 1097-1118.

Ashley, L. (2010) 'Making a difference? The use (and abuse) of diversity management at the UK's elite law firms', *Work, Employment & Society*, 24(4): 711-727.

Ashton, D. (1997) 'Labour market approaches to the study of the relationship between education and (un)employment in the United Kingdom', in A. Jobert, C. Marry, L. Tanguy and H. Rainbird (eds) *Education and Work in Great Britain, Germany and Italy*, Routledge, London and New York, pp. 143-160.

Ashton, D. and Green, F. (1996) *Education, Training and the Global Economy*, Cheltenham, UK & Brookfield, US, Edward Elgar.

Ashton, D., Maguire, M. and Spilsbury, M. (1987) 'Labour market segmentation and the structure of the youth labour market', in P. Brown and D. N. Ashton, *Education, Unemployment and Labour Markets*, Lewes, Falmer Press, pp. 60-178.

Aspin, D. N., Chapman, J. D., Evans, K. and Bagnall, R. (eds) (2012) *Second International Handbook of Lifelong Learning*, Dordrecht, Heidelberg, London and New York, Springer.

Attewell, P. (1990) 'What is skill?' *Work and Occupations*, 17(4): 422-448.

Auld, E. and Morris, P. (2014) 'Comparative education, the "new paradigm" and policy borrowing: Constructing knowledge for educational reform', *Comparative Education*, 50(2): 129-155.

Auld, E. and Morris, P. (2016) 'PISA, policy and persuasion: Translating complex conditions into education "best practice"', *Comparative Education*, 52(2): 202-229.

- Bachman, F. L. (2005) 'Building and supporting a case for test-use', *Language Assessment Quarterly*, 2(1): 1-34.
- Bachman, F. L. (2009) 'Generalizability and research use arguments', in K. Ercikan and W-M. Roth (eds) *Generalizing from Educational Research: Beyond Qualitative and Quantitative Polarization*, London and New York, Routledge, pp. 127-147.
- Bakhurst, D. (1991) *Consciousness and Revolution in Soviet Philosophy: From the Bolsheviks to Evald Ilyenkov*, Cambridge, Cambridge University Press.
- Bakhtin, M.M (1986) *Speech genres and other late essays*. Austin, University of Texas Press.
- Holquist, M. (1986) 'Introduction' in Bakhtin, M. *Speech genres and other late essays*. Austin, University of Texas Press. Pp.i-xviii
- Bakker, A., and Derry, J. (2011) 'Lessons from inferentialism for statistics education', *Mathematical Thinking and Learning*, 13(1-2): 5-26.
- Barbour, R. (2007) *Doing Focus Groups*, London, Sage Publications.
- Bash, L. and Green, A. (eds) *World Yearbook of Education 1995: Youth, Education and Work*, New York, Routledge.
- Bauer, W. M. and Gaskell, G. (2000) 'Quality, quantity and knowledge interest: Avoiding confusions', in W. M. Bauer and G. Gaskell (eds) *Qualitative Researching with Text, Image and Sound: A Practical Handbook*, Los Angeles, Sage Publications, pp. 3-19.
- Bazeley, P. (2009) 'Integrating data analyses in mixed methods research'. *Journal of Mixed Methods Research*, 3(3): 203-207.
- Beach, K. D. (1995) 'Activity as a mediator of sociocultural change and individual development: The case of school-work transition in Nepal', *Mind, Culture, and Activity*, 2(4), 285-302.
- Beach, K. (1999) 'Consequential transitions: A sociocultural expedition beyond transfer in education', *Review of Research in Education*, 24: 101-139.
- Beach, K. (2000) 'Mathematics in transition between school and work', *Adults Learning Mathematics Newsletter*, 11: 2-4.
- Beach, K. (2003) 'Consequential transitions: A developmental view of knowledge propagation through social organizations', in T. Tuomi-Grohn and Y. Engeström (eds), *Between School and Work: New Perspectives on Transfer and Boundary-crossing*, Oxford, Bingley, Emerald Group Publishing, pp. 39-61.
- Beck, U. (1992) *Risk society: Towards a new modernity*, Sage.
- Becker, G. (1975) *Human Capital: A Theoretical and Empirical Analysis, with Special*

Reference to Education, Chicago, University of Chicago Press.

Becker, H. S. (1967) 'Whose side are we on?' *Social Problems*, 14(3): 239-247.

Bennett, N., Dunne, E. and Carré, C. (1999) 'Patterns of core and generic skill provision in higher education', *Higher Education*, 37(1): 71-93.

Benton, T. and Craib, I. (2001) *Philosophy of Social Science: The Philosophical Foundations of Social Thought*, Basingstoke, Palgrave Macmillan.

BERA (2011) 'Ethical guidelines for educational research'. Available from: <https://www.bera.ac.uk/wp-content/uploads/2014/02/BERA-Ethical-Guidelines-2011.pdf> (Accessed 08/09/17).

Berg, E. I. (1971) *Education and Jobs: The Great Training Robbery*, New York, Beacon Press.

Berridge, E. J., Freeth, D., Sharpe, J. and Roberts, C. M. (2007) 'Bridging the gap: Supporting the transition from medical student to practising doctor - A two-week preparation programme after graduation', *Medical Teacher*, 29(2-3): 119-127.

Brennan, J. (2008a) The Flexible Professional in the Knowledge Society – New Demands on Higher Education in Europe, Overview Report to HEFCE, Available www.hefce.ac.uk/pubs/rcreports/2008/rd22_08/rd22_08ov.pdf (Accessed 18/03/2017)

Brennan, J. and Little, B. (2010) Graduate Competences and Relationships with the Labour Market, the UK case. Available from http://oro.open.ac.uk/20897/3/DECOWE_conference_Sept_2009_Brennan_and_Little.pdf (Accessed on 14/06/2015)

Billet, S. (2002) 'Workplace pedagogic practices: Co-participation and learning', *British Journal of Educational Studies* 50(4): 457-481.

Billing, D. (2007) 'Teaching for transfer of core/key skills in higher education: Cognitive skills', *Higher education*, 53(4): 483-516.

Bills, D. B. (2003) 'Credentials, signals, and screens: Explaining the relationship between schooling and job assignment', *Review of Educational Research*, 73(4): 441-449.

Bills, D. B. (2004) *The Sociology of Education and Work*, Malden, Blackwell Publishing.

Bills, D. B. and Brown, D. K. (2011) 'New directions in educational credentialism', *Research in Social Stratification and Mobility*, 29(1): 1-4.

Binning, J. F. and Barrett, V. G. (1989) 'Validity of personnel decisions: A conceptual analysis of the inferential and evidential bases', *Journal of Applied Psychology*, 74(3): 478-494.

BIS, Department for Education (2014) *Graduate Labour Market Statistics: Methodology*

Note. I. a. S. Department for Business. England. Available from:
[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/610428/Graduate Labour Market Statistics Methodology Note 2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/610428/Graduate_Labour_Market_Statistics_Methodology_Note_2016.pdf) (Accessed 08/09/17).

Bjornavold, J. and M. Coles (2010) *Added Value of National Qualifications Frameworks in Implementing the EQF*. Available from: https://ec.europa.eu/ploteus/sites/eac-eqf/files/note2_en.pdf (Accessed 08/09/17).

Bloor, M., Frankland, J., Thomas, M. and Robson, M. (2001) *Focus Group in Social Research*, London, Sage Publications.

Boateng, S. K., Garrouste, C. and Jouhette, S. (2011) 'Measuring transition from school to work in the EU: Role of the data source'. In *International Conference "Catch the Train: Skills, Education and Jobs"*. Brussels.

Bolles, C. R. (1979) *Learning Theory*, New York, Holt, Rinehart and Winston.

Bolton, P. (2012) *Education: Historical Statistics*, UK Parliament, House of Commons Library.

Bottani, N. (1994) 'The OECD international education indicators', *Assessment in Education: Principles, Policy & Practice*, 1(3): 333-350.

Bourdieu, P. (2003) 'Participant Objectivation', *Journal of the Royal Anthropological Institute*, 9(2): 281-294.

Bourdieu, P. and Passeron, J. C. (1977) *Reproduction in Education, Society and Culture*, London, Sage Editor.

Bowden, J., and Morton, F. (1998) *The university of learning*, London, Kogan Page.
Bower, H. G. and Hilgard, R. E. (1981) *Theories of Learning*, Reno, Prentice Hall.

Bowles, S. and Gintis, H. (1976) *Schooling in Capitalist America: Economic Reform and Contradiction of Economic Life*, New York, Routledge.

Boyatzis, R. E. (2007) 'Developing emotional intelligence competencies', *Applying emotional intelligence: A practitioner's guide*, pp.28-52.

Branine, M. (2008) 'Graduate recruitment and selection in the UK: A study of the recent changes in method and expectations', *Career Development International*, 13(6): 497-513.

Brennan, J. and Little, B (2010) 'Graduate competences and relationships with the labour market: the UK case'. In: *Development of Competencies in the World of Work and Education*, 24-26 September 2009, Ljubljana, Slovenia.

Brannen, J. (ed.) (1995) *Mixing Methods: Qualitative and Quantitative Research*, Brookfield, Aldershot.

Brannick, T. M., Cadle, A. and Levine, E. L. (2012) 'Job analysis for knowledge, skills, abilities and other characteristics, predictor measures and performance outcomes', in N.

Schmitt (ed.) *The Oxford Handbook of Personnel Assessment and Selection*, Oxford, Oxford University Press, pp. 119-146.

Bransford, J. D., Brown, A. L., & Cocking, R. R., (2000) 'Learning and transfer'. In J.D Bransford, A.L Brown, R.R Cocking (eds) *How people learn: Brain, mind, experience, and school*. Washington, National Academy Press. pp. 31–78

Bridges, D. (1993) 'Transferable skills: A philosophical perspective', *Studies in Higher Education*, 18(1): 43-51.

Bridgstock, R. (2009) 'The graduate attributes we've overlooked: Enhancing graduate employability through career management skills', *Higher Education Research & Development*, 28(1): 31-44.

Bridgstock, R. (2011) 'Skills for creative industries graduate success', *Education + Training*, 53(1): 9-26.

British Sociological Association (BSA) (2002) *Statement of Ethical Practice for the British Sociological Association*. Available from:
<https://www.britisoc.co.uk/media/23902/statementofethicalpractice.pdf> (Accessed 08/09/17).

Brooks, R. (2009) 'Transitions from education to work: An introduction', in *Transitions from Education to Work*, UK, Palgrave Macmillan, pp. 1-14.

Brown, D. K. (2001) 'The social sources of educational credentialism: Status cultures, labor markets, and organizations', *Sociology of Education*, extra issue: Current of Thought: Sociology of Education at the Dawn of the 21st Century, 74: 19-34.

Brown, P. (1991) 'Schooling and employment in the United Kingdom', in D. Ashton and G. Lowe (eds) *Making their way: education, training and the labour market in Canada and Britain*. Buckingham, Open University Press, pp. 85-108.

Brown, P. and Ashton, D. N. (1987) 'Introduction', in P. Brown and N.D. Ashton (eds) *Education, unemployment and labour markets*. Basingstoke, Falmer Press.

Brown, P., P., Lauder, H., Halsey, A. H. and Wells, A. S. (1997) 'The transformation of education and society: An introduction', in A. H. Halsey, H. Lauder, P. Brown and A. Wells (eds) *Education: Culture, Economy, and Society*, Oxford, Oxford University Press, pp. 1-45.

Brown, P. and A. Hesketh (2004). *The mismanagement of Talent, Employability and Jobs in the Knowledge Economy*. Oxford, Oxford University Press.

Brown, P. (2003) 'The opportunity trap: education and employment in a global economy', *European Educational Research Journal*, 2(1): 141-179.

Brown, P., Hesketh, A. and Williams, S. (2003) 'Employability in a knowledge-driven economy', *Journal of Education and Work*, 16(2): 107-126.

Brown, P. and Lauder, H. (1995) 'Post-Fordist possibilities: Education, training and national development', in P. Brown and H. Lauder (eds) *World Yearbook of Education 1995: Youth*

Education and Work, London, Kogan Page Limited, pp. 19-33.

Brown, P., Lauder, H. and Ashton, D. (2011) *The global auction: The promise of education, jobs, and income*. Oxford, Oxford University Press.

Brown, P. and Scase, R. (1994) *Higher Education and Corporate Realities, Class, Culture and the Decline of Graduate Careers*, Routledge, London and New York.

Bruner, J. (1996) *The Culture of Education*, Cambridge and London, Harvard University Press.

Bruner, J. (2009) 'Culture, mind and education', in K. Ileris (ed.) *Contemporary Theories of Learning: learning theorists in their own words*, London and New York, Routledge, pp. 159-169.

Bryman, A. (2008) 'The end of the paradigm wars?' in P. Alasuutari, L. Bickman and J. Brannen (eds) *The SAGE Handbook of Social Research Methods*, London, Sage Publications, pp. 13-26.

Brzinsky-Fay, C. (2014) 'The measurement of school-to-work transitions as processes', *European Societies*, 16(2): 213-232.

Burke, D. D. and Carton, R. (2013) 'The Pedagogical, Legal, and Ethical Implications of Unpaid Internships', *Journal of Legal Studies Education*, 30(1): 99-130.

Butler, J. (2001) 'Giving an account of oneself', *Diacritics*, 31(4): 22-40.

Butterfield, E. C., Slocum, T. A., & Nelson, G. D. (1993) 'Cognitive and behavioral analyses of teaching and transfer: Are they different?', in D. K. Detterman, & R. J. Sternberg (eds.), *Transfer on Trial: Intelligence, Cognition, and Instruction*, Norwood, Ablex Publishing Corporation, pp.192-257

Bynner, J. (2013) 'School to work transitions and wellbeing in a changing labour market', in H. Helve and K. Evans (eds) *Youth and Work Transitions in Changing Social Landscapes*, London, The Tufnell Press, pp. 31-44.

Bynner, J. (2001) 'British youth transitions in comparative perspective', *Journal of youth studies*, 4(1): 5-23.

Bynner, J. M., Chisholm, L. and Furlong, A. (eds) (1997) *Youth, Citizenship and Social Change in Europe*, Aldershot, Ashgate.

Bynner, J. M. and Roberts, K. (1991) *Youth and Work: Transition to Employment in England and Germany*, London and Bonn, Anglo-German Foundation for the Study of Industrial Society.

Camption, M., Fink, A., Ruggeberg, B., Carr, L., Phillips, G. and Odman, R. (2011) 'Doing Competencies well: best practices in competency modelling', *Personnel Psychology*, 64, p. 225-262.

- Carraher, D. and Schliemann, A. (2002) 'The transfer dilemma', *The Journal of the Learning Sciences*, 11(1): 1-24.
- Carraher, T. N., Carraher, D. W. and Schliemann, A. D. (1985) 'Mathematics in the streets and in schools', *British Journal of Developmental Psychology*, 3: 21-29.
- Catania, C. (1992) *Learning*, New Jersey, Prentice-Hall International.
- Cedefop (2008) *Terminology of European Education and Training Policy: A Selection of 100 Key Terms*. Luxembourg, Office for Official Publications of the European Communities.
- Chamorro-Premuzic, T. and Furnham, A. (2005) *The Psychology of Personnel Selection*, Cambridge, Cambridge University Press.
- Chamorro-Premuzic, T., Von Stumm, S., and Furnham, A. (2011) 'The Wiley-Blackwell Handbook of Individual Differences', Hoboken, Wiley-Blackwell,
- Chillas, S. (2010) 'Degrees of fit? Matching in the graduate labour market', *Employee Relations*, 32(2), pp.156-170.
- Christopoulou, R. (2013) "'Why have labour market outcomes of youth in advanced economies deteriorated?'" *The B.E. Journal of Economic Analysis & Policy*, 13(1): 203-238.
- Cieslik, M. J. and Simpson, D. (2013) *Key Concepts in Youth Studies*, Los Angeles, Sage Publications.
- Coco, M. (2000) 'Internships: try before you buy arrangements', *SAM Advances management journal*, 65(2), p.41-44.
- Cohen, P. and Ainley, P. (2000) 'In the country of the blind? Youth Studies and Cultural Studies in Britain', *Journal of Youth Studies*, 3(1): 79-95.
- Cole, M. (1996) *Cultural Psychology: A Once and Future Discipline*, Cambridge and London, The Belknap Press of Harvard University Press.
- Cole, M. and Scribner, S. (1974) *Culture & thought: A psychological introduction*, New York, John Wiley & Sons.
- Cole, M., Levitin, K. and Luria, A. R. (2010) *The Autobiography of Alexander Luria: A Dialogue with The Making of Mind*, New York and London, Psychology Press.
- Coles, B. (1995) *Youth and Social Policy*, London, UCL Press.
- Collins, R. (1971) 'Functional and conflict theories of educational stratification', *American Sociological Review*, 36(6): 1002-1019.
- Collins, R. (1979) *The Credential Society*, London, Academic Press.
- Côté, E. J. (2009) 'Youth-identity studies: History, controversies and future directions', in A. Furlong (ed.) *Handbook of Youth and Young Adulthood: New Perspectives and Agendas*,

London and New York, Routledge, pp. 375-384.

Côté, E. J. (2014) *Youth Studies: Fundamental Issues and Debates*, Basingstoke, Palgrave MacMillan.

Council of the European Union (2012) *Council Conclusions on the Employability of Graduates from Education and Training*, Brussels. Available from: http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/educ/130142.pdf (Accessed 08/09/17).

Cranmer, S. (2006) 'Enhancing graduate employability: Best intentions and mixed outcomes', *Studies in Higher Education*, 31(2): 169-184.

Creswell, W. J. (2003) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Thousand Oaks, Sage.

Creswell, W. J. and Plano Clark, L. V. (2011) *Designing and Conducting Mixed Methods Research*, London, Sage Publications.

Crotty, M. (1998) *The Foundations of Social Research: Meaning and Perspective in the Research Process*, London, Sage Publications.

Dahlgren, M. A., Hult, H., Dahlgren, L. O., af Segerstad, H. H. and Johansson, K. (2006) 'From senior student to novice worker: Learning trajectories in political science, psychology and mechanical engineering', *Studies in Higher Education*, 31(5): 569-586.

Daniel, W. W. (1990) *Applied Nonparametric Statistics*, Boston, MA, Cengage Learning.

Daniels, H. (2001) *Vygotsky and Pedagogy*, London and New York, Routledge.

Daniels, H., Cole, M. and Wertsch, J. (2007) 'Editors' Introduction' in H. Daniels, Cole, M., J. Wertsch (eds), *The Cambridge Companion to Vygotsky*, Cambridge, Cambridge University, i-xx

Datta, L. E. (1994) 'Paradigm wars: A basis for peaceful coexistence and beyond', *New Directions for Evaluation*, 1994(61): 53-70.

De Corte, E. (1987) 'Acquisition and transfer of knowledge and cognitive skills', *International Journal of Educational Research*, 11:601-712

De Vaus, A. D. (1996) *Surveys in Social Research*, Milton Park, Routledge.

De Lange, M., Gesthuizen, M. and Wolbers, M.H.J. (2014) 'Youth Labour Market Integration Across Europe – The impact of cyclical, structural and institutional characteristics', *European Societies*, 16 (2), pp. 194-212

Denscombe, M. (2008) 'Communities of practice: A research paradigm for the mixed methods approach', *Journal of Mixed Methods Research*, 2(3): 270-283.

Denzin, N. K. and Lincoln, Y. S. (2005) *The Sage Handbook of Qualitative Research*, London, Sage Publications.

Department of Trade and Industry (1998) *Our Competitive Future: Building the Knowledge Driven Economy*, London, The Stationary Office.

Derry, J. (2003) *Vygotsky and his Critics: Philosophy and Rationality*, unpublished PhD thesis, London, the University of London.

Derry, J. (2007) 'Abstract rationality in education: From Vygotsky to Brandom', *Studies in Philosophy and Education*, 27(1): 49-62.

Derry, J. (2013) *Vygotsky, Philosophy and Education*, Chichester, Wiley Blackwell.

Detterman, K. D. (1993) 'The case for the prosecution: Transfer as an epiphenomenon', in K. D. Detterman and J. R. Sternberg (eds) *Transfer on Trial: Intelligence, Cognition and Instruction*, Norwood, Ablex Publishing Corporation, pp. 1-25.

Di Blasi, M., Tosto, C., Marfia, A., Cavani, P. and Giordano, C. (2016) 'Transition to adulthood and recession: A qualitative study', *Journal of Youth Studies* 19(8): 1043-1060.

Diepstraten, I., du Bois-Reymond, M. and Vinken, H. (2006) 'Trendsetting learning biographies: Concepts of navigating through late-modern life and learning', *Journal of Youth Studies*, 9(2): 175-193.

Dobbins, M. and Martens, K. (2012) 'Towards an education approach à la finlandaise? French education policy after PISA', *Journal of Education Policy*, 27(1): 23-43.

Donellan, M. B. and Lucas, E. R. (2013) 'Secondary data analysis', in T. D. Little (ed.) *The Oxford Handbook of Quantitative Methods in Psychology*, Oxford, Oxford University Press.

Dreier, O. (2016) 'Conduct of everyday life: Implications for Critical Psychology', in E. Schraube and C. Højholt (eds) *Psychology and the Conduct of Everyday Life*, London and New York, Routledge, pp. 15-34.

Dreier, O. (2003) 'Learning in personal trajectories of participation', in N. Stephenson, H. L. Radtke, J. R. Jorna, and J. H. Stam (eds.) *Theoretical psychology: Critical contributions*, Ontario, Caps University Publications, pp. 20-29.

Drucker, F. P. (1993) *Post-Capitalist Society*, Oxford, Butterworth Heinemann.

Du Bois-Reymond, M. (2004) *Youth-learning-Europe, Ménage à trois?*, *Young – Nordic Journal of Youth Research*, 12 (2): 187-204

Du Bois-Reymond, M. and Stauber, B. (2005) 'Biographical turning points in young people's transition to work across Europe', in H. Helve and G. Holm (eds) *Contemporary Youth Research: Local Expressions and Global Connections*, Aldershot, Ashgate, pp. 63-77.

- Durkheim, E. (1956) *Education and Sociology*, New York and London, The Free Press.
- Durkheim, E. (1965) *The Rules of Sociological Method*, Florence, MA and Washington D.C., Free Press.
- Edenborough, R. (2005) *Assessment methods in recruitment, selection and performance – A manager's guide to psychometric testing, interviews and assessment centres*, London, Kogan Page
- Edwards, A. (2005) 'Let's get beyond community and practice: the many meanings of learning by participating', *Curriculum Journal*, 16(1): 49-65.
- Edwards, A. (2010) *Being an expert professional practitioner: The relational turn in expertise*, Dordrecht, Springer Science & Business Media.
- Eisner, E. (1979) *The Educational Imagination*, New York, Macmillan.
- Elliott, J. (2005) *Using Narrative in Social Research: Qualitative and Quantitative Approaches*, London, Sage Publications.
- Elliott, H. (2011) 'Interviewing mothers: Reflections on closeness and reflexivity in research encounters', *Studies in the Maternal*, 3(1): 1-20.
- Emerging (2016) *Global Employability Survey 2016*. Available from: http://media.wix.com/ugd/3498ee_ad10c89ab152464184410adb2335dd3e.pdf (Accessed 08/09/17).
- Engeström, Y. (2001) 'Expansive learning at work: Toward an activity theoretical reconceptualization', *Journal of Education and Work*, 14(1): 133-156.
- Engeström, Y. (2016) *Studies in expansive learning: Learning what is not yet there*, Cambridge, Cambridge University Press.
- Engeström, Y. (2007) 'Enriching the theory of expansive learning: Lessons from journeys toward coconfiguration', *Mind, Culture and Activity*, 14(1-2): 23-39.
- Engeström, Y. (1987) *Learning by expanding*, Helsinki, Orienta-konsultit.
- Engeström, Y. and Cole, M. (1997) 'Situated cognition in search of an agenda', In D. Kirshner and J. A. Whitson (eds.). *Situated cognition. Social, semiotic and psychological perspectives*. Mahwah, Lawrence Erlbaum. pp. 301-309
- Engeström, Y. and Miettinen, R. (1999) 'Activity theory: A well-kept secret', in Y. Engeström, R. Miettinen and R. L. Punamäki-Gitai (eds) *Perspectives on Activity Theory*, Cambridge, Cambridge University Press, pp 1- 15
- Engeström, Y., Engeström, R. and Kärkkäinen, M. (1997) 'The emerging horizontal dimension of practical intelligence: Polycontextuality and boundary crossing in complex

- work activities’, in J. R. Sternberg and E. Grigorenko (eds) *Intelligence: Heredity and Environment*, Cambridge, Cambridge University Press, pp. 440-462.
- Engeström, Y., Engeström, R. and Kärkkäinen, M. (1995) ‘Polycontextuality and boundary crossing in expert cognition: Learning and problem solving in complex work activities’, *Learning and Instruction*, 5(4): 319-336.
- Engeström, Y. and Sannino, A. (2010) ‘Studies of expansive learning: Foundations, findings and future challenges’, *Educational Research Review*, 5(1): 1-24.
- English Oxford Living Dictionaries (2017) Oxford, Oxford University Press.
- Eraut, M. (1994) *Developing Professional Knowledge and Competence*, London Falmer Press, Taylor & Francis Group.
- Ercikan, K. and Roth, W-M. (2005) ‘Constructing data’, in C. F. Conrad and R. C. Serlin (eds) *SAGE Handbook for Research in Education: Engaging Ideas and Enriching Inquiry*, Thousand Oaks, Sage Publications, pp. 451-476.
- Ercikan, K. and Roth, W.M. (2006) ‘What good is polarizing research into qualitative and quantitative?’ *Educational Researcher*, 35(5): 14-23.
- ESRC (2017) *Our Core Principles*. Available from: <http://www.esrc.ac.uk/funding/guidance-for-applicants/research-ethics/our-core-principles/> (Accessed 08/09/17).
- European Communities (2004) *Facing the challenge: The Lisbon Strategy for Growth and Employment* Luxembourg, Office for Official Publications of the European Communities. Available from: http://dspace.ceu.es/bitstream/10637/2481/1/Kok_W.pdf (Accessed 08/09/17).
- European Commission (2014) ‘Education and Training Monitor 2013’, Accessed http://ec.europa.eu/dgs/education_culture/repository/education/library/publications/monitor13_en.pdf (03/03/2015)
- European Commission (2015) ‘Education and Training Monitor 2014’, Accessed on http://ec.europa.eu/dgs/education_culture/repository/education/library/publications/monitor14_en.pdf (04/10/2016)
- European Parliament and European Council (2008) Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning, OJ C 111, Accessed [http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32008H0506\(01\)](http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex:32008H0506(01)) (15/05/2015)
- European Commission (2016) *A New Skills Agenda for Europe: Working together to Strengthen Human Capital, Employability and Competitiveness*, Brussels. Available from: http://www.ffp.org/uploads/document/COM_2016_381_F1_COMMUNICATION_FROM_COMMISSION_TO_INST_EN_V6_P1_852322.pdf (Accessed 08/09/17).
- European Commission (2017) *Descriptors Defining Levels in the European Qualifications Framework*. Available from: <https://ec.europa.eu/ploteus/content/descriptors-page> (Accessed

01/05/17).

European Council (2000) *Presidency Conclusions*, Lisbon European Council, Lisbon.
Available from: http://www.europarl.europa.eu/summits/lis1_en.htm (Accessed 08/09/17).

European Training Foundation (2008) Transition from education to work in EU neighboring countries. Accessed
[http://www.etf.europa.eu/webatt.nsf/0/44895ADAF385331CC125791800366B19/\\$file/Transition%20from%20education%20to%20work%20EU%20neighbouring.pdf](http://www.etf.europa.eu/webatt.nsf/0/44895ADAF385331CC125791800366B19/$file/Transition%20from%20education%20to%20work%20EU%20neighbouring.pdf) (10/06/2016)

Evans, K. (2002) 'Taking control of their lives? Agency in young adult transitions in England and the new Germany', *Journal of Youth Studies*, 5(3): 245-269.

Evans, K. (2007) 'Concepts of bounded agency in education, work, and the personal lives of young adults', *International Journal of Psychology*, 42(2): 85-93.

Evans, K., Behrens, M. and Kaluza, J. (2000) *Learning and Work in the Risk Society: Lessons for the Labour Markets of Europe from Eastern Germany*, Basingstoke, Palgrave Macmillan.

Evans, K., Guile, D., Harris, J. and Allan, H. (2010) 'Putting knowledge to work: A new approach', *Nurse Education Today*, 30(3): 245-251.

Evans, K. and Heinz, R. W. (eds) (1994) *Becoming Adults in England and Germany*, London, Anglo-German Foundation.

Evans, K., Hodkinson, P., Rainbird, H. and Unwin, L. (2006) *Improving Workplace Learning*, Abingdon, Oxon, Routledge.

Evans, K., Rudd, P., Behrens, M., Kaluza, J. and Woolley, C. (2001) *Taking Control? Agency in Young Adult Transitions in England and Germany*, End of Award Report carried out as part of the Economic and Social Research Council's Youth Citizenship and Social Change Programme. Available from: <http://www.leeds.ac.uk/educol/documents/189447.pdf> (Accessed 08/09/17).

Evers, A., Anderson, N. and Smit-Voskuijl, O. (eds) (2005) *The Blackwell Handbook of Personnel Selection*, Oxford, Blackwell Publishing.

Field, A. (2009) *Discovering Statistics Using SPSS*, 3rd edition, London, Sage Publications.

Fernandez-Araoz, C. (2014) '21st-century talent spotting', *Harvard Business Review*, 92(6): 46-56.

Fetters, D. M. and Freshwaters, D. (2015) 'Publishing a methodological mixed methods research article', *Journal of Mixed Methods Research*, 9(3): 203-213.

Finn, K. (2017) 'Relational transitions, emotional decisions: New directions for theorising graduate employment', *Journal of Education and Work*, 30(4): 419-431.

- Fitzsimons, P. (1999) 'Human capital theory and education', in M. A. Peters (ed.) *The Encyclopaedia of Educational Philosophy and Theory*, New York, Springer.
- Flavell, J. H. (1976) 'Metacognitive aspects of problem solving', In L. B. Resnick (ed), *The nature of intelligence*. Hillsdale, Lawrence Erlbaum Associates, pp. 231-235
- Ford, J. K., Smith, E. M., Weissbein, D. A., Gully, S. M. and Salas, E. (1998) 'Relationships of goal orientation, metacognitive activity, and practice strategies with learning outcomes and transfer', *Journal of Applied Psychology*, 83(2): 218-233.
- France, A. (2007) *Understanding Youth in Late Modernity*, Milton Keynes, Open University.
- Freshwater, D. and Fisher, P. (2014) '(Con)fusing commerce and science: Mixed methods research and the production of contextualized knowledge, *Journal of Mixed Methods Research*, 8(2): 111-114.
- Fuller, A. and Unwin, L. (2009) 'Change and continuity in apprenticeship: The resilience of a model of learning', *Journal of Education and Work*, 22(5): 405-416.
- Fuller, A. and Unwin, L. (2013) 'Introduction: International Perspectives on Apprenticeship', in A. Fuller and L. Unwin (eds) *Contemporary Apprenticeship: International Perspectives on an Evolving Model of Learning*. Abingdon & New York, Routledge, pp. 1-11.
- Fuller, A., Hodkinson, H., Hodkinson, P., & Unwin, L. (2005) 'Learning as peripheral participation in communities of practice: a reassessment of key concepts of workplace learning. *British Educational Research Journal*, 31(1), 49-68.
- Funke, M., Schularick, M. and Trebesch, C. (2015) 'Going to extremes: Politics after financial crises, 1870-2014', *CESifo* working paper no. 5553. Available from: <http://www.statewatch.org/news/2015/oct/financial-crises-cesifo-wp-5553.pdf> (Accessed 08/09/17).
- Furlong, A. (2009) *Handbook of Youth and Young Adulthood: New perspectives and agendas*, Abingdon, Routledge.
- Furlong, A. and Cartmel, F. (2007) *Young People and Social Change, New Perspectives*, Berkshire, Open University Press.
- Furlong, A., Woodman, D. and Wyn, J. (2011) 'Changing times, changing perspectives: reconciling 'transition' and 'cultural' perspectives on youth and young adulthood', *Journal of Sociology*, 47(4), pp. 355-370.
- Gallup (2010) Employers' perception of graduate employability. Accessed http://www.eurosaire.prd.fr/7pc/doc/1291735549_employability_fl_304_sum_en.pdf (26/08/2016)
- Gangl, M. (2003) 'Returns to education in context: individual education and transition

outcomes in European labour markets', in Müller, W. and Gangl, M. (eds) *Transitions from education to work in Europe: the integration of youth into EU labour markets*, Oxford, Oxford University Press on Demand, pp. 156-185.

Garrouste, C. (2011) 'Towards a benchmark on the contribution of education and training to employability: Methodological note, *JRC Scientific and Technical Reports*, Luxembourg, Publications Office of the European Union. Available from: http://publications.jrc.ec.europa.eu/repository/bitstream/111111111/22533/1/eur_methodological%20note_sept2011.pdf (Accessed 08/09/17).

Gaskell, J. (1995) 'Gender and the school-work transition in Canada and the USA', in L. Bash and A. Green (eds) *World Yearbook of Education 1995: Youth, Education and Work*, New York, Routledge, pp. 80-92.

Gatewood, R., Feild, H. S. and Barrick, M. (2015) *Human resource selection*, Toronto, Nelson Education.

Gick, M. L. and Holyoak, K. J. (1980) 'Analogical problem solving', *Cognitive Psychology*, 12: 306-355.

Gick, M. L., & Holyoak, K. J. (1983). Schema induction and analogical transfer. *Cognitive psychology*, 15(1), 1-38.

Giddens, A. (1991) *Modernity and self-identity: Self and society in the late modern age*. Stanford university press.

Goleman, D., Boyatzis, R. and McKee, A. (2001) 'Primal Leadership: The Hidden Driver of Great Performance', *The Harvard Business Review*, 79(11): 42-53.

Gonczi, A. P. (1996) 'Re-conceptualising competency-based education and training: with particular reference to education for occupations in Australia' (Doctoral dissertation).

Goodwin, J. and O'Connor, H. (2007) 'Continuity and change in the experiences of transition from school to work', *International Journal of Lifelong Education*, 26(5): 555-572.

Granville, G., and Reilly, M. (2003) 'Speaking from Experience' Boundary-crossing within a Pre-vocational Education Programme in Ireland', in T. Tuömi-Grohn and Y. Engeström (eds.) *Between School and Work: New Perspectives on Transfer and Boundary-crossing*, Oxford, Elsevier, pp. 179-199.

Grant, J. (1999) 'The incapacitating effects of competence: a critique', *Advances in Health Sciences Education*, 4(3): 271-277.

Gray, E. D. (2014) *Doing Research in the Real World* London, Sage.

Green, F. (2011) *What is Skill? An Inter-Disciplinary Synthesis*, LLAKES research paper, The Centre for Learning and Life Chances in Knowledge Economies and Societies, Institute of Education, University of London. Available from:

<http://www.llakes.ac.uk/sites/default/files/Green%20-%20What%20is%20Skill%20-%20final.pdf> (Accessed 08/09/17).

Green, F. (2013) *Skills and Skilled Work: An Economic and Social Analysis*, Oxford, Oxford University Press.

Greene, J. (2007) *Mixed Methods In Social Inquiry* San Francisco, John Wiley and Sons.

Greene, J. (2015) 'Preserving distinctions within the multimethod and mixed methods research merger, in N. S. Hesse-Biber and B. Johnson (eds) *The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry*, Oxford, Oxford University Press, pp. 1-18.

Greene, J. C. and Caracelli, V. J. (2003) 'Making paradigmatic sense of mixed methods practice', *Handbook of mixed methods in social and behavioral research*, 9: 91-110.

Greeno, J. (1997) 'On claims that answer the wrong questions', *Educational Researcher*, 26(1): 5-17.

Greeno, J. (1998) 'The situativity of knowing, learning and research', *American Psychologist* 53(1): 5-26.

Greeno, J., Moore, J. L. and Smith, D. R. (1993) 'Transfer of situated learning', in D. Detterman and R. Sternberg (eds) *Transfer on Trial: Intelligence, Cognition and Construction*, Norwood, NJ, Ablex Publications.

Greeno, J., Collins, A. M. and Resnick, L. B. (1996) 'Cognition and learning', in D. Berliner and R. Calfee (eds) *Handbook of Educational Psychology*, New York, Macmillan, pp. 15-46.

Grek, S., (2009) 'Governing by numbers: The PISA 'effect' in Europe', *Journal of education policy*, 24(1), pp.23-37.

Grossen M, Salazar Orvig A (2011) 'Dialogism and dialogicality in the study of the self', *Culture & Psychology*, 17(4), 491–509.

Grugulis, I., Warhurst, C. and Keep, E. (2004) 'What's happening to skill? in C. Warhurst, I. Grugulis and E. Keep (eds) *The Skills that Matter*, Basingstoke, Palgrave Macmillan, pp. 1-18.

Guile, D. (2005) *Knowledge, Activity and Mediation: A Critique of the 'Knowledge Economy' Thesis and its Implications for a Social Theory of Pedagogy*, unpublished PhD thesis, London, University of London.

Guile, D. (2009). *Questioning the Simplistic Link between Qualifications and Labour Market Entry: New Forms of Expertise and Learning in the Creative and Cultural Sector*, LLAKES research paper 2. Available from: <http://www.llakes.ac.uk/sites/default/files/Guile%20Final.pdf> (Accessed 08/09/17).

Guile, D (2010) *The learning challenge of the knowledge economy*, Rotterdam, Sense

Publishers.

Guile, D. (2011a) 'Interprofessional activity in the "space of reasons": Thinking, communicating and acting', *Vocations and Learning*, 4(2): 93-111.

Guile, D. (2011b) 'Interprofessional learning: Reasons, judgement, and action, *Mind, Culture, and Activity*, 18(4): 342-364.

Guile, D. (2012) 'Inter-professional working and learning: "Recontextualising" lessons from "project work" for programmes of initial professional formation', *Journal of Education and Work*, 25(1): 79-99.

Guile, D. (2014) 'Professional knowledge and professional practice as continuous recontextualisation', in Young, M. and Muller, J. (eds) *Knowledge, expertise and the professions*, London, Routledge, pp.78-92.

Guile, D. (forthcoming) 'Expertise, Project Work and Internship: implications for professional formation'.

Guile, D. and Lahiff, A. (2013) *Internship: Conventional Wisdom, Models & Recommendations*, LLAkes Research Papers – Creative Skillset, Institute of Education, University of London.

Guion, R. (2011) *Assessment, Measurement, and Prediction for Personnel Decisions*, Hove, Routledge.

Hager, P. (2011) 'Theories of workplace learning', in M. Malloch, L. Cairns, K. Evans and N. B. O'Connor (eds) *The SAGE Handbook of Workplace Learning*, Thousand Oaks, Sage Publications, pp. 17-32.

Hager, P. and Gonczi, A. (1996) 'What is competence?', *Medical teacher*, 18(1):15-18

Hager, P. and Hodkinson, P. (2009) 'Moving beyond the metaphor of transfer of learning', *British Educational Research Journal*, 35(4): 619-638.

Hall, D. T. (2004) 'The protean career: A quarter-century journey', *Journal of vocational behavior*, 65(1): 1-13.

Hammersley, M. (1995) *The Politics of Social Research*, London, Sage.

Hammersley, M. and Atkinson, P. (1995) *Ethnography, Principles in Practice*, London and New York, Routledge.

Hannan, D. F., Raffe, D. and Smyth, E. (1996) *Cross-National Research on School to Work Transitions: An Analytical Framework* (commissioned by OECD secretariat). Available from: <https://search.oecd.org/edu/skills-beyond-school/1925587.pdf> (Accessed 08/09/17).

Hansen, H. (2011) 'Rethinking certification theory and the educational development of the United States and Germany', *Research in Social Stratification and Mobility*, 29(1): 31-55.

Harvey, L. (2001) 'Defining and measuring employability', *Quality in Higher Education*, 7(2): 97-109.

Harvey, L. (2005) 'Embedding and integrating employability', *New Directions For Institutional Research*, 128: 13-28.

Haskell, E. R. (2001) *Transfer of Learning: Cognition, Instruction, and Reasoning*. San Diego, Academic Press.

Hay Consulting (2015) 'Talking about their generation – Why it's time to start seeing the potential in graduates and stop believing everything you hear'. Hey group. Accessed http://focus.kornferry.com/wp-content/uploads/2015/08/Are_you_unlocking_your_graduates_potential_Hay_Group.pdf (25/09/2016)

Heath, S. and Kenyon, L. (2001) 'Single Young Professionals and Shared Household Living', *Journal of Youth Studies*, 4:83-100

Hedegaard, M. (2008) 'Developing a dialectic approach to researching children's development' in M. Hedegaard and M. Fler (eds) *Studying Children: A Cultural- Historical approach*. Maidenhead, Open University Press. pp.10-30

Hedegaard, M. and Edwards, A. (2014) 'Transitions and children's learning'. *Learning, Culture and Social Interaction*. 3(3), pp.185-187

Helve, H. and Evans, K. (2013) *Youth and Work Transitions in Changing Social Landscape*, London, The Tufnell Press.

Helve, H., Leccardi, C. and Kovacheva, S. (2005) 'Youth research in Europe', in H. Helve and G. Holm (eds) *Contemporary Youth Research: Local Expressions and Global Connections*, Aldershot, Ashgate, pp. 15-32.

Hesketh, A. (1998) *Graduate Employment and Training towards the New Millennium*, Cambridge, Hobsons.

Hesse-Biber, S.N. (2010). *Mixed method research; Merging theory with practice*. New York: Guilford Press

Hesse-Biber, S. N. and Johnson, R. B. (eds) (2015) *The Oxford handbook of multimethod and mixed methods research inquiry*, Oxford, Oxford University Press.

Hesse-Biber, S. N. (2015) 'Introduction: Navigating a turbulent research landscape: Working the boundaries, tensions, diversity, and contradictions of multimethod and mixed methods inquiry', in N. S. Hesse-Biber and R. B. Johnson (eds) *The Oxford Handbook of Multimethod and Mixed Methods Research Inquiry*, Oxford, Oxford University Press, pp. 1-39.

Heinz, W.R (2009) 'Youth transitions in an age of uncertainty', in Furlong (ed) *Handbook of*

Youth and Young adulthood, Abingdon, Routledge, pp. 3-13

Hinchliffe, G. W. and Jolly, A. (2011) 'Graduate identity and employability', *British Educational Research Journal*, 37(4): 563-584.

High Fliers Research (2015) *The graduate market in 2015*.

Accessed https://www.highfliers.co.uk/download/2015/graduate_market/GMReport15.pdf (15/05/2017)

High Fliers Research (2016) *The graduate market in 2016*. Accessed on

https://www.highfliers.co.uk/download/2016/graduate_market/GMReport16.pdf (15/05/2017)

Hirst, W. and Manier, D. (1999) 'Opening vistas for cognitive psychology', in L. Martin, K. Nelson and E. Tobach (eds) *Sociocultural Psychology: Theory and Practice of Doing and Knowing*, Cambridge, Cambridge University Press, pp. 89-125.

Hirsh, W., Pollard, E. Artess, J.(2015) 'Changing employer practices in graduate recruitment: implications for career development', *National Institute for Careers Education and Counselling*, 35 (1).

Hoffman, T. (1999) 'The meanings of competency', *Journal of European Industrial Training*, 23(6): 275-86.

Hodkinson, P., Biesta, G. and James, D. (2007) 'Understanding Learning Cultures', *Educational Review*, 59(4): 415-427.

Holford, A. (2017) 'Access to and Returns from Unpaid Graduate Internships', *IZA Discussion Paper No.104845*

Hodgson, G. M. (2009) 'The great crash of 2008 and the reform of economics', *Cambridge Journal of Economics*, 33(6): 1205-1221.

Holland, D., Lachicotte, W. S., Skinner, D. and Cain, C. (2001) *Identity and Agency in Cultural Worlds*, Massachusetts, Harvard University Press.

Holm, G. and Helve, H. (2005) 'Introduction', in H. Helve and G. Holm (eds) *Contemporary Youth Research: Local Expressions and Global Connections*, Aldershot, Ashgate, pp. xi-xv.

Holmes, C., Mayhew, K. and Keep, E. (2012) *Ten Big Questions for Higher Education*, SKOPE Issues Paper 31. Available from: <http://www.skope.ox.ac.uk/wp-content/uploads/2014/04/Issues-Paper-31.pdf> (Accessed 08/09/17).

Holmes, L. (2001) *Towards a Relational Perspective on Higher-Level Learning and Skill: Graduate Employability and Managerial Competence*, unpublished PhD thesis, London, University of London.

- Holmes, L. (2006) *Reconsidering Graduate Employability: Beyond Possessive-Instrumentalism*, Seventh International Conference of HRD Research and Practice Across Europe, University of Tilburg.
- Holmes, L. (2013) 'Competing perspectives on graduate employability: Possession, position or process?' *Studies in Higher Education*, 38(4): 538-554.
- Holmes, L. (2015) 'Becoming a graduate: The warranting of an emergent identity, *Education + Training*, 57(2): 219-238.
- Holmes, L. (2017) 'Graduate employability: Future Directions and debate', in M. Tomlinson and L. Holmes (eds) *Graduate Employability in Context: Theory, Research and Debate*. London, Palgrave Macmillan, pp. 350-371.
- Holzkamp, K. (2013) 'Psychology from the Standpoint of the Subject – Selected Writings of Klaus Holzkamp', in E. Schraube and Osterkamp, U. (eds) *Psychology from the Standpoint of the Subject – Selected Writings of Klaus Holzkamp*, New York, Palgrave Macmillan, pp. 19-230
- Horton, S. (2000) 'Introduction – the competency movement: Its origins and impact on the public sector', *International Journal of Public Sector Management*, 13(4): 306-318.
- Hughes, J., Jewson, N., and Unwin, L. (2007) *Communities of Practice: Critical Perspective*, Milton Park, Routledge.
- Humphrey, C. (2012) 'Dilemmas in doing insider research in professional education', *Qualitative Social Work*, 12, 5, p.572-586
- Hyland, T. (1997) 'Reconsidering competence', *Journal of Philosophy of Education*, 31(3): 491-503.
- Hyland, T. (2006) 'Swimming Against the Tide: Reductionist Behaviourism in the Harmonisation of European Higher Education Systems', *Prospero*, 12(1): 24–30.
- Hyland, T. (2014) 'Competence', in C. D. Philips (ed.) *Encyclopedia of Educational Theory and Philosophy*, City, Sage Publication Thousand Oaks, pp. 166-167.
- Højholt, C., and Schraube, E. (2016) 'Introduction: Toward a Psychology of Everyday living', in E. Schraube and C. Højholt, (eds) *Psychology and The Conduct of Everyday Life*, London and New York, Routledge, pp. 1-15.
- Ilyenkov, V. E. (2007[1975]) 'A contribution to a conversation about Mescheriakov', *Journal of Russian and East European Psychology*, 4(45): 85-94.
- Ilyenkov, V.E (1977) *Dialectic Logic, Essays on Its History and Theory*. Moscow. Progress Publishers,

Inkson, K. (2008) 'The boundaryless career', in S. Cartwright and L. K. Cooper (eds) *The Oxford Handbook of Personnel Psychology*, Oxford, Oxford University Press, pp. 545-563.

International Labour Office (ILO). (2014). *Skills mismatch in Europe; Statistics Brief* Geneva. Available from: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_315623.pdf (Accessed 15/09/17)

James, S., Warhurst, C., Commander, J., Lindsay, K. and Tholen, G. (2011) *The Five Obstacles that Hamper Better Understanding of Graduate Labour and Skills*, SKOPE Issues Paper No.27. Available from: <http://www.skope.ox.ac.uk/wp-content/uploads/2014/04/issuespaper27.pdf> (Accessed 08/09/17).

James, S., Warhurst, C., Tholen, G. and Commander, J. (2013) 'What we know and what we need to know about graduate skills', *Work, Employment & Society*, 27(6): 952-963.

Jessop, B. (2008) 'A Cultural Political Economy of Competitiveness and its Implications for Higher Education', in B. Jessop, N. Fairclough and R. Wodak (eds) *Education and the Knowledge-Based Economy in Europe*, Rotterdam/Taipei, Sense Publishers, pp. 13-40.

Jobert, A., Marry, C. and Tanguy, L. (1997) 'Comparisons between an area of research in Germany, Great Britain and Italy', in A. Jobert, C. Marry, L. Tanguy and H. Rainbird (eds) *Education and Work in Great Britain, Germany and Italy*. London, Routledge, pp. 1-13.

Johnson, B. and Christensen, L. (2010) *Educational Research, Quantitative, Qualitative and Mixed Approaches*, London, Sage Publications.

Johnson, R. B., Onwuegbuzie, A.J. and Turner, L.A. (2007) 'Toward a definition of mixed methods research', *Journal of Mixed Methods Research*, 1(2): 112-133.

Jones, A. (2009) 'Generic attributes as espoused theory: The importance of context', *Higher Education*, 58(2): 175-191.

Jones, G. and Wallace, C. (1992) *Youth, Family and Citizenship*, Buckingham, Open University Press.

Jones, N. and Schneider, B. (2009) 'The influence of aspirations on educational and occupational outcomes', In A. Furlong (ed.) *Handbook of Youth and Young Adulthood: New Perspectives and Agendas*, London, Routledge, pp. 392-398.

Jordan, A., Carlile, O. and Stack, A. (2008) *Approaches to Learning: A Guide for Teachers*, Maldenhead, Open University Press.

Jovchelovitch, S. (2007) *Knowledge in Context, Representations, Community and Culture*, London and New York, Routledge.

Judd, C. H. (1908) 'The relation of special training to general intelligence'. *Educational Review*, 36, pp. 28-42.

Katz, D. (1950) *Gestalt Psychology: Its Nature and Significance*, New York, The Ronald

Pres Company.

Katz, S. M. (1993) 'The entry level engineer: Problems in transition from student to professional', *Journal of Engineering Education*, 82(3): 171-174

Keeley, B. (2007) *How What you Know Shapes your Life*, Paris, OECD Publishing.

Keep, E. (2012) *Youth Transitions, the Labour Market and Entry into Employment: Some Reflections and Questions*, Skope Research Paper 108. Available from: <http://www.skope.ox.ac.uk/wp-content/uploads/2014/04/WP108.pdf> (Accessed 08/09/17).

Kirkpatrick Johnson, M. and Monserud, M. (2009) 'Values and related beliefs', in A. Furlong (ed.) *Handbook of Youth and Young Adulthood: New Perspectives and Agendas*, London and New York, Routledge, pp. 384-391.

Kirsch, I. and Thorn, W. (2013) 'The Programme for International Assessment of Adult Competencies: An Overview', *Technical report of the Survey of Adult Skills*, Paris, OECD.

Kirsch, I. and Yamamoto, K. (2013) 'PIAAC assessment design', *Technical Report of the Survey of Adult Skills*, Paris, OECD.

Kirshner, N. and Whitson, A.J (1997). *Situated cognition. Social, semiotic and psychological perspectives*. Mahwah, Lawrence Erlbaum.

Kitzinger, J. (1994) 'The methodology of focus groups: The importance of interaction between research participants', *Sociology of Health & Illness*, 16(1): 103-121.

Klein, N. (2000) *No Logo*, London, Flamingo.

Konkola, R., Tuomi-Gröhn, T., Lambert, P. and Ludvigsen, S. (2007) 'Promoting learning and transfer between school and workplace', *Journal of Education and Work*, 20(3): 211-228.

Korkki, P. (2011) 'The internship as inside track', *The New York Times*, March 25 [online]. Available from: <http://www.nytimes.com/2011/03/27/jobs/27searches.html> (Accessed 08/09/17).

Kozulin, A. (2005) 'The concept of activity in Soviet psychology: Vygotsky, his disciples and critics', in H. Daniels (ed.) *An Introduction to Vygotsky*, London and New York, Routledge, pp. 99-122.

Krueger, R. and Casey, M. (2015) *Focus Groups, A practical guide for Applied Research*, Fifth Edition, London: Sage Publication.

Kvale, S. (1996) *An Introduction to Qualitative Research Interviewing*, London, Sage Publications.

Kvale, S. and Brinkmann, S. (2009) *InterViews: Learning the Craft of Qualitative Research Interviewing*, Second Edition, Thousand Oaks, Sage publications.

- Langemeyer, I. and Roth, W-M. (2006) 'Is cultural-historical activity theory threatened to fall short of its own principles and possibilities as a dialectical social science?' *Outlines: Cultural Practice Studies*, 8(2): 20-42.
- Lambert, P. (2003) 'Promoting developmental transfer in Vocational Teacher Education, in T. Tuomi-Grohn and Y. Engeström (eds) *Between School and Work: New Perspectives on Transfer and Boundary-Crossing*, Bingley, Pergamon, pp. 233-254
- Lave, J. (1996a). 'Teaching as learning', *Mind, Culture and Activity*, 3(3): 149-164.
- Lave, J. (1996b) 'Introduction: The practice of learning', in S. Chaiklin and J. Lave (eds) *Understanding Practice: Perspectives on Activity and Context*, Cambridge, Cambridge University Press, pp. 3-35.
- Lave, J. (1988) *Cognition in Practice: Mind, Mathematics and Culture in Everyday Life*, Cambridge, Cambridge University Press.
- Lave, J., Smith, S., and Butler, M. (1989) 'Problem Solving in Everyday Practice', in C. Randall and E. Silver, (eds.). Reston, Virginia: Lawrence Erlbaum Associates; National Council of Teachers of Mathematics, pp. 61-82.
- Lave, J. and Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*, Cambridge, Cambridge University Press.
- Lave, J. (2008) 'Situated Learning and Changing Practice', in A. Amin and J. Roberts, (eds.) *Community, Economic Creativity, and Organization*, Oxford, Oxford University Press, pp. 283-297.
- Le Deist Delamare, F. and Winterton, J. (2005) 'What is Competence?' *Human Resource Development International*, 8,1, pp. 27-46
- Leary, D. D. (1990) *Metaphors in the History of Psychology*, Cambridge, Cambridge University Press.
- Leberman, S., McDonald, L. and Doyle, S. (2006) *The Transfer of Learning Participants' Perspectives of Adult Education and Training*, Hampshire, Gower.
- Lent, R. W. and Worthington, R. L. 'Applying career development theories to the school-to-work transition process', *Career Development Quarterly*, 47(4): 291-296.
- Leontyev, A. N. (2009) *The Development of Mind*, Pacifica, Marxist Internet Archive.
- Leontyev, A. N. (1978) *Activity, Consciousness, Personality*, Englewood Cliffs, Prentice-Hall.
- Leontyev, A. N. (1981) *Problems of the Development of Mind*, Moscow, Progres.
- Lewis, F. C. (1905) 'A study in formal discipline', *The School Review*, 13(4): 281-292.

- Liamputtong, P. (2013) *Qualitative Research Methods*, Oxford, Oxford University Press.
- Lin, V. (2004) 'Book review: *Competencies for a Successful Life and Well-Functioning Society*', *Australian and New Zealand Journal of Public Health* 28(3): 298-300.
- Lincoln, Y. S. and Guba, G. E. (1985) *Naturalistic Inquiry*, London, Sage Publications.
- Linell, P. (1998) *Approaching Dialogue: Talk, Interaction and Contexts in Dialogical Perspectives*, Amsterdam, John Benjamins Publishing Company.
- Linell, P. (2009) *Rethinking Language, Mind and World Dialogically: Interactional and Contextual Theories of Human Sense-Making*, Charlotte IAP, Information Age Publishing.
- Linell, P. and Rommetveit, R. (2011). 'The many forms and facets of morality in dialogue: Epilogue for the special issue', *Research on Language and Social Interaction*, 21(3-4): 465-473.
- Linell, P. and Thunqvist, P. D. (2003) 'Moving in and out of framings: Activity contexts in talks with young unemployed people within a training project', *Journal of Pragmatics*, 35(3): 409-434.
- Livingstone, D. W. (ed.) (2010) *Lifelong learning in paid and unpaid work*, Oxfordshire, Routledge.
- Little, B. and Arthur, L. (2010) Less time to study, less well prepared for work, yet satisfied with higher education: A UK perspective in links between higher education and the labour market, in *Journal of Education and Work*, Vol. 23, No. 3, pp275-290
- Little, B. (2011) 'The UK Bachelors Degree – A Sound Basis for Flexible Engagement with an Unregulated Labour Market? Scomburg, H. and Teichler, U. (eds) *Employability and Mobility of Bachelor graduates in Europe*. Key results of the Bologna Process. Sense Publishers, Rotterdam, Braninp. 229-253
- Lobato, J. (2006) 'Alternative perspectives on the transfer of learning: History, issues, and challenges for future research', *Journal of the Learning Sciences*, 15(4): 431-449.
- Loftus, S. (2010) 'Exploring communities of practice', *Education for future practice*, Rotterdam, Sense Publishers, pp. 41-50.
- Lowden, K., Hall, S., Elliot, D., and Lewin, J. (2011) 'Employers' Perceptions of the Employability Skills of New Graduates', London: The Edge Foundation. Accessed https://www.kent.ac.uk/careers/docs/Graduate_employability_skills%202011.pdf (15/06/15)
- Ludvigsen, S. R., Havnes, A. and Lahn, L. C. (2003) 'Workplace learning across activity systems: a case of study of sales engineers', in T. Tuomi-Grohn and Y. Engeström (eds) *Between School and Work: New Perspectives on Transfer and Boundary-crossing*, Amsterdam, Elsevier Science, pp. 292-310.
- Lundsteen, N. (2011) *Learning between University and the World of Work*, unpublished PhD

thesis, Oxford, University of Oxford.

Lum, G. (2013) 'Competence: A tale of two constructs', *Educational Philosophy and Theory*, 45(12): 1193-1204.

Luria, R. A. (1968) *The Mind of a Mnemonist: A Little Book about a Vast Memory*, New York and London, Basic Books Inc.

Luria, R. A. (1976) *Cognitive Development: Its Cultural and Social Foundations*, Cambridge and London, Harvard University Press.

McCall, R. B. and Applebaum, M. I. (1991). Some issues of conducting secondary analysis. *Developmental psychology*. Vol. 27, No. 6, 911-917.

MacDonald, R. (2011) 'Youth transitions, unemployment and underemployment', *Journal of Sociology*, 47(4): 427-444.

MacDonald-Ross, M. (1973) 'Behavioural Objectives- A Critical Review', *Instructional Science*, 2(1): 1-51.

Marsden, D. (2007) 'Labour market segmentation in Britain: The decline of occupational labour markets and the spread of "entry tournaments"', *Économies et Sociétés* 28: 965-998.

Marsden, D. (2010) 'The Growth of Extended 'Entry Tournaments' and the Decline of Institutional Occupational Labour Markets in Britain, Centre for Economic Performance.

Markova, I. (1982) *Paradigms Thought and Language*, New York, John Wiley and Sons.

Markova, I. (2003) *Dialogicality and Social Representations: The Dynamics of Mind*, Cambridge, Cambridge University Press.

Markova, I. and Linell, P. (1996) 'Coding elementary contributions to dialogue: Individual acts versus dialogical interactions', *Journal for the Theory of Social Behaviour* 26(4): 353-373.

Marková, I., Linell, P., Grossen, M. and Salazar Orvig, A. (2007) *Dialogue in Focus Groups, Exploring Socially Shared Knowledge*, London, Equinox.

Mason, G. (2002) 'High skills utilisation under mass higher education: graduate employment in service industries in Britain', *Journal of Education and Work*, 15(4): 427-456.

Mason, J. (2006) *Six Strategies for Mixing Methods and Linking Data in Social Science Research*, working paper, ESRC National Centre for Research Methods. Available from: http://eprints.ncrm.ac.uk/482/1/0406_six%20strategies%20for%20mixing%20methods.pdf (Accessed 08/09/17).

Maxwell, A. J. and Loomis, M. D. (2003) 'Mixed methods design: An alternative approach', in A. Tashakkori and C. Teddlie (eds) *Handbook of Mixed Methods In Social & Behavioural Research*, Thousand Oaks, Sage Publications, pp. 241-272.

Mayer, R. E. and Wittrock, M. C. (eds) (1996) 'Problem solving transfer', In D. Berliner and R. Calfee (eds) *Handbook of Educational Psychology*, Basingstoke, Palgrave Macmillan.

Mayhew, K. (1999) 'The assessment: Knowledge, skills, and competitiveness', *Oxford Review of Economic Policy*, 15(1): 1-15.

McClelland, D. C. (1973) 'Testing for competence rather than for intelligence', *American psychologist*, 28(1): 1.

McClelland, D. C. (1998) 'Identifying competencies with behavioral-event interviews', *Psychological science*, 9(5): 331-339.

Mertens, D. (1998) *Research Methods in Education and Psychology: Integrating Diversity with Quantitative and Qualitative Approaches*, Thousand Oaks, Sage Publications.

Mertens, D., Bazeley, P., Bowleg, L., Fielding, N., Maxwell, J., Molina-Azorin, J. F. and Niglas, K. (2016) *The Future of Mixed Methods: A Five Year Projection to 2020*, task force report. Available from: <http://mmira.wildapricot.org/resources/Documents/MMIRA%20task%20force%20report%20Jan2016%20final.pdf> (Accessed 08/09/17).

McGuinness, C. (2005) 'Behind the acquisition metaphor: conceptions of learning and learning outcomes in TLRP school-based projects', *Curriculum journal*, 16(1): 31-47.

Mills, M. and Blossfeld, H-P. (2005) 'Globalization, uncertainty and the early life course: A theoretical framework', in H-P. Blossfield, E. Klijsing, M. Mills and K. Kurz (eds) *Globalization, Uncertainty and Youth in Society*, London and New York, Routledge, pp. 1-24.

Milward, L. (2005) *Understanding Occupational & Organizational Psychology*, London, Sage Publications.

Minick, N. J. (1985) *L.S. Vygotsky and Soviet Activity Theory: New Perspectives on the Relationship between Mind and Society*, unpublished PhD thesis, Evanston, IL, Northwestern University.

Mislevy, R., Moss, P. A. and Gee, J. P. (2009a) 'On qualitative and quantitative reasoning in validity', in K. Ercikan and W-M. Roth (eds) *Generalizing from Educational Research: Beyond Qualitative and Quantitative Polarization*, London and New York, Routledge, pp. 67-100.

Mislevy, R., Steinberg, L. S and Almond, R. G. (2009b) 'On the structure of educational assessments', *Measurement: Interdisciplinary Research and Perspective*, 1(1): 3-62.

Mislevy, R., Wilson, M. R., Ercikan, K. and Chudowsky, N. (2002) *Psychometric Principles in Student Assessment* (CSE Technical Report), Los Angeles, California University. Available from: <http://cresst.org/wp-content/uploads/TR583.pdf> (Accessed 08/09/17).

- Moreau, M. and Leathwood, C. (2006) 'Graduates' employment and the discourse of employability: A critical analysis', *Journal of Education and Work*, 19(4): 305-324.
- Morgan, L., D. (1997) *Focus Groups as Qualitative Research: Planning and Research Design for Focus Groups*. London, Sage Research Methods.
- Morley, L. (2001) 'Producing new workers: Quality, equality and employability in higher education', *Quality in Higher Education*, 7(2): 131-138.
- Mortimer, N. (2013) 'Internships: The key to a job in financial services', *The Financial Times*, 23 May.
- Mulder, M. (2014) 'Introduction to the volume', in M. Mulder and J. Winteron (eds) *Competence-based Vocational and Professional Education: Bridging the Worlds of Work and Education* Dordrecht, Springer International Publishing. Pp.1-43
- Mulderrig, J. (2008) 'Using keywords analysis in CDA: Evolving discourses of the knowledge economy in education', in B. Jessop, N. Fairclough and R. Wodak (eds) *Education and the Knowledge-Based Economy in Europe*, Rotterdam/Taipei, Sense Publishers, pp.149-170.
- Müller, W. and Gangl, M. (2003) 'The transition from school to work: A European Perspective', in W. Müller and M. Gangl (eds) *Transition from Education to Work in Europe: The integration of Youth into EU Labour Markets*, Oxford, Oxford University Press, pp. 1-23.
- Neisser, U. (1976) *Cognition and Reality: Principles and Implications of Cognitive Psychology*. San Francisco, W.H. Freeman and Company.
- Neuman, L. (2007) *Basics of Social Research: Quantitative and Qualitative Approaches*, Boston, Pearson Education.
- Nguyen, A. N. and Bradley, S. (2004) 'The school-to-work transition', in *International Handbook on the Economics of Education*. Cheltenham, Edward Elgar, pp. 484-521.
- Nielsen, A. D. (2007) 'Functionalism/neo-functionalism', in G. Ritzer (ed.) *The Blackwell Encyclopedia of Sociology*, Oxford, Blackwell Publishing.
- Nijhof, W. J. and Poortman, C. (2013) 'Work-study programmes for the formation of professional skills', in K. Beck and O. Zlatkin-Troitschanskaia (eds) *From Diagnostics to Learning Success: Proceedings in Vocational Education and Training*, Rotterdam, Sense Publishers, pp. 157-167.
- Norris, N. (1991) 'The trouble with competence', *Cambridge Journal of Education*, 21(3), pp. 1 – 11.
- OECD (2000) *From initial education to working life: making transitions work: preliminary edition*.
- OECD (2001) *Competences for the Knowledge Economy*, Paris, OECD Publishing. Available

from: <http://www.oecd.org/innovation/research/1842070.pdf> (Accessed 08/09/17).

OECD (2002) *Definition and Selection of Competences (DeSeCo): Theoretical and Conceptual Foundations* (annual report). Available from: <http://deseco.ch/bfs/deseco/en/index/01.parsys.70925.downloadList.59988.DownloadFile.tmp/2001annualreport.pdf> (Accessed 08/09/17).

OECD (2011) *Divided We Stand: Why Inequality Keeps Rising*, Paris, OECD Publishing.

OECD (2012a) *OECD Launches Skills Strategy to Boost Jobs and Growth*. Available from: <http://www.oecd.org/education/oecdlaunchesskillsstrategytoboostjobsandgrowth.htm> (Accessed 01/06/17).

OECD (2012b) *Better Skills Better Jobs Better Lives: A strategic Approach to Skills Policies*, Paris, OECD Publishing.

OECD (2013a) *Assessment of Higher Education Learning Outcomes Feasibility Study Report Volume 1: Design and implementation (executive summary)*. Available from: <http://www.oecd.org/edu/skills-beyond-school/AHELO%20FS%20Report%20Volume%201%20Executive%20Summary.pdf> (Accessed 08/09/17).

OECD (2013b) *The Survey of Adult Skills: Reader's Companion*, Paris, OECD Publishing. Available from: <http://www.oecd.org/skills/piaac/Skills%20%28vol%202%29-Reader%20companion--v7%20eBook%20%28Press%20quality%29-29%20oct%202013.pdf> (Accessed 08/09/17).

OECD (2013c) *Technical Report of the Survey of Adult Skills (PIAAC)*. Paris, OECD Publishing.

OECD (2016) *Enhancing Employability* (report prepared for the G20 Employment Working Group), Paris, OECD Publishing.

OECD (2017) 'Key findings: ' in *Financial Incentives for Steering Education and Training*, Paris, OECD Publishing.

Onwuegbuzie, A. and Leech, N. (2005) 'On becoming a Pragmatic Researcher: The Importance of Combining Quantitative and Qualitative Research Methodologies', *International Journal of Social Research Methodology*, 8, 5, pp. 375-387

Onwuegbuzie, A. J., Slate, J. R., Leech, N. L. and Collins, K. M. (2009) 'Mixed data analysis: Advanced integration techniques', *International Journal of Multiple Research Approaches*, 3(1): 13-33.

Packer, M. (2001) 'The problem of transfer; and the socio-cultural critique of schooling', *The Journal of the Learning Sciences*, 10(4), pp. 493-514.

Papert, S. (1994) *The Children's Machine: Rethinking School in the Age of the Computer*, New York, Basic Books.

Parker, A. and Tritter, J. (2006) 'Focus group method and methodology: Current practice and recent debate', *International Journal of Research & Method in Education*, 29(1): 23-37.

Parsons, T. (1991) *The Social System*, London, Routledge.

Parsons, T. (2007) 'An outline of the social system', in C. Calhoun, J. Gerteis, J. Moody, S. Pfaff and I. Virk (eds) *Classical Sociological Theory*, Malden, Blackwell Publishing, pp. 421-441.

Paavola, S. and Hakkarainen, K. (2005) 'The knowledge creation metaphor—An emergent epistemological approach to learning', *Science & Education*, 14(6): 535-557

Payne, J. (1985) 'Changes in the youth labour market, 1974-1981', *Oxford Review of Education*, 11(2): 167-179.

Pea, R. D. (1987) 'Socialising the knowledge transfer problem', *International Journal of Educational Research*, 11, pp. 639–663.

Perkins, N. D. and Salomon, G. (1988) 'Teaching for transfer', *Educational Leadership*, 46(1): 22-32.

Perlin, R. (2011) 'Intern Nation, How to Earn Nothing and Learn Little in the Brave New Economy', London, Verso.

Peters, A. M. (2010) 'Three forms of the knowledge economy: Learning, creativity and openness', *British Journal of Educational Studies*, 58(1): 67-88.

Piketty, T. (2014) 'Introduction', in T. Piketty (ed.) *Capital in the Twenty-first Century*, Cambridge and London, Harvard University Press, pp. 1-39.

Ployhart, E. R. (2006) 'Staffing in the 21st Century: New Challenges and Strategic Opportunities', *Journal of Management*, 32(6): 869-893.

Ployhart, E. R. and Schneider, B. (2012) 'The Social and Organizational Context of Personnel Selection', in N. Schmitt (ed.) *The Oxford Handbook of Personnel Assessment and Selection*, Oxford, Oxford University Press, pp. 48-68.

Pollard, E., Hirsh, W., Williams, M., Buzzeo, J., Marvell, R., Tassinari, A., Bertram, C., Fletcher, L., Artess, J., Redman, J. and Charlie, B. (2015) Understanding employers' graduate recruitment and selection practices. BIS Research Paper 231. Department for Business Innovation and Skills, London, UK. Accessed on <http://hdl.handle.net/10545/609154> (09/08/2016)

Pokropek, A. and Jakubowki, M. (2013) 'PIAAC tools: Stata programs for statistical computing using PIAAC data' (PIAAC), Paris, OECD Publishing.

Prince, K., Van de Wiel, M., Van der Vleuten, C., Boshuizen, H. and Scherpbier, A. (2004)

‘Junior doctors’ opinions about the transition from medical school to clinical practice: A change of environment’, *Education for Health*, 17(3): 323-331.

QS (2017) *QS Graduate Employability Ranking*, Available from: <https://www.topuniversities.com/university-rankings/employability-rankings/2017> (Accessed 08/09/17).

Raffe, D. (1987) ‘Youth unemployment in the United Kingdom 1979-1984’, in P. Brown and D. N. Ashton (eds) *Education, Unemployment and Labour Markets*, Basingstoke, Falmer Press, pp. 218-247.

Raffe, D. (2009) ‘Explaining cross-national differences in education-to-work transitions’, in A. Furlong (ed.) *Handbook of Youth and Young Adulthood*, London Routledge, pp. 105-113.

Raffe, D. (2014) ‘Explaining national difference in education-work transitions: Twenty years of research on transition system’, *European Societies*, 16(2): 175-193.

Rainbird, H. (1997) ‘The social construction of skill’, in A. Jobert, C. Marry, L. Tanguy and H. Rainbird (eds) *Education and Work in Great Britain, Germany and Italy*, Routledge, London and New York, pp. 177-192.

Rapley, M. and Hansen, S. (2006) ‘Surveys’, in S. B. Turner (ed.) *The Cambridge Dictionary of Sociology*, Cambridge, Cambridge University Press, pp. 616-617.

The Research Centre for Education and the Labour Market (ROA) (2017) *REFLEX – International Survey of Higher Education Graduates*. Available from: <http://roa.sbe.maastrichtuniversity.nl/?portfolio=reflex-international-survey-higher-education-graduates> (Accessed 11/09/17).

Reed, S. K. (1993) ‘A schema-based theory of transfer’. In D. K. Detterman & R. J. Sternberg (eds), *Transfer on trial: Intelligence, cognition, and instruction*, Norwood, Ablex. pp. 39–67

Reich, B. R. (1991) *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*, London, Vintage.

Rickinson, M., Sebba, J. and Edwards, A. (2011) *Improving Research through User Engagement*. London, Routledge

Riiheläinen, J. M. (2016) Structural Indicators on Graduate Employability in Europe – 2016. Eurydice Report. EACEA. Available from: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/images/a/ac/Graduate_Employability_.pdf (Accessed 08/09/17).

Ringer, F. (1997) *Max Weber’s Methodology: The Unification of the Cultural and Social Sciences*, London, Harvard University Press.

Rivera, L. A. (2011) ‘Ivies, extracurriculars, and exclusion: Elite employers’ use of educational credentials’, *Research in Social Stratification and Mobility*, 29(1): 71-90.

Rivera, L. A. (2012) 'Hiring as cultural matching', *American Sociological Review*, 77(6): 999-1022.

Roberts, K. (2009a) *Key Concepts in Sociology*, Basingstoke, Palgrave Macmillan.

Roberts, K. (2009b) 'Socio-economic reproduction', in A. Furlong (ed.) *Handbook of Youth and Young Adulthood: New Perspectives and Agendas*, Oxon, Routledge, pp. 14-22.

Rocco, T. S., Bliss, L. A., Gallagher, S. and Pérez-Prado, A. (2003) 'Taking the next step: Mixed methods research in organizational systems', *Information Technology, Learning, and Performance Journal*, 21(1): 19.

Rogoff, B. and Lave, J. (1984) *Everyday Cognition: Its Development in Social Context*, Cambridge and London, Harvard University Press.

Rogoff, B. (1990) *Apprenticeships in thinking. Cognitive development in social context*, Oxford, Oxford University Press.

Rosenbaum, E. J. and Alter Jones, S. (2006) 'Interactions between high schools and labour markets', in T. M. Hallinan (ed.) *Handbook of the Sociology of Education*, New York, Springer, pp. 411-436.

Roth, W-M. and Lee, Y-J. (2007) "'Vygotsky's neglected legacy": Cultural-historical activity theory', *Review of Educational Research*, 77(2): 186-232.

Roth, W-M. (2009) 'Phenomenological and Dialectical Perspective on the Relation between the General and the Particular', In K. Ercikan and W-M. Roth (eds) *Generalizing from Educational Research: Beyond Qualitative and Quantitative Polarization*, London and New York, Routledge
p.235-261

Roth, W-M (2010) *Language, Learning, Context. Taking the talk*. London: Routledge.

Royer, J. M. (1979) 'Theories of the transfer of learning', *Educational Psychologist*, 14(1): 53-69.

Roulin, N. and Bangerter, A. (2013) 'Students' use of extra-curricular activities for positional advantage in competitive job markets', *Journal of Education and Work*, 26(1): 21-47.

Ryan, P. (1999) *The School-to-Work Transition: Issues for Further Investigation*, Paris, OECD Publishing. Available from: <http://www.oecd.org/edu/skills-beyond-school/1925685.pdf> (Accessed 11/09/17).

Rychen, D. S. and Salganik, L. H. (2004) 'Book review - Key competencies for a successful life and well-functioning society', *Australian and New Zealand Journal of Public Health*, 28(3): 298-299.

- Salganik, L. H., Rychen, D. S., Moser, U. and Konstant, J. W. (1999) *Project on Competencies in the OECD Context: Analysis of Theoretical and Conceptual Foundations*, Switzerland, Neuchatel.
- Säljö, R. (2003) 'Epilogue: From transfer to boundary-crossing', in T. Tuomi-Grohn and Y. Engeström (eds) *Between School and Work: New Perspectives on Transfer and Boundary-Crossing*, Bingley, Pergamon, pp 311-321.
- Säljö, R. (2007) *Studying Learning and Knowing in Social Practices: Units of Analysis and Tensions in Theorizing*, lecture for opening of the OSAT Centre, University of Oxford.
- Säljö, R. (2009) 'Learning, learning theories and units of analysis in research', *Educational Psychologist*, 44(3): 202-208.
- Sampson, E. E. (1978) 'Scientific paradigms and social values: Wanted—a scientific revolution', *Journal of Personality and Social Psychology*, 36(11): 1332-1343.
- Sawyer, R. K. (Editor) (2006). *Cambridge handbook of the learning sciences*, New York: Cambridge University Press.
- Sandberg, J. (2000) 'Understanding human competence at work: An interpretive approach', *Academy of Management Journal*, 43(1): 9-25.
- Sandelowski, M. (2003) 'Tables or tableaux? The challenges of writing and reading mixed methods studies', in A. Tashakkori and C. Teddlie (eds) *Handbook of Mixed Methods in Social and Behavioural Research*, Thousand Oaks, Sage Publications, pp. 321-350.
- Saniter, N., and Siedler, T.(2014) 'Door opener or Waste of Time?' The effects of Student Internships on Labour Market Outcomes. Paper for IZA Institute of Labour Economics.
- Sannino, A., Daniels, H. and Gutiérrez, K. D. (2009a) 'Activity theory between historical engagement and future-making practice', in A. Sannino, H. Daniels and D. K. Gutierrez (eds) *Learning and Expanding with Activity Theory*, Cambridge, Cambridge University Press, pp. 1-19.
- Sannino, A., Daniels, H. and Gutiérrez, K. D. (eds) (2009b) *Learning and Expanding with Activity Theory*, Cambridge, Cambridge University Press.
- Sawyer, R. K. (2006) 'Introduction: The new sciences of learning', in R. K. Sawyer (ed.) *The Cambridge Handbook of the Learning Sciences*, Cambridge, Cambridge University Press, pp. 1-19.p.3-9
- Schmitt, N. (2012) 'Conceptual Outline of the Handbook of Assessment and Selection', in N. Schmitt (Ed), *The Oxford Handbook of Personnel Assessment and Selection*, Oxford, Oxford University Press,
- Schmieder, A. R. and Frame, C. M. (2007) 'Competency modelling', in G. S. Rogelberg (ed.) *Encyclopedia of Industrial and Organizational Psychology*, London, Sage, pp. 85-86.

- Schofer, E. and Meyer, W. J. (2005) 'The worldwide expansion of higher education in the twentieth century', *American Sociological Review*, 70(6): 898-920.
- Schomburg, H. and Teichler, U. (2011) *Employability and Mobility of Bachelor Graduates in Europe*, Rotterdam, Sense Publishers.
- Schoon, I. (2006) *Risk and Resilience: Adaptations in Changing Times*, Cambridge, Cambridge University Press.
- Schoon, I. and Eccles, J. S. (2014) 'Conceptualizing gender differences in aspirations and attainment', in I. Schoon and J. S. Eccles (eds) *Gender Differences in Aspirations and Attainment: A Life Course Perspective*, Cambridge, Cambridge University Press, pp. 3-26.
- Schuetze, G. H. and Casey, C. (2006) 'Models and meanings of lifelong learning: Progress and barriers on the road to a learning society', *A Journal of Comparative and International Education*, 36(3): 279-287.
- Schultz, D. and Schultz, E. S. (2011) *A History of Modern Psychology*, Belmont, Wadsworth Cengage Learning.
- Schultz, T. W. (1961) 'Investment in human capital', *The American Economic Review*, 51(1): 1-17.
- Schum, A. D. (1994) *The Evidential Foundations of Probabilistic Reasoning*, Evanston, Illinois, Northwestern University Press.
- Schunk, H. D. (2012) *Learning Theories: An Educational Perspective*, Boston, Pearson Education.
- Schwartz, N. (2007) 'Cognitive aspects of survey methodology', *Applied Cognitive Psychology*, 21: 277-287.
- Scribner, S. (1984) 'Literacy in three metaphors', *American Journal of Education*, 93(1): 6-21.
- Serafino, P. and Tonkin, R. (2014) *Intergenerational Transmission of Disadvantage in the UK & EU*, London, Office for National Statistics
- Sfard, A. (1998) 'On two metaphors for learning and the dangers of choosing just one', *Educational Researcher*, 27(2): 4-13.
- Sfard, A. (2008) *Thinking as Communicating, Human Development, the Growth of Discourses, and Mathematizing*, Cambridge, Cambridge University Press.
- Sharon, C. B. (2004) 'Conceptual confusions: Emotion work as skilled work', in C. Warhurst, I. Grugulis and E. Keep (eds) *The Skills that Matter*, Basingstoke, Palgrave, Macmillan, pp. 19-38.

Shippmann, J. S., Ash, R. A., Batjtsta, M., Carr, L., Eyde, L. D., Hesketh, B., Kehoe, J., Pearlman, K., Prien, E. P. and Sanchez, J. I. (2000) 'The practice of competency modeling', *Personnel psychology*, 53(3): 703-740.

Singley, K. M. and Anderson, R. J. (1989) *The Transfer of Cognitive Skill*, Cambridge, Harvard University Press.

Smagorinsky, P. (2011) *Vygotsky and Literacy Research, A methodological Framework*, Rotterdam, Sense Publishers.

Smit-Voskuijl, O. (2012) 'Job analysis: Current and future perspectives', in A. Evers, N. Anderson and O. Smit-Voskuijl (eds) *The Blackwell Handbook of Personnel Selection*, Hoboken, NJ, John Wiley and Sons.

Spenner, K. I. (1990) 'Skill: meanings, methods, and measures', *Work and occupations*, 17(4): 399-421.

Star, S. L. (1989) 'The structure of ill-structured solutions: boundary objects and heterogeneous distributed problem solving;', in: L. Geisser & M. N. Huhns (eds) *Distributed artificial intelligence* (vol.2) (San Mateo, CA, Morgan Kaufmann Publishers).

Stasz, C. (2001) 'Assessing skills for work: two perspectives', *Oxford Economic Papers*, 3, 1, pp.385-405

Steinberg, R. J. (1990) 'Social construction of skill: Gender, power, and comparable worth', *Work and Occupations*, 17(4): 449-482.

Stern, D. and Wagner, A. D. (1999) 'School-to-work policies in industrialized countries as responses to push and pull', in D. Stern and A. D. Wagner (eds) *International Perspectives on the School-to-Work Transition*, New York, Hampton Press..

Sternberg, J. R. and Frensch, A. P. (1993) 'Mechanisms of transfer', in K. D. Detterman and J. R. Sternberg (eds) *Transfer on Trial: Intelligence, Cognition and Instruction*, Norwood, Ablex Publishing Corporation, pp. 25-39.

Stetsenko, A. (2007) 'Being-through-doing: Bakhtin and Vygotsky in dialogue', *Cultural Studies in Science Education*, 2: 25-37.

Stetsenko, A. (2008) 'From relational ontology to transformative activist stance on development and learning: Expanding Vygotsky's (CHAT)', *Cultural Studies of Science Education*, 3: 471-491.

Stetsenko, A. (2010) 'Standing on the shoulders of giants: A balancing act of dialectically theorizing conceptual understanding on the grounds of Vygotsky's project'. In W.-M. Roth (ed.), *Re/structuring science education: ReUniting psychological and sociological perspectives*. Dordrecht, Netherlands: Springer. pp. 53–72

Stetsenko, A. and Arievitch, I. (2004) 'The self in cultural-historical activity theory: Reclaiming the unity of social and individual dimensions of human development', *Theory and Psychology*, 14(4): 475-503.

Tashakkori, A. and Creswell, W. J. (2007) 'Editorial: The new era of mixed methods', *Journal of Mixed Methods Research*, 1(3): 4-6.

Tashakkori, A. and Teddlie, C. (1998) *Mixed Methodology: Combining Qualitative and Quantitative Approaches*, Thousand Oaks, London and New Delhi, Sage Publications.

Tashakkori, A. and Teddlie, C. (eds) (2003) *Handbook of Mixed Methods In Social and Behavioural Research*, Thousand Oaks and London, Sage Publications.

Teichler, U. (2009). Student mobility and staff mobility in the European Higher Education Area beyond 2010. In B. M. Kehm, J. Huisman, & B. Stensaker (eds.), *The European Higher Education Area: Perspectives on a moving target*, Rotterdam and Taipei: Sense Publishers. pp. 183-201

Teichler, U. (2011) 'Bologna - Motor or stumbling block for the mobility and employability of graduates', in H. Schomburg and U. Teichler (eds) *Employability and Mobility of Bachelor Graduates in Europe: Key Results of the Bologna Process*, Rotterdam, Sense Publishers, pp. 3-43.

Teo, T. (2005) *The Critique of Psychology: From Kant to Postcolonial Theory*, New York, Springer.

Tholen, G., Brown, P., Power, S. and Allouch, A. (2013) 'The role of networks and connections in educational elites' labour market entrance', *Research in Social Stratification and Mobility*, 34: 142-154.

Thorndike, L.E and Woodworth, R.S. (1901) 'The influence of improvement in one mental function upon the efficiency of other functions', *Psychological Review*, 8, p.247-261

Thorndike, L.E (1914) *Educational Psychology*. New York. Columbia University

Thorndike, L. E. (1917) 'Reading as reasoning: A study of mistakes in paragraph reading', *Journal of Educational Psychology*, 8(6): 323-332.

Thorndike, L. E. (1977) *Human Learning*, Cambridge and London, The M.I.T Press.

Tolman, W. C. (1992) 'Neopositivism and perception', in W. C. Tolman (ed.) *Positivism in Psychology*, New York, Springer-Verlag, pp. 25-45.

Tomasello, M. (1999) *The Cultural Origins of Human Cognition*, Cambridge and London, Harvard University Press.

Tomasello, M. (2014) *A Natural History of Human Thinking*, Cambridge and London, Harvard University Press.

Tomlinson, M. (2008) “‘The degree is not enough’”: Students’ perceptions of the role of higher education credentials for graduate work and employability’, *British Journal of Sociology of Education*, 29(1): 49-61.

Tomlinson, M. (2010) ‘Investing in the self: Structure, agency and identity in graduates’ employability’, *Education, Knowledge, Economy*, 4(2): 73-88.

Tomlinson, M. (2012) ‘Graduate employability: A review of conceptual and empirical themes’, *Higher Education Policy*, 25: 407-431.

Tomlinson, M. and Holmes, L. (eds) (2017) *Graduate Employability in Context, Theory, Research and Debate*, Basingstoke, Palgrave Macmillan.

Toulmin, S. (1958/2003) *The Uses Of Argument*, Updated Edition, Cambridge, Cambridge University Press.

Toulmin, S. (1999) ‘Knowledge as shared procedures’ in Y. Engeström, R. Miettinen and R. L. Punamäki-Gitai (eds) *Perspectives on activity theory*, Cambridge, Cambridge University Press, p.53-63

Tremblay, K., Lalancette, D. and Roseveare, D. (2012) *Assessment of Higher Education Learning Outcomes – (AHELO)*, Feasibility Study Report, Volume 1: Design and Implementation. Paris, OECD.

Tuomi-Gröhn, T. & Engeström, Y. (2003) Conceptualising transfer: from standard notions to developmental perspectives, in: T. & Y. Engeström (Eds) *Between school and work: new perspectives on transfer and boundary crossing* (Oxford, Pergamon). Pp.19-38

Tuomi-Gröhn, T. (2003) ‘Developmental transfer as goal of internship in practical nursing’, T. Tuomi-Gröhn & Y. Engeström (Eds) *Between school and work: new perspectives on transfer and boundary crossing* (Oxford, Pergamon).

Tuomi-Gröhn, T., Engeström, Y., & Young, M. (2003) ‘From transfer to boundary-crossing between school and work as a tool for developing vocational education: An introduction’, In T. Tuomi-Gröhn & Y. Engeström (eds.), *Between school and work: New perspectives on transfer and boundary-crossing*, Amsterdam, Netherlands: Pergamon, pp. 1–18

Tymon, A. (2013) ‘The student perspective on employability’, *Studies in Higher Education*, 38(6): 841-856.

Tynjälä, P. (2008) ‘Perspectives into learning at the workplace’, *Educational Research Review*, 3(2): 130-154.

Tyyska, V. (2005) ‘Conceptualizing and theorizing youth: Global perspectives’, in H. Helve and G. Holm (eds) *Contemporary Youth Research: Local Expressions and Global Connections*, Aldershot, Ashgate, pp. 3-14.

- Usher, R. and Edwards, R. (2007) *Lifelong Learning - Signs, Discourses, Practices*, Dordrecht, Springer.
- Vallas, P. S. (1990) 'The concept of skill: A critical review', *Work and Occupations*, 17: 379-393.
- Van Kleef, J. and Werquin, P. (2012) 'PLAR in nursing: Implications of situated learning, communities of practice and consequential transition theories for recognition', *Journal of International Migration and Integration*, 14(4): 651-669.
- Varoufakis, Y. (2016) *And the weak suffer what they must?: Europe, austerity and the threat to global stability*. Random House.
- Vasilyuk, F. (1991) *The Psychology of Experiencing*, New York, Harvester Wheatsheaf.
- Verhaest, D. and Van der Velden, R. (2012) 'Cross-country differences in graduate overeducation', *European Sociological Review*, 29(3): 642-653.
- Vinchur, J. A. and Koppes Bryan, L. L. (2012) 'A History of Personnel Selection and Assessment', in N. Schmitt (ed.) *The Oxford Handbook of Personnel Assessment and Selection*, Oxford, Oxford University Press, pp. 9-31.
- Viswesvaran, C., & Ones, D. S. (2002) 'Agreements and dis- agreements on the role of general mental ability (GMA) in industrial, work, and organizational psychology', *Human Performance*, 15, 212–231.
- Vonken, M. (2014) 'Competence, Qualification, and Action Theory', in M. Mulder (ed.) *Competence-based Vocational and Professional Education: Bridging the World of Work and Education*, Switzerland, Springer International, pp. 67-82.
- Vormann, C. (2008) *Decision Making in Personnel Selection: A Policy-capturing Analysis in Emerging German IT-Firms*, unpublished PhD thesis, Bamberg, University of Bamberg.
- Vujacic, I., Djordjevic, S., Kovacevic, M. and Sunderic, I. (2013) *Overview of Higher Education and Research Systems in the Western Balkans (country report – Serbia)*. Available from: http://www.herdata.org/public/HE_and_Research_in_Serbia_FINAL_-_2.pdf (Accessed 11/09/17).
- Vygotsky, S. L. (1978) *Mind in Society: The Development of Higher Psychological Processes*, Harvard, Harvard University Press.
- Warhurst, C. and Thompson, P. (2012) 'Mapping knowledge in work, proxies or practices', in D. W. Livingstone and D. Guile (eds) *The Knowledge Economy and Lifelong Learning*, Rotterdam, Sense Publishers, pp. 43-55.
- Weber, M. (1949) *The Methodology of the Social Sciences*, New York, The Free Press.

Wegerif, R. (2008) 'Dialogic or dialectic? The significance of ontological assumptions in research on educational dialogue', *British Educational Research*, 34(3): 347-361.

Werner, C. M., Brown, B.B. and Altman, I. (2002) 'Transactionally-oriented research: Examples and strategies', in R. B. Bechtel and A. Churchman (eds) *Handbook of Environmental Psychology*, New York, John Wiley & Sons.

Wertsch, V. J. (1985) *Vygotsky and the social formation of mind*, Cambridge, Harvard University Press.

Wertsch, V. J. (1991) *Voices of the Mind: A Sociocultural Approach to Mediated Action*, Cambridge, MA, Harvard University Press.

Wertsch, V. J. (1998) *Mind as Action*, Oxford, Oxford University Press.

Wertsch, V. J. (2007) 'Mediation', in H. Daniels, Cole, M., J. Wertsch (eds), *The Cambridge Companion to Vygotsky*, Cambridge, Cambridge University Press. pp.178-193

Westwood, A. (2004) 'Skills that matter and shortages that don't', in C. Warhurst, I. Grugulis and E. Keep (eds) *Skill Trends under Capitalism and the Socialisation of Production*, Basingstoke, Palgrave, Macmillan, pp. 38-54.

Williams, M. (2003) 'The problem of representation: Realism and operationalism in survey research', *Sociological Research Online*, 8(1).

Wilkinson, S. and Kitzinger, C. (2013) 'Representing our own experience: Issues in "insider research"', *Psychology of Women Quarterly*, 37(2): 251-255.

Willis, P. (1977) *Learning to Labour: How Working Class Kids get Working Class Jobs*, London, Saxon House.

Wilson, B. and Woock, R. (1995) 'Education, work and global economic change', in L. Bash and A. Green (eds) *World Yearbook of Education 1995: Youth, Education and Work*, London, Kogan Page Limited, pp. 5-19.

Winterton, J. (2012) 'Varieties of competence: European perspectives', in M. Pilz (ed.) *The Future of Vocational Education and Training in a Changing World*, Berlin and New York, Verlag für Sozialwissenschaften/Springer VS.

Winterton, J., Delamare-Le Deist, F. and Stringfellow, E. (2006) *Typology of Knowledge, Skills and Competences: Clarification of the Concept and Prototype* (Cedefop Reference Series, 64), Luxembourg, CEDEFOP.

Woodman, D. (2009) 'The mysterious case of the pervasive choice biography: Ulrich Beck, structure/agency, and the middling state of theory in the sociology of youth', *Journal of Youth Studies*, 12(3): 243-256.

World Bank (2002) *Building Knowledge Economies: Opportunities and Challenges for EU Accession Countries*, Paris, World Bank. Available from:

<http://web.worldbank.org/archive/website01503/WEB/IMAGES/BUILDING.PDF> (Accessed 11/09/17).

Wozniak, R. H. (1975) 'A dialectical paradigm for psychological research: Implications drawn from the history of psychology in the Soviet Union', *Human Development*, 18(1-2): 18-34.

White, S.H (1996) 'Foreword', In Cole, M. *Cultural Psychology: a once and future discipline*. London. Harvard University Press. Pp.i-xxii

Wright, D.J and Marsden, V. P (2010) *Handbook of Survey Research*, Second Edition Bingley: Emerald

Wyplosz, C. (2010) *The Failure of the Lisbon Strategy*. Available from: <http://voxeu.org/article/failure-lisbon-strategy> (Accessed 11/09/17).

Young, M. (2001) 'Contextualising a new approach to learning: Some comments on Yrjö Engeström's theory of expansive learning', *Journal of Education and Work*, 14(1): 157-161.

Young, M. (2008) *Bringing Knowledge Back In: From social constructivism to social realism in the sociology of knowledge*, London and New York, Routledge.

Zimmerman, B. J. (2002) 'Becoming a self-regulated learner: An overview', *Theory into Practice* 41(2): 64-70.

Appendix A: Mixed-method research design of the thesis

Table A.1. Timeline of the thesis

Section of the thesis	Timeline
Substantive argument	October 2013 – October 2014
Methodological argument	October 2014–October 2015
Empirical argument – Quantitative	October 2015 – February 2016
Empirical argument – Qualitative	February 2016 –October 2016
Concluding section and synthesis	October 2016 – May 2017

Table A.2 Different logics of data integration, adapted from Mason (2006)

Synthesis approaches	The purpose/goal of synthesis
Rhetorical logic	Embellishing data and insights of qualitative methods with those of quantitative methods or vice versa
Corroborative logic	Type of integrative logic, using more than one method to improve the ‘measurement’ of the phenomena
Parallel logic	Asking separate questions in the same research project without synthesis
Integrative logic	Asking questions about connecting parts, segments or layers of the social whole. Integration as fitting in insights on different levels
Multi-dimensional logic	Asking questions about distinctive but intersecting questions. Integration as working through the tensions between different methodologies

Appendix B: Statistical Analysis of REFLEX Survey

REFLEX survey

REFLEX data is available at request for research purposes from the Maastricht University (The Research Centre for Education and the Labour Market, 2017) I obtained the data and passed the ethical review in Spring 2016. The Reflex data set contains representative sample (Allen, Arnesen et al. 2007) of 1578 participants from the UK (N= 1578) with 38.1% males and 60.5% females. At the time of the survey, in 2005, the median age of the participants was 27 years old. Relative to my interest in internships as proxies for horizontal expertise I distinguished two main subsample or categories of participants: a degree-only and internship group.

The **degree-only** group consists of participants who:

- Had no degree-related work experience before higher education degree
- Reported not having any degree-related work experience during higher education
- Reported their degrees not having an embedded work experience component

The **internship group** consists of participants who:

- Reported that their degree did not have a workplace component
- Reported that they managed to acquire degree-related occupational experience during their degree in an internship

- The degree-related occupational experience was less than 6 months

Thus, from the original sample (N=1578) I excluded the graduates who had work placements as part of their degree, who had both work placements within their degrees and internships, and the participants who reported having internships that were longer than 6 months because these groups did not align with the idea of internship as a short-term experience of working in a company that students secured independent of their degree-programme. The sample I used in the analysis (N=728) is described in the table.

Table B. 1 Research Sample

Sample	N
Total	1578
Internship+ Degree group	728
Degree-only	609
Internship	119

The two main groups of students will be distinguished as presented in the table (Table 2).

From the table it could be seen that the internship and degree only group **share important similarities** such as the average age, gender distribution and the level of parental (father's) education. They differ, I will show below, in the **degree composition** with degree-only group having more graduates from education and arts and humanities. The internship group has more graduates from engineering, construction and manufacturing. For this reason, in the analysis below, when appropriate, I will control for the degree domain.

Table B.2 Main characteristics of the sample

Characteristics	Degree-only group	Internship group
Length of time spent in the inter		0 3 months (median and mode)
Number of participants	N=609	N=119
Age	27 (Median)	27 (Median)
Gender	38.4% male (N=233)	36.4% males (N=43)
	61.6% females(N=374)	63.6% females (N=75)
Father's level of education	Some further or higher education level	Some further or higher education level

When it comes to **average age of the participants in the sample**, my data violated the two assumptions of parametric tests: the distribution of data for both groups was not normal and the data showed extreme outliers for both degree-only and internship group. For instance, two participants were 35 years (outlier 716) old and 38 years old (outlier 622), They were identified as extreme outliers which I removed from the analysis. Other outliers were not unusual values because they included 28 year olds and 27 year olds, five years upon graduation. This meant that they graduated from their studies when they were 23-24 years old, and thus, I decided not to remove these outliers. Because of the violation of the normal distribution and the outliers I kept in the sample, I chose to use median as an indicator of age. Both degree-only and internship group were 27 years old five years upon graduation.

The gender distribution in the two groups is very similar with approximately a third of the sample in each group male and two thirds female. A chi-square analysis of the statistical differences in gender proportion showed that there were no statistically significant differences in internship and degree-only group in terms of proportions of male and female participant ($p=0.691$; $\chi^2(1)=0.157$)

In terms of **Father's education**, which is in the sociological literature taken as proxy for class (e.g.Serafino and Tonkin 2014). From the table (Table 3) it could be observed that the father's education in degree-only group was more likely to be 'primary education' but that

secondary and tertiary education distribution was similar. For both groups median value was “some further or some higher education”. Since ‘father education’ was an ordinal level variable I conducted a Mann-Whitney U test which showed there were no statistically significant differences between the two groups in the father’s level of education ($p=0.219$; $z=-1.075$ $U=32326$).

Table B.3 Father's education for degree-only and internship group

Education level	Frequency	Degree-only	Internship	N total
Primary and some primary	N	19	2	21
	%	3.20%	1.70%	3.00%
Secondary and some secondary	N	277	49	326
	%	46.60%	42.20%	45.90%
Tertiary and some tertiary	N	299	65	364
	%	50.30%	56.00%	51.20%
	N total	595	116	711

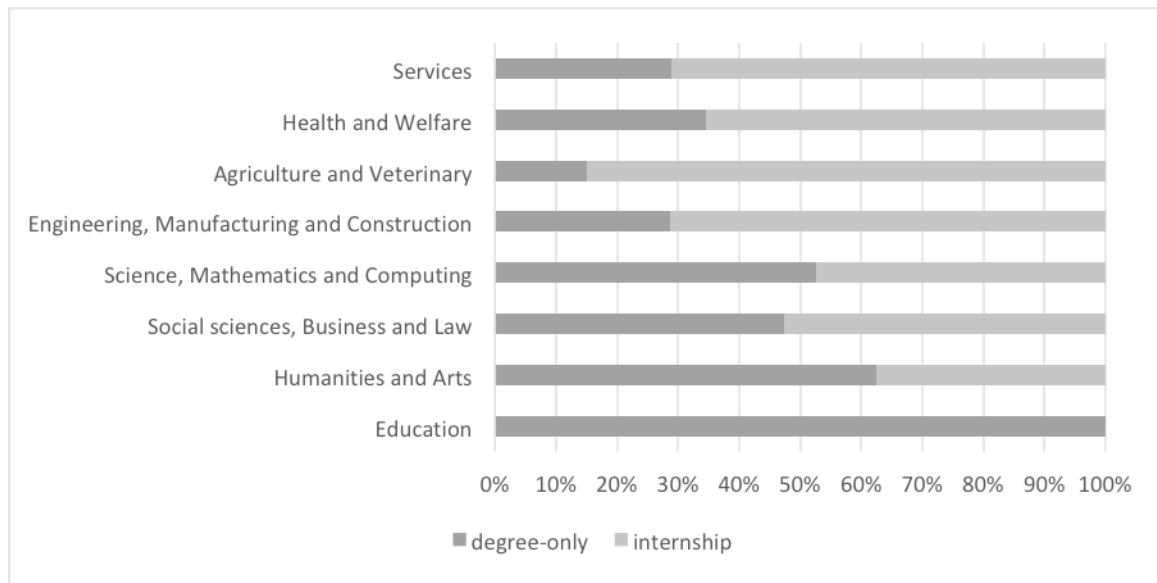
The **domain of the degree** of internship and degree-only group is presented in table. First, I used Chi-square test of homogeneity to determine whether the proportions of degree-only/internship participants are the same in the two groups of my independent variable (the degree domains). However, with six expected cell count less than five, Fisher's exact test (2 x c) was conducted between degree type and the internship/degree-only. The test showed that there was a statistically significant difference in the proportions of internship and degree-only group (total $N=724$) in the eight degree-domains ($p=0.002$). From the chart below it could be seen that education graduates were not represented in the internship group, humanities and arts graduates were also more likely to be in the degree only group. The graduates in ‘Services, Agriculture and Veterinary’ and ‘Engineering, Manufacturing and Construction’ were more numerous in the internship group. This distribution could be a reflection of the selection criteria for the ‘internship group’. For instance, it could be that the education

graduates tend to have work placements embedded in their degrees and are thus less likely to seek internship opportunities on their own.

Table B.4 Differences in the distribution of degree domains in internship and degree-only group

Degree domain	Statistics	Degree only	Internship group
Arts and Humanities	N	197	23
	%	32.3	19.3
	$\chi^2(1) / p$	$\chi^2(1)=8.003, p=0.005^{**}$	
Social Sciences and Business	N	222	48
	%	36.5	40.3
	$\chi^2(1) / p$	$\chi^2(1)=0.643, p=0.425$	
Science, Mathematics &	N	137	24
	%	22.5	20.2
	$\chi^2(1) / p$	$\chi^2(1)=0.313, p=0.576$	
Engineering, Manufacturing, Construction	N	25	12
	%	4.1	10.10
	$\chi^2(1) / p$	$\chi^2(1)=7.377, p=0.007^{**}$	
Agriculture	N	2	2
	%	0.3	1.7
	$\chi^2(1) / p$	$\chi^2(1)=3.331, p=0.127$	
Health and Wellbeing	N	11	4
	%	1.8	3.4
	$\chi^2(1) / p$	$\chi^2(1)=1.193, p=0.286$	
Services	N	19	5
	%	1.6	4.2
	$\chi^2(1) / p$	$\chi^2(1)=3.232, p=0.082^*$	

Figure B.1 Proportion of the degree-domains in internship and degree-only group



I conducted seven separate Chi-square tests to compare whether the proportion of each degree domain differed significantly for internship and degree-only group (see Table 4). From the table it is evident that there was a statistically significant difference between the two groups relative to the proportion of Education graduates (0 in internship group), and Engineering, Construction and Manufacturing graduates. There was a marginal difference between the groups in the proportion of graduates from the Service degree domain at a 10% level. It is important to note, however, that there is still a great deal of overlap in the degree domains between the internship and the degree only group as evident in the two pie charts below. Namely, the largest proportion of graduates in both groups came from the ‘Social Science and Business’ degree domain, ‘Arts and Humanities’, ‘Science and Mathematics’ and ‘Engineering, Construction and Manufacturing’ domain.

Figure B.2 The proportion of degree domains in degree-only group

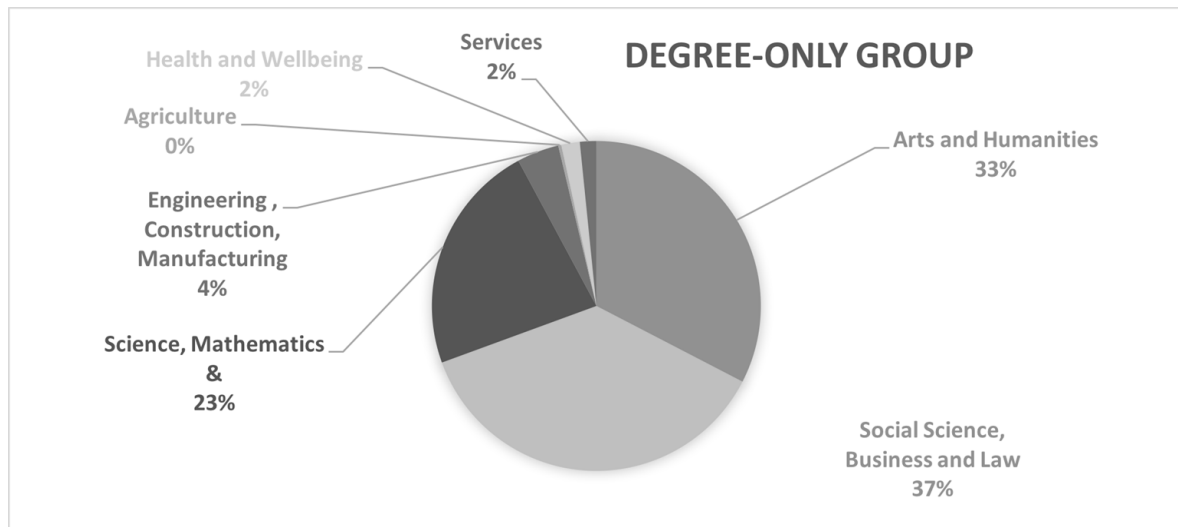
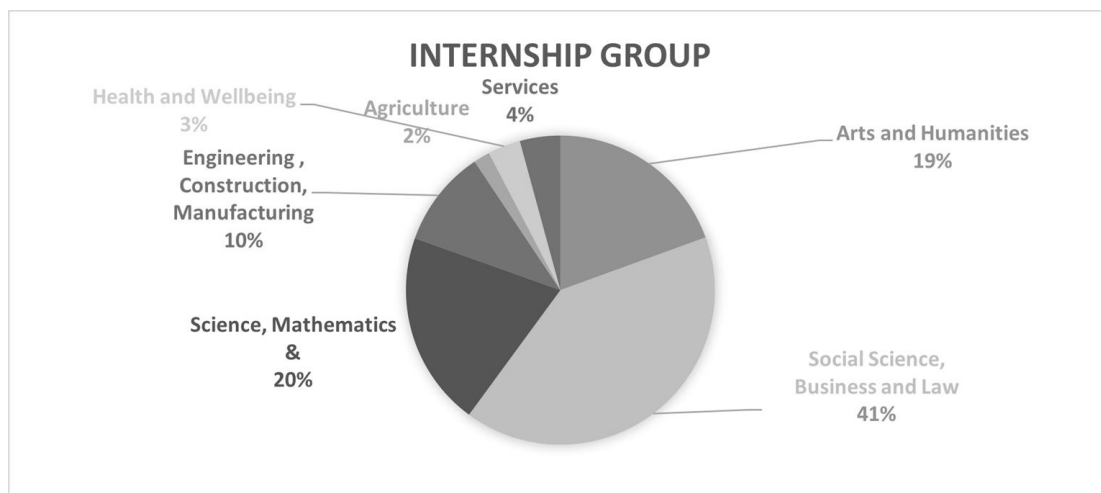


Figure B. 3 The proportion of degree domains in internship group



Data analysis and exploration

1. Time spent looking for a first job and the first salary

I chose the variable “Time spent looking for a first job” as an indicator of the ‘smoothness’ of the transition. In the REFLEX dataset this variable described a number of months that survey respondents reported looking for their first job before and after graduation. First, I explored how long the graduates searched for their first job **before graduation**. The internship group on average spent more time searching for work before graduation than the degree-only group.

However, the standard deviation was also larger suggesting that there was more variation in the data points of the internship group. Before conducting a between-group comparison I checked for outliers, and found that the degree-only group had several outliers which SPSS tagged as extreme values. Namely, these were participants in the degree-only group who reported searching for job before graduation for 20 months, 18 months and 19 months. The largest value for the internship group was 12 months. Since these values seemed extreme but not implausible I decided not to remove them from the analysis. Moreover, since the distribution of score of ‘months of looking for job’ before graduation was not normally distributed, assessed by Shapiro-Wilk’s test ($p < 0.001$). I employed a non-parametric Mann-Whitney test which is suggested in the literature as being less sensitive to outliers and to the absence of normal distribution of data (Daniel 1990). The Mann-Whitney U Test showed that there were no statistically significant differences in the amount of time spent searching for the first job before graduation ($p = 0.163$, $z = -1,280$, $U = 20949.500$).

Table B. 5 Average time spent looking for work before graduation

Interns or degree-only student	N	Mean (months)	Std. Deviation	Std. Error Mean
Degree-only	459.00	1.35	2.45	0.11
Internship	93.00	1.70	2.73	0.28

Furthermore, as shown in table 6, the internship group, also reported spending less time searching for work **after graduation** than the degree-only group (2.25 months as opposed to 2.31). The outliers identified by SPSS were the cases where search for work was 26, 24, and 18 months. Moreover, the distribution of score of ‘months of looking for job’ before graduation was not normally distributed, assessed by Shapiro-Wilk’s test ($p < 0.001$) and by the visual inspection of the Q-Q plots. Thus, I employed a non-parametric Mann-Whitney test which is suggested in the literature as being more robust and less sensitive to outliers and non-normal distribution (Daniel, 1990). The test showed that there were no statistical

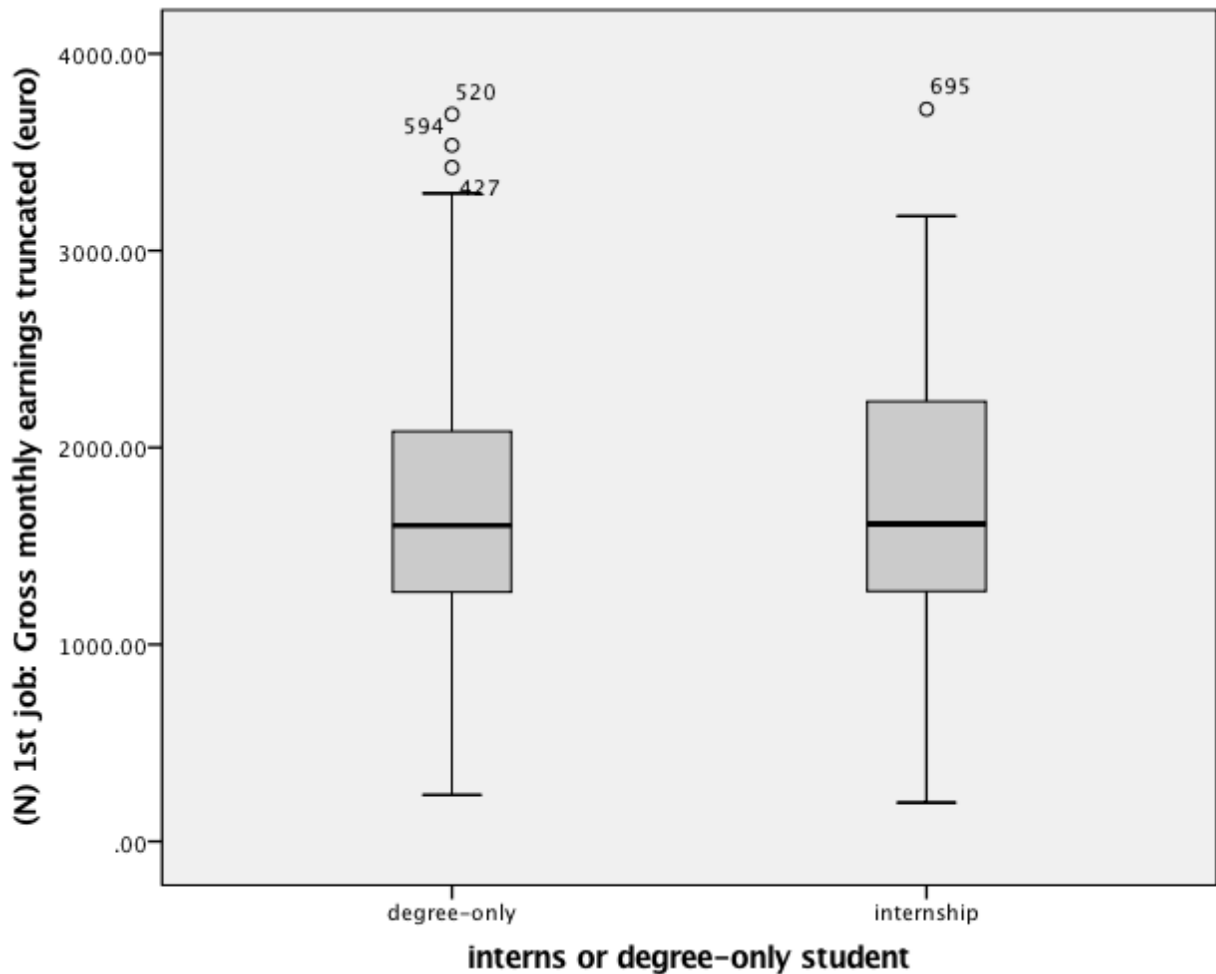
differences between the internship (Mean Rank=275.86) and degree-only (Mean Rank=289.69) group in the length of time searching for work post-graduation ($p=0.453$; $z=-0.751$, $U=20917$)

Table B.6 Average time spent looking for work upon graduation

Interns or degree-only student	N	Mean	Std. Deviation	Std. Error Mean
Degree-only	453	2.31	3.314	0.156
Internship	90	2.25	3.393	0.358

Then, I looked at the differences between the first salary in order to compare whether there were differences between the internship and the degree-only group on the 'hard' indicators of graduate transition. I first explored the data for outliers by inspection of a boxplot for values greater than 1.5 box lengths from the edge of the box. There were two outliers (extreme values) one in the degree only group (salary = 15 648 euros per month) and one in the internship group (Salary=19 986 euros per month). As these values were almost ten-fold the average salary, I removed them from further analysis.

When re-running the boxplots to test for outliers, there were no extreme values (3 box-lengths away) but there were several outliers. I decided to keep them in the analysis.



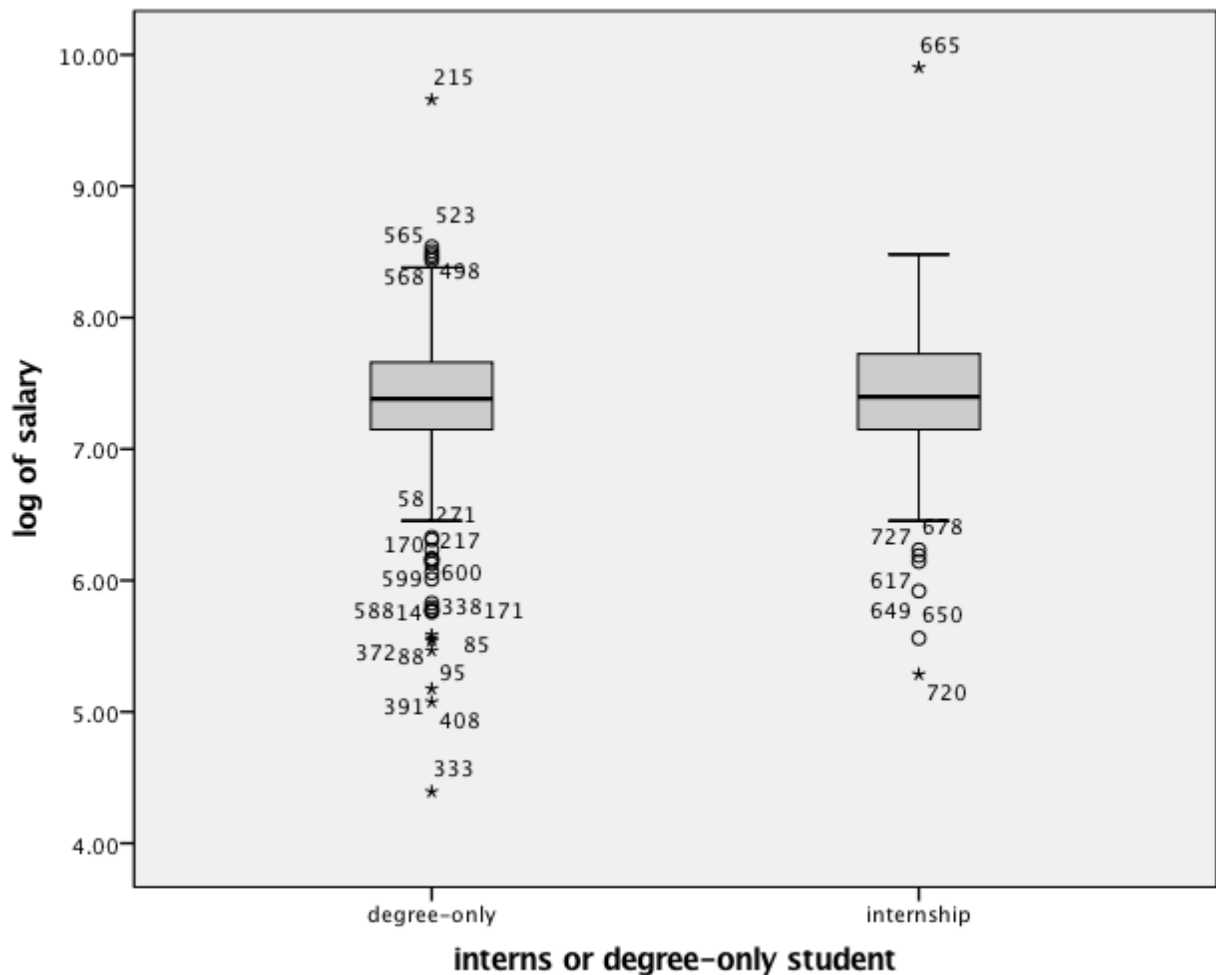
The descriptive statistics show that the internship group had on average higher monthly earnings (Table B.7.).

Table B.7 Difference in monthly earnings between degree-only and internship group

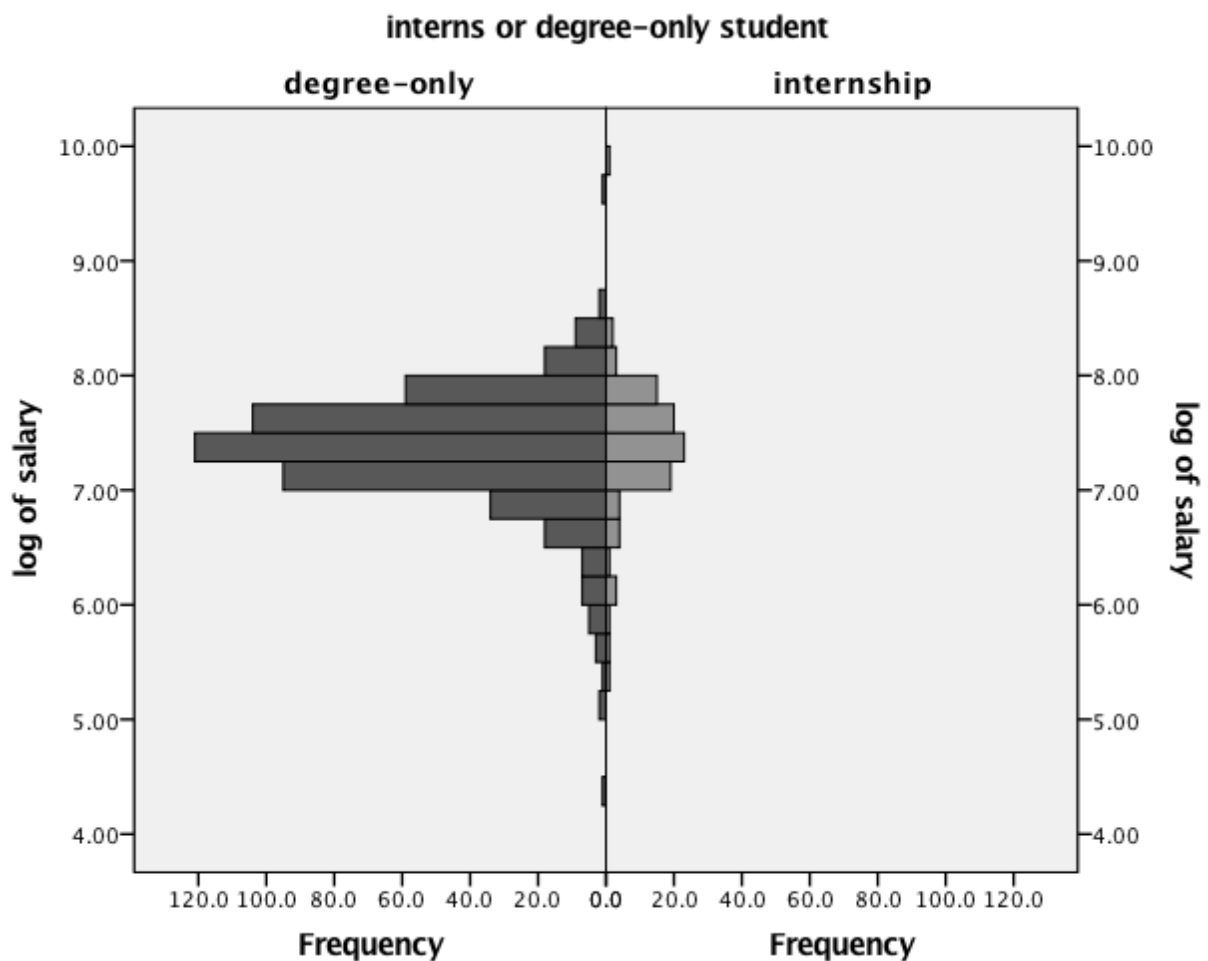
Gross monthly earnings (euro)	Degree-only	Internship
Mean	1674.52	2010
Std. Deviation	638.39	722.14
Std. Error	29.41	74.14
N	486	97

Then, I checked for the normality of salary data for both internship and degree-only group using Shapiro-Wilk test ($p < .05$) which showed that the data was not normally distributed with a positive skewness of 0.382 (standard error=0.112) and negative kurtosis of 0.07

(standard error=0.225) for **the degree-only group and for the internship group positive skewness of 0.236 (standard error 0.247) and negative kurtosis -0.269 (Std. Error 0.490)**. Thus, I decided to perform a logarithmic transformation of data before proceeding. I created a variable with logarithmic values for salary and re-run the assumptions test for outliers and normality. The boxplots showed the extreme values for cases 215 (9.66) 333 (4.39) 408 (5.08) 391 (5.18) 372 (5.47) 665 (9.90) and 720 (5.29). I removed these extreme values from the analysis. I checked for the normality assumption. The log salary scores were still not normally distributed as assessed by Shapiro-Wilk's test ($p > 0.05$).



For this reason, I decided to run a non-parametric Mann-Whitney U rank test to compare the salaries of internship and degree-only group. Before running the test, I checked whether the distributions of degree-only and internship group are symmetric which is the requirement for the Mann-Whitney U rank test. I concluded that the distributions are symmetric and that I can proceed with the test. The test showed there were no statistically significant differences between the degree-only (Mean Rank=291.03) and internship group (Mean rank=302.77) when it comes to first salary ($U=22906$, $z=-0.627$, $p=0.531$).



2. Job seeking strategies for the first job

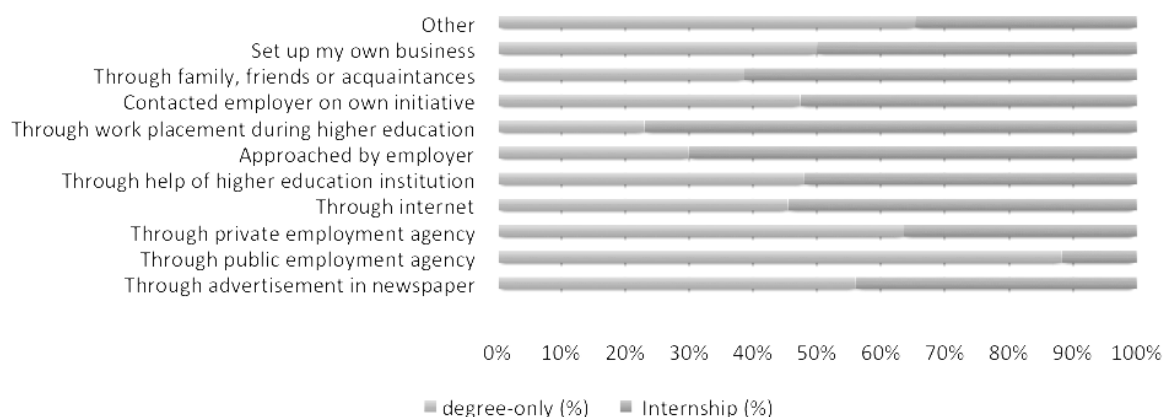
In the REFLEX data set the 'job-seeking strategy' variable depicted the job-seeking strategies the graduates utilised to secure their first job. I grouped eleven job-seeking

strategies into two categories based on the agency and initiative in relation to employers that the strategy required. The two groups were: traditional and proactive strategy. I was interested to see whether the internship group was more likely to use the proactive and work-based ways of gaining employment. In order to explore this, I divided the five options into the ‘traditional’ and ‘proactive’ strategies for looking for employment. The proactive strategy included the strategies: “approaching the employer directly”, “through previous work” and “through family, friends, acquaintances”, “contacted employer on own initiative”

Table B.8 Ways of finding work upon graduation

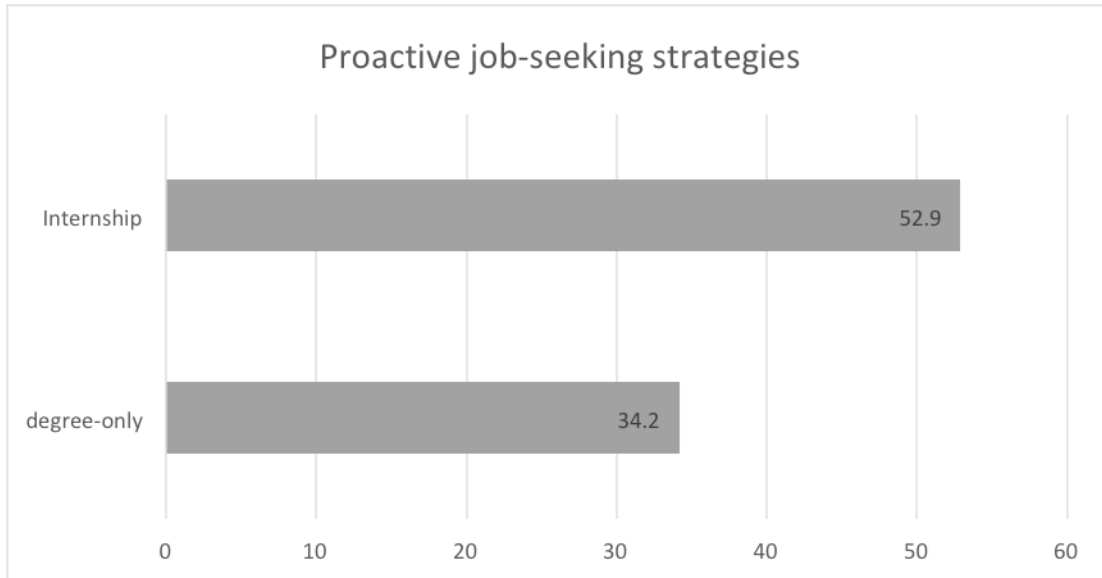
Ways of finding work	Degree-only (%)	Internship (%)
Through advertisement in newspaper	23.50	18.40
Through public employment agency	6.80	0.90
Through private employment agency	13.80	7.90
Through internet	6.60	7.90
Through help of higher education institution	4.90	5.30
Approached by employer	3.00	7.00
Through work placement during higher education	2.10	7.00
Contacted employer on own initiative	17.40	19.30
Through family, friends or acquaintances	13.80	21.90
Set up my own business	0.90	0.90
Through previous work	0.70	0.00
Other	6.60	3.50

Ways of looking for work upon graduation

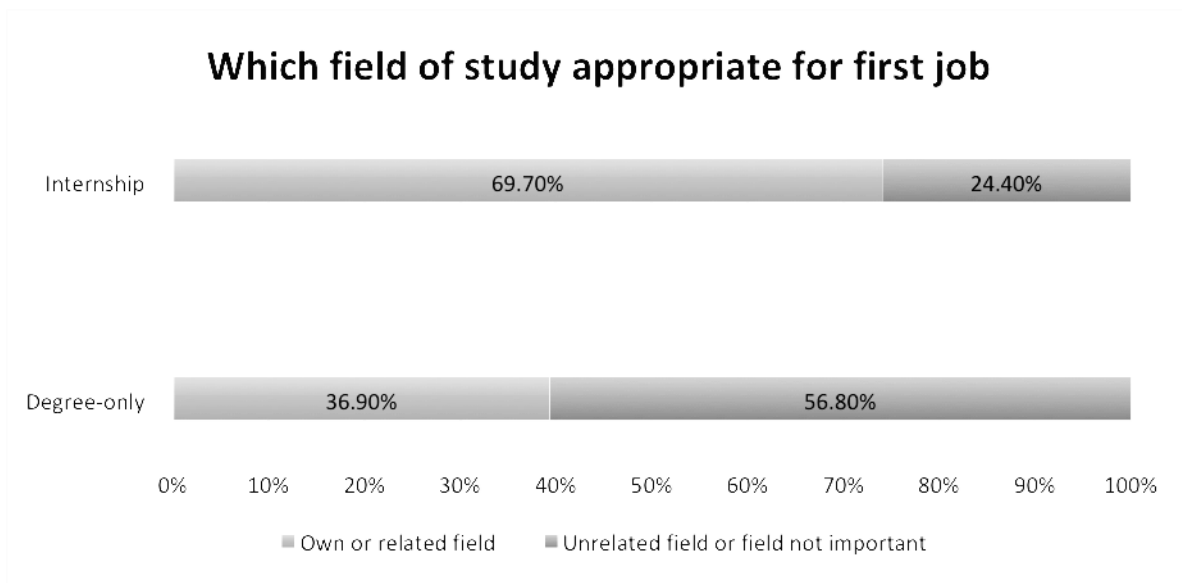


Then, I further explored the proactive work search strategies of the internship group by creating a new variable with two categories the ‘proactive’ and the ‘traditional’ search for job. My intention was to determine whether there is an association between proactive strategies for looking for work and the internship group. Using the chi-square test I compared the frequencies for both categorical variables (“degree/internship” and “traditional/proactive”). There was a statistically significant association between the type of job seeking strategy (i.e. traditional or proactive) upon graduation based on whether graduates completed an internship or not with $\chi^2 (1) = 15.035, p = .000$. For instance, in the table it is showed that over half of the internship graduates in the sample were likely to use proactive strategies relative to a third of the degree-only graduates. However, although the relationship was significant, the strength of association was weak due to low Phi (0.144).⁴² In the chart below I illustrated that the 34.2 (N=208) percent of the degree-only graduates used proactive strategies as opposed to 52.9 percent (N=63) of the internship group.

⁴² Phi varies between 0 and 1. Close to 0 it shows little association between variables. Close to 1, it indicates a strong association. From http://changingminds.org/explanations/research/analysis/cramers_v.htm.



3. The relationship between the field of study and the first job



The variable “the field of study appropriate for their first work” indicates how graduates in the sample perceived the relevance of their degree domain for their first job. The variable is categorical with four categories: own field, closely related field, no specific field and completely different field. In order to simplify the analysis and interpretation I recoded the variable into two categories: “own or related field” and “unrelated field and field not important”. The descriptive statistics showed that the internship group tended to agree more

with the statement that their own or related field that was appropriate for the first job (69.70 percent of the internship group, N= 83) than the degree-only group (36.9 percent, N= 225).

However, I wanted to account for the fact that the group differences could, in addition to horizontal expertise development, also result from the respondents' actual degree domain. Namely, some degree domains and industries require a close match (e.g. engineering, economics). Thus, in order to see whether there are statistically significant differences between the internship and degree-only group in terms how they **perceived the relationship while controlling for the domain of the degree**, I ran a binary logistic regressions.

In order to run the logistic regression there are seven assumptions in the literature (Field, 2010) four of which relate to design such as that the independent variable is nominal and dichotomous (internship/non internship) and the dependent variable nominal and dichotomous (own or related field appropriate for first job vs. unrelated or non-specific field appropriate for first job). The three other assumption are related to the assumptions embedded in the data such as: linear relationship between independent and dependent variable, absence of high correlation between independent variables and the absence of significant outliers in the data. Below, I tested the assumption of significant outliers. I did not test the multicollinearity because my research design had only one independent variable, and I did not test the assumption of linearity because my independent variable is not continuous but categorical.

The Casewise Diagnostics showed that there were three studentized residuals with higher than +/- 2. standard deviations. However, the residuals were not unusual and they were kept in the analysis.

Figure 4 Diagnostic for significant outliers in the data

Case	Selected Status ^a	Observed study/job/field	Predicted	Predicted Group	Temporary Resid	Variable ZResid
644	S	2**	.084	1	.916	3.292
704	S	2**	.084	1	.916	3.292
721	S	2**	.084	1	.916	3.292

Then, a binomial logistic regression was performed to ascertain the effects of the membership to degree-only/internship on the perception of the link between the domain education and the domain of first job. The logistic regression model was statistically significant, $\chi^2(4) = 64.055$, $p < .001$. The model explained 12.0% (Nagelkerke R²) of the variance in the ‘education/work domain match’ and correctly classified 64.4% of cases. Sensitivity was 88.2%, specificity was 35.3%, positive predictive value was 64 % and negative predictive value was 67.3%. Of the two predictor variables both were statistically significant: degree-only/internship and the degree domain (as shown in Table 1). As shown in the table, the B coefficient is negative and the Beta (Odds Ratio) is less than 1 meaning that doing an internship (or an increase in unit from ‘degree only’ to ‘internship’) decreases the odds of saying that the degree domain and the first job domain are unrelated by 4 times ($1/0.253=4$) when all other independent variables such as the domain of the degree are held constant. In other words, having done an internship increased the likelihood of saying that the field of degree and domain of job are related, when holding the actual field of degree constant. An important insight from this analysis is that having done an internship regardless of the domain of the degree makes graduates more likely to see their degree and their first job as related.

Table B.9 Logistic regression predicting the likelihood of internship group to say the degree and the first job were closely related

	B	S.E.	Wald	df	Sig.	Odds Ratio	95% C.I.for EXP(B)	
							Lower	Upper
Interns or degree-only	-1.373	0.236	33.851	1	0.00	0.253	0.16	0.402
Field of education and training (own or unrelated)	-0.296	0.071	17.342	1	0.00	0.744	0.647	0.855
Constant	1.358	0.24	32.055	1	0.00	3.89		
Note: Degree-only group is a reference group								

4. The perception of being overeducated for the first job

In the REFLEX dataset the indicator “overeducation for the first job” was derived as a proportion of two variables: i) the level of education the participants deemed was necessary for the first job and ii) the survey participants’ actual level of education at the time of their first job. In relation to graduate expertise, this variable reflects how the participants saw their education-based expertise in relation to the expertise required on their first job. The descriptive statistics showed that on average the internship group perceived themselves as less overeducated (M=0.85, SD=1.338) than the degree-only group (M=1.41, SD=1.486) or, put differently, they saw their level of education as matching the demands of their first job. In order to compare the differences of the internship and the degree-only group on an interval variables (i.e. number of years of overeducation) and establish whether the differences between the two groups are statistically significant I ran an independent samples t-test. The test showed that there was a significant difference in the scores between the two groups; $t(679)=3.745, p=0.01$.

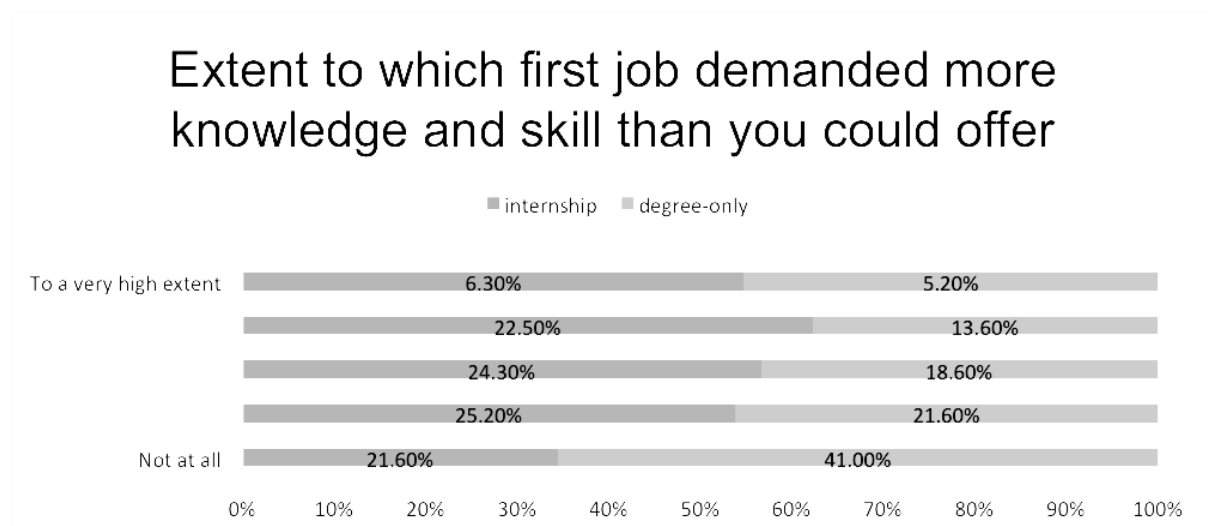
Table B.10 The mean value of years of overeducation for degree-only and internship group

Interns or degree-only student	N	Mean (years)	Std. Deviation	Std. Error Mean
Degree-only	568	1.41	1.486	0.062
Internship	113	0.85	1.338	0.126

This suggests that the degree-only group was more likely to perceive themselves as overeducated for their first job.

5. The demand for skills and knowledge on the first job

In order to investigate how the survey participants saw their first job in relation to their prior skills and learning, I used a variable which corresponded to the question “Did your first job demand more knowledge and skills than you could offer?”. The variables were coded on five level Likert scale from “Not at all” to “To a very high extent”. First, I explored the differences between the ratings on this variable between my two groups descriptively. As presented in the chart, the internship group was more likely to agree highly that their first job was demanding (28.80 percent as opposed to 18.80 percent in the degree group).



I further explored these descriptive differences by examining whether they are statistically significant. Since the dependent variable (i.e. “the extent to which job demanded more

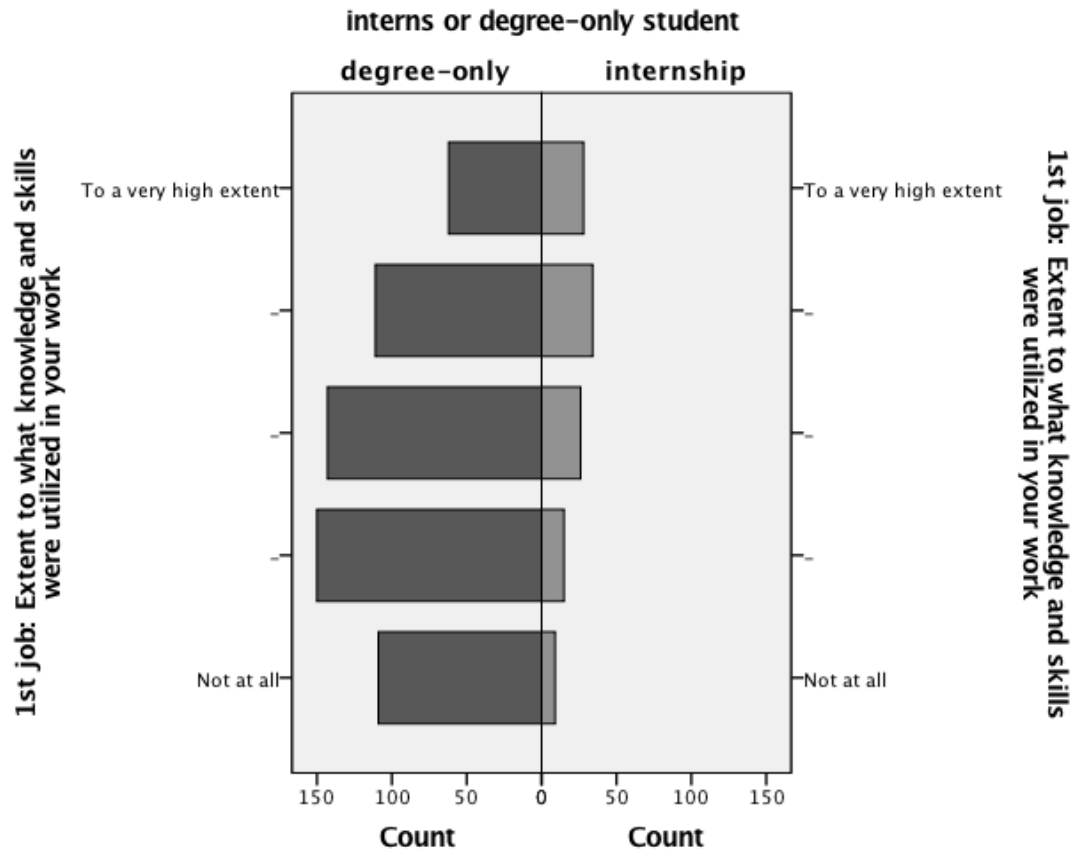
knowledge and skill than you could offer) is on a Likert scale and, thus, on the ordinal level, I used the Mann-Whitney U rank non-parametric test. Distributions of the scores for degree-only and internship group were not similar, as assessed by visual inspection. The scores for the internship group (median= 3; mean rank =406.55) were statistically significantly higher than for degree-only group (median= 3; mean rank= 331.33), $U = 24914.500$, $z = -3.809$, $p = .001$. Thus, the internship group was more likely to say that their job was demanding more skills than they could offer than the degree-only group.

6. The extent to which graduates' skills and knowledge were well utilised on the job

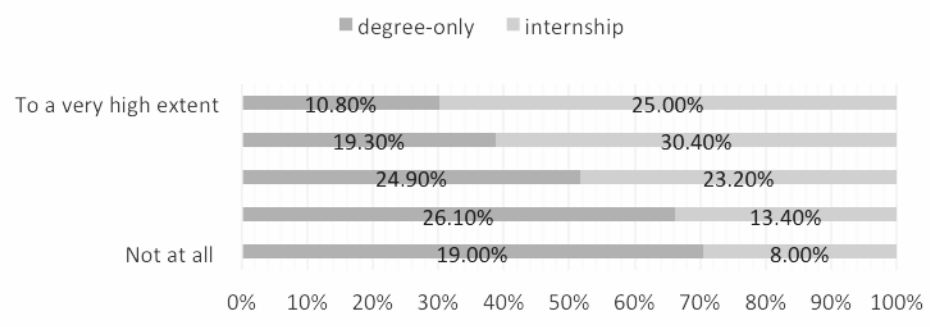
In order to investigate further how the survey participants, saw their first job in relation to their prior skills and learning, I used a variable in the dataset which contained information on the extent to which graduates' skills and knowledge were utilised in the job. Descriptive statistics showed that there are differences between the internship and the degree group and that internship group tended to rate more highly the extent to which their expertise was used in their first job.

As previously, since the dependent variable is on the ordinal scale and the independent variable is categorical (i.e. internship/degree). I first checked whether the data in both groups had similarly shaped distributions a pre-requisite for the Mann-Whitney test. I used a Chart Builder procedure and the produced the graph shown below. A Mann-Whitney U test was run to determine if there were differences in scores between degree-only and internship group. Distributions of the 'skill utilisation' scores for degree-only and internship participants were similar, as assessed by visual inspection. Median 'skill utilisation' score for degree-only (median=3) and internship (median=4) group was statistically significantly different, $U =$

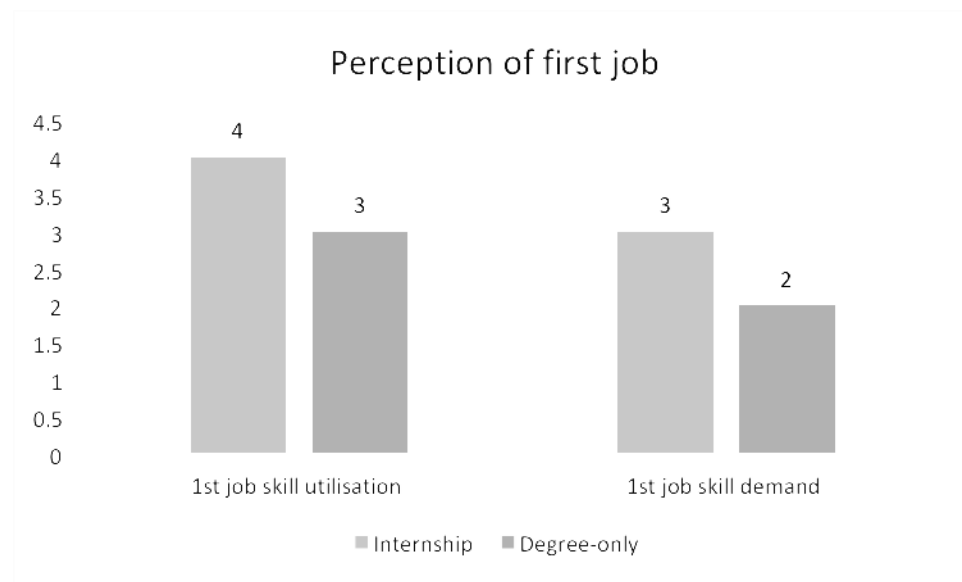
21769, $z = -5.556$, $p = .000$, using an exact sampling distribution for U (Dineen & Blakesley, 1973).



Extent to which your first job utilised your knowledge and skill



In the chart below, the statistically significant differences in median values of the degree-only and internship group's ratings of their first job are presented. The higher ratings mean that the first job utilised the skills to the higher extent. The internship group was more likely to say that their knowledge and skills were highly utilised on their first job.



Conclusion

In this section I showed that in using the logic of the graduate horizontal expertise framework, it is possible to detect some new patterns in the data such as the differences between the internship and degree-only group in how they searched for and perceived their first job. In the table below I highlighted some of the key differences.

Table B.11 Differences between internship and degree-only graduates in REFLEX

Attributes	Internship group	Degree-only group	Statistical tests
More likely to gain their first employment by employing more proactive strategies for employment (e.g. approaching employer directly, using their networks)	52.9 percent (N=63)	34.2 percent (N=208)	$\chi^2(1) = 15.035, p = .000$
More likely to say there is a relation between their field of study and the domain of first job	Internship group 4x more likely to say the study and first job are related		$\chi^2(4) = 64.055, p = .001$. The model explained 12.0% (Nagelkerke R ²)
More likely to see their first job as demanding in terms of skill and knowledge	Mean Rank=406.55	Mean Rank=331.33	$U = 24914.500, z = -3.809, p = .001$.
More likely to think their knowledge and skills were well utilised in their first job	Median value =4	Median = 3	$U = 21769, z = -5.556, p = .000$
Perceived years of overeducation in relation to first job	M=0.8 (years), SD=1.338	M=1.41 (years) SD=1.486	$t(679)=3.745, p<0.01$

Appendix C: Qualitative study of horizontal expertise

Table C.1 Timeline of the thesis development

Section of the thesis	Date
Focus group 1	February 2016
Focus group 2	February 2016
Focus group 3	March 2016
Focus group 4	April 2016
Focus group 5	April 2016
Interview 1 and Interview 2	May 2016

Figure C.1 Invitation for participating in research

Subject: Invitation to contribute to research on internships

Body:

Dear Student,

I am a PhD student at UCL. My research focuses on what people learn when they do an internship that is relevant to their degree. I am currently looking for participants who can share their experiences.

If you are interested in participating and contributing to my research, please contact me at jelena.popov.14@ucl.ac.uk. It will take approximately an hour of your time and you will be rewarded with a **£20 Amazon voucher**.

You can find out more about the project here: <http://internshipres.tumblr.com>.

Many thanks,

Figure C.2 Research brief

Subject: Invitation to contribute to research on internships

Body:

Dear Student,

I am a PhD student at UCL. My research focuses on what people learn when they do an internship that is relevant to their degree. I am currently looking for participants who can share their experiences.

If you are interested in participating and contributing to my research, please contact me at jelena.popov.14@ucl.ac.uk. It will take approximately an hour of your time and you will be rewarded with a **£20 Amazon voucher**.

You can find out more about the project here: <http://internshipres.tumblr.com>.

Many thanks,

Figure C.3 The consent form for focus groups and interviews

**Consent for participation in a research on the role of
internship in moving from education to work**

- group discussion

I agree to participate in a research project led by a PhD candidate Jelena Popov from the University College London – Institute of Education in London, UK. The purpose of this document is to specify the terms of my participation in the project through being interviewed.

1. I have been given sufficient information about this research project. The purpose of my participation as an interviewee in this project has been explained to me and is clear.

2. My participation as an interviewee in this project is voluntary. There is no explicit or implicit coercion whatsoever to participate.

3. Participation involves being interviewed along with other participants by Jelena Popov, PhD candidate from the UCL – Institute of Education. The interview will last approximately 1 hour and 20 minutes. I allow the researcher to take written notes during the interview. I also may allow the recording (audio recording) of the interview. It is clear to me that in case I do not want the interview to be recorded I am at any point of time fully entitled to withdraw from participation.

4. I have the right not to answer any of the questions. If I feel uncomfortable in any way during the interview session, I have the right to withdraw from the interview.

5. I have been given the explicit guarantees that the researcher will not identify me by name or function in any reports using information obtained from this interview, and that my

confidentiality as a participant in this study will remain secure.

In all cases subsequent uses of records and data will be subject to standard data use policies at the UCL (UCL Information security policy) and the BERA Ethical Guidelines for Research (British Educational Research Association, 2011).

6. I have read and understood the points and statements of this form. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

7. I have been given a copy of this consent form co-signed by the interviewer.

_____	_____
Participant's Signature	Date
_____	_____
Researcher's Signature	Date

For further information, please contact: Jelena Popov
jelena.popov.14@ucl.ac.uk

Department of Education, Practice and Society UCL – Institute
of Education 20 Bedford Way, London WC1H 0AL

Figure C.4 Focus group schedule

Topic Guides

1. Reasons for doing an internship

- Own reasons for applying for an internship
- Other people's reasons
- Pros and cons of doing an internship
- first internship vs. subsequent internships - what has changed?

2. Learning experience in an internship

- What did they do?
- How did they know what to do?
- What did they learn?
- What was the biggest insight that the internship provided?
- Who helped them learn?

Degree:

- How would they re-design their degree in the light of what they've learned in an internship
- How did the degree prepare them for the internship?

3. After the internships – reflections and plans

- What has changed after the internship?
- What was it like to return to their degree after an internship?
- What are their subsequent plans?

Probe:

- Degree-related plans
- Career-related plans
- Other plans

Figure C.5 Focus group transcript

Focus Group 1:

I – interviewer; R1 – respondent 1; R2 – respondent 2; R3 – respondent 3; R4 – respondent 4; O - other

[chatting in background about where people have been, travel plans]

I Okay, okay I think I have here everything. First welcome and thank you for coming, thank you for your time. I told you a bit about my research in the email. So I'm doing a PhD in Education and I'm actually looking at the movement between education and work and what people learn from this, and that's how I got interested in internships. Okay, so just to kick things off, although I see that you've already started talking to each other and we sent the ground rules, can you tell me your name and just briefly, what kind of internship did you do, what kind of work was it?

- R1 Does any other kind of work also count or Any other kind of work you did during the summer count or? For example teacher[?: 2:41] or? Spring week, stuff like that.
- I Yes, the internships you secured during spring, summer breaks
- R2 And I can just write any right? Don't have to write just.
- I You can write nicknames, names, on your name tags whatever you want. You can invent a name (laughter). Yeah, so whoever wants to start [inaudible], listen to myself talking. Do you want to start?
- R1 Sure.
- I Gentleman here wants to start okay.
- R1 Ladies first [inaudible]. So my name is Manuel [nickname] and I've basically done one ten, eleven, eleven week internship with a hedge fund in sales and marketing. That was after my second year and it was a bit of a requirement for my degree. So we had to find an internship, otherwise the department told us that we would, they would find one for us [inaudible: 3:55]. The reality was look for something yourself because the best internships are out there. So I got this internship with this department in this hedge fund in London and it was very interesting, and before that I did two spring weeks with investment banks. One was in operations, I didn't like operations. That was with a British bank, I'm not going back there (I laughs), I have no intention of going back.
- I Okay, I'm gonna pick up on that later.
- R1 Yeah. Got fast drive and all and got all of the cars, every, like all got everything, but I was like 'there's no way I'm coming back'. And then the other one was with the corporate investment bank. Actually I got an in-, like it was for a corporate investment bank in risk, got, got fast-tracked for the corporate investment bank and when I went there this was a different reason, and I liked it and I wanted to do a summer internship, but this time I didn't get it, for reasons that I can explain later.
- I Okay.
- R1 And then the third.
- I So when was all of that, like just?
- R1 This was second year, all of this was second year. Now I'm in my fourth year, so last summer I didn't do an internship, I preferred to stay home with my family over the summer, which is something that I've missed, because I was.
- I And can you just say for the, what your degree is, so like what are you doing?
- R1 My degree is Arts and Sciences. I major in societies but I focus on the applied side of economics, mainly behavioural economics, environmental economics and development economics and try to apply [inaudible: 5:20] techniques and payroll economics techniques to environment and development.
- I Okay.
- R1 And on my minor I do, I'm trying to do neuroscience, so I'm doing one on behaviour. I did stem cells and the brain last year. I have to do Chinese because [inaudible: 5:32].
- I Oh that quite interdisciplinary (laughs).
- R1 That's a good thing though[?].
- R2 My name is [inaudible: 5:44] and I'm studying chemical engineering and I am in my third year currently and after my first year I did a three month internship in a chemical company, so very closely related to chemical engineering, not far off, and it was more in the accounting and production overseeing side, so more management

- and, so not the technical part of my degree, and then after my, it was three months and after my second year I did another internship also with a chemical company, so I stayed in that area. But it was a different style of company, it was much bigger, a family busine-, like a family company, and a
- R4 Cool.
- R3 Yeah, so my second internship was more in the engineering field, so I was in an engineering team working on a project for three months.
- R2 Hi everyone. My name is Darta and I'm doing information management for business at UCL. Last year I landed an internship with [name of the company] so I moved to California for a year to work for the digital marketing department, so I was working closely with the, it was a rotational role so I got a taster of a lot of different teams in the department. I worked for social media, TV and even user experience. Summer before that I worked for [Name of the company] in Dubai which was on a much smaller scale and it was for four weeks, and it was quite easy to get into because my uncle works there, so it's always good to have connections, and that was again in the marketing department. And yeah now I'm doing a huge consultancy project for my degree and hopefully, I'm trying to find another internship within that sector.
- I Okay. So would that be like a summer internship or would it be part of your degree?
- R2 It would be an internship along with my course to like present a piece towards the end of my degree.
- I Mmm, okay. Do you want to tell us about like your name and the internships you've done?
- R4 Yeah. My name's John and I'm doing electrical and electronic engineering. I did an internship at a company called [Name of the Company] that make wireless temperature and pressure sensors to go inside of tyres of big mining[?: 8:59] lorries, and they also make strain and stress sensors to go on wind turbines but I wasn't with that part of them. I did one month in the summer two years ago and then I went back to them again the next summer and did a month the year after that, and whilst I was there I basically just sort of did odd jobs that they needed doing. So I did a lot of soldering of like components that they needed, I designed a PCB and coded a map controller to basically create a way of testing the cables after they'd been assembled. So it was basically just like a little circuit board that you could plug in both sides of the cable and test it to see if all the connections were connected correctly because they had like a manufacturing fault where for some reason all of their like pins on their cables were swapped so they were like mirror images, they didn't know which ones were mirror images and which weren't so they needed that testing. I also did, like I set up a little experiment for them where they had like, they wanted to test the coordinates of one of their devices over like a period of a month and sort of various pressures and heat and they sort of had like a big oven that they just sort of had a device in and kept it on for like a month basically and I had to write some code that would take measurements from the device every like ten minutes. And yeah just sort of really like small little things like that.
- I Yeah. Okay cool. I really like the variety of experiences, so I kind of emphasised that I imagined this to be a discussion amongst you guys so I'm just going to throw in a broad question, and that is how did you decided to do an internship, and also more generally why do people decide nowadays to go for instenrships internships?

- R2 I think in today's world doing an internship adds a lot of value to your CV and a lot of companies, before hiring people for grad roles, they look at the person's, not just their final grade but their experience, so they emphasise a lot on that. And I feel like you learn a lot more during your internships than you do in lectures, because I feel like I didn't learn half as much as I did in UCL as I did in California and my experience with Cisco, so yeah. It's a good, it's a good way to like get grad, like grad roles with companies later along the line.
- R3 Yeah I would agree to that. Like from my experience the companies that I have worked with and heard about actually think that students at, just at the education, kind of like it's, they are supposed to, like it's told to them, are kind of ruined by, they like to influence the people that come in and teach them more, they don't like people that just have their one way of doing things. For example if you are with a Masters and maybe a PhD just at uni and then know all your theory but then don't understand the company values I think they would like to influence people early and know them, especially in, where I was, like engineering, they are very conservative, so they prefer, they nearly never take people that they have never seen before as a full time job. So it's either you get in there through connections, engineers in general, most of the people that study, have somebody in their family that does chemical engineering, otherwise people don't know what it is, or, so they either know they through their family or through internships. So for me it was kind of the only way of kind of getting my foot in the door and, yeah, knowing if that's what I want to do.
- I So it's kind of like a recruitment strategy for some companies almost?
- R3 Yeah, a lot, yeah. Definitely.
- R2 Yeah, like J P Morgan was on, were on campus the other day and I was speaking to a lady and she said 'the best way to land a grad role with us is to do the summer internship because the summer interns are guaranteed a job'. I mean if, you must be really crap in, during your internship to not get a grad role in the end, but ninety-five per cent of the interns then end up working for them full-time.
- I But does that then mean that landing an internship then is pretty hard?
- R2 Pretty much, yeah, yeah.
- R3 It is, yes.
- I: Because it's kind of like an early selection process for potential employment?
- R2 Yeah.
- R4 I did an internship because, yeah like it, in engineering at least, as if companies want you to have experience because quite often the stuff that you learn in uni is theoretical and you can't actually then go off and build anything useful and a lot of the time the only way you learn is actually by building something and it not working and then going to talk to someone who knows how to do it and being like 'I have no idea why this isn't working' and then your whole like explaining it like 'set your something to like a random register [inaudible: 15:02] control this [inaudible]' and it's stuff that you don't really learn in textbooks. And yeah I did mine where I did it because my dad's friend worked for them and he could get me an internship without like me having to do anything, and they were also, like they're a really small company and so they couldn't sort of guarantee that they'd pay me and then the first year they did because they were doing a bit better, and then the second year they were going through a bit of a rough spot so they couldn't. But it was really nice

because, because it was a small place like it was really flexible so it, they basically said 'whatever dates you want to come and work for us you come and work for us'. So it was quite nice, as opposed to like with big companies that sort of you have to, that you have to do all the three months you're [inaudible: 16:06] for, and, yeah that's why I chose to do it there, because they let me do it for basically as much as I wanted to.

R3 I think the money part is also a reason. I think internships, like for me, just over the summer was a good way of kind of connecting job but then also getting something for my CV done and it just connects it kind of, so it's really good. Like a lot of internship nowadays, especially because companies focus so much on them, they are really well paid as well. And another thing is, which is, wasn't my motivation but is for a lot of people, and partly mine as well, it's a lot of pressure from the department or from the, from the professors. I mean it's kind of, you mentioned it as well, like departments either say 'we'll get you one or you're not going to graduate without one', but they don't, for my department they really like want to get that competition between people and say 'you're all in the end', they make it look like 'the hundred and twenty people that you're in a lecture room right now with, they're all going to be competing for this one job with Shell' or something like this, 'and depending on who gets the internship with them or who gets the internship somewhere else, they'll get the job', so for us it's very, companies come kind of every week to present themselves, do talks. So it started actually for us in our second week of university, I remember because we were all quite shocked (laughs), and the companies came and said 'you should do an internship with us, otherwise you'll not get a job' (laughs).

I In your first year?

R3 Yeah fir-, second week, that's like the first company that was presented.

I Oh dear

R3 So it's very, also the departments and the universities make you aware of that, the opportunities out there and they encourage it I think. So a lot of people maybe hadn't had the idea before but then the department kind of, yeah.

R2 And it presents a lot of like networking opportunities as well. Like when I went to California to work for Cisco not only did I get a chance to like network with the people within the Cisco family but we had opportunities to go to like Facebook, Twitter, Amazon. Like it was all in the hub of like Silicon Valley so you get to like meet people from like all sectors which was pretty cool. So that's another incentive to apply to like an industry that you're really passionate about.

I Yeah. I'm wondering now just listening to you, how do you actually choose a particular internship? What's your thinking behind it? Like do you go for a big name or do you go for the kind of work that you would like to do?

R2 I think it depends on the person. Like for me after working for a huge company like [Name of the company] I have no regrets, but I think I would've started off small because no matter how good you are and what you present you'll always be that tiny fish in the big blue ocean because you're working with so many people and you barely ever get recognised, whereas if I worked for like a start-up and, you know, I displayed the same kind of skills and showed the same kind of success I would've probably, you know, gotten a lot more recognition. So I think it depends kind of like person to person what your goal is. Yeah.

- I Do you think that what you look for in an internship changes, because some of you have the multiple internships?
- R3 Yeah.
- I Yeah?
- R1 Completely, yeah.
- I How would you say that it changed?
- R1 As I said before the thing is I don't want to go, like especially with the short ones, it's a really good opportunity if you can get a work, like an insight[?: 20:02] or something, they actually paid, so that was great. I mean and that's always like a good incentive, like if I don't, if they don't pay me it's usually either because they don't have the money, but you can always go to advances and they'll value your work much more and you can contribute much more. But then it was a good idea to spend quite a lot of time to get a small insight into some of the industries which, which then you're, you know you don't want to get into. But yeah, so you go there, you look at the things, you see your career and, like what your career path is going to look like, how long it's going to be, then the money you're going to make, but that's not worth it, it doesn't compensate for what you're getting.
- R2 Yeah that's so true. Like one of my friends who recently landed a job at EY, he told them that he'd like to put his grad role on hold, so he went travelling around for a whole year, he comes back to EY, they still want him, he worked for two days, and I'm not joking, on his second day he quit his job. He was like 'this is not me, I hate', he hated the corporate culture, he didn't like the whole, you know, seven to ten working hours, it just wasn't him.
- R3 What is he doing now?
- R2 He started up his own company, yeah.
- R3 Also during my first internship I was actually very surprised that I actually got paid (laughs) because it was also, it was a big company but the, so I did it in Germany but the company was owned by a Saudi Arabian, so it was very, it was a small part of the company, so I didn't really, I thought it would be very small. But then the good thing, it was my first internship, very small, and I think I was the first woman they had ever seen on the site, so they got me, like it got me a lot of attention in terms of, they tried to make it like enjoyable for me. They let me do a lot of stuff and I got, because it was so small and like getting recognition was easier, like it's easier to stand out, they gave me a very good resume kind of, or like a very good recommendation which I think was a big influence on getting my next internship. So it kind of, I mean starting out small was a big part for me. Also I, for my first internship, as I said, I did more of the marketing side, so I didn't really look at I want to go into something where I definitely do what I definitely want to do. It was more, like for you, kind of trying out, also getting an overview of a company, it's much easier from the marketing and accounting side than from one technical part of the company, and doing an internship also gives you more freedom to switch between the areas. I think when you start a job later you are stuck to your one job and you don't necessarily see the other parts of the company, so as an intern it's a very good opportunity to see many parts at once. And then for the second one actually one of my priorities was that it's a good combination between work and location because it was my second summer and the only one I really had free still, or that's how I felt at least, and it was a very nice area and I realised I wanted to do a bigger company but

a family business, because, to kind of, I looked more at corporate values actually and how the structure of the company is, what it would actually be like to work for them later. For my first internship I wasn't thinking okay this could be where I work later, while the second one it was more, yeah this might be it, I'd definitely consider it.

R2 That makes sense.

R1 Yeah, the corporate values is actually really interesting, and then you can tell what kind of mentality goes on in the company, but especially because most of the time you can't really believe in it. So, for example, one of the reasons why I didn't do the internship in the first place I got the spring week at was because they were always emphasising, you know, excellence, teamwork, whatnot, and all of these, I'm sorry about the expression, BS kind of terms which then they try to express by showing you all these are very important and our bonuses actually, performance bonuses, is judge on the basis of how we fulfil these things, and also, but then of course the next thing I knew I, once I finished the spring week was that, and you'll probably know which company it was now, they fired around ten per cent of the people working here in London alone, so most of the people that I had actually met and I had networked were not there any more, and I actually got a call the next day and they said 'I'm really sorry but we can't even tell you what is going to happen with your offer or anything because it's simply not a good time, it really isn't a good time'. And when you looked at this it turns out the restructuring plan has started at the same time as the principles approach, so they were actually mentalising people to keep, you know, in a way to be prepared for this kind of event and then to be able to recover from it as efficiently as possible. So I didn't like it. Then of course there are other companies, and there was one that was really interesting, there was a networking session with a consultancy, a management consulting company, and they were like 'yeah, we emphasise very strong values of, you know, of, we are very', how do you say it? Like 'we accept people from all backgrounds, we have a fifty-fifty woman-man ratio' and stuff, 'all ethnic, like all ethnical backgrounds, all, no matter what your sexual orientation is', and the next thing I thought about is okay, so it's all, this group of ten people who have come here to give the presentation, it's all white male, how do I believe your corporate stuff? But then again there was another company who were like 'yeah, it's quite simple. If you don't, if you're not accepting of different genders, of different sexuality, sexual orientations, if you're not accepting of different cultures simply don't even bother applying, and the reason is that most of us, like half of us here are actually gay, there is a transsexual working in my team, there's', and that was a complete, you could actually believe what they were saying and the way that they talked and the way that they presented, you could actually tell much more. So yeah. But yeah values are very important for me, and I think the values are easily, to identify in a smaller company.

R3 Yeah definitely.

R1 Especially in smaller teams, and if you're organised in smaller teams. But yeah it was pretty funny to see how they (laughs), like which companies actually, like what kind of mentality also they're looking for, because when you go through the interview it must be that you kind of align with that. I'm pretty sure I wouldn't have been in the right place if I had kept going with those companies.

I And your company, the one you came back to, were values something that was important to you?

- R4 Well I, I mean they didn't really sort of, they didn't like explicitly say they had, like their specific values or anything like that, but the, my first time working there I really enjoyed it and, yeah it was a really small company. There was like at most fifteen people working there and I really got along with everyone I worked with and I really, really enjoyed it. The next time I came back sort of three or four people had left to work at different jobs and there were some new faces and I sort of enjoyed it less because the person who was sort of overseeing me my first year, and also like the first week of my second time, he left and I was put with someone else and the person I was put with to like oversee my work basically didn't really care that much, and whilst the first person was constantly finding me things that would, that I could both do and were also, would teach me something, he was just finding me jobs that needed sort of doing and were sort of like more boring, just like soldering like two hundred power cables. And it made me realise how important it is like not only what you're actually doing but who you're working with because if you enjoy who you're working with, although I think it's probably not the best way to sort of plan a career, but I think it has a bigger effect on what you're doing, because even if you don't enjoy what you're doing you can like, but you enjoy the people you're working with, you'll still like enjoy going to work because you enjoy the other people's company. So it made me realise more than like the actual field that I want to go into that you need to find a company that you do like and that you need to, yeah like if you work really, whatever you do if you work really, really hard and then you get to, and you have a [inaudible: 28:58] company sort of seeking you because you're more qualified than everyone else it puts you in a really good position because then you can pick the place where you like the people, and if you go somewhere and then you realise that you don't get along with them you can still sort of move on and get a good recommendation if you've worked really hard and like yeah proved that you're capable of doing stuff.
- R3 I think that's a really good point, that actually, that, with the overseer that actually the value of the entire internship does not only depend on the work you are doing, like the thing the company does and the company itself, but also a lot on one or two individuals that kind of are in charge of you or that you work with, because I was very lucky both times with my overseer because one time, he was very experienced, knew exactly what would interest me, what I can do, what I, so I had a result in the end, and the next one was very, just, did not have that much experience with having an intern but was very careful and cautious of what I was doing and really took the time. But then I've heard from so many people that if you don't get that attention, and often you don't even have a proper result in the end of your internship, you have nothing to present, you feel kind of like unaccomplished after putting two weeks work in something. You showed up every day and then you don't have anything that's kind of, is going to be continued, or any, nothing that actually is a noticeable value to the company. I feel like that's really disappointing, and that then also influences you on your choice, if you like that field, even though it might have been just one individual at the company that made not the best decision of giving you wrong tasks kind of, if that makes sense. Or at least that's how it was for me. I felt really blessed that I had so good supervisors kind of and good tasks.

- I But what's your impression like in practice? Does that actually work –showing initiative or does your ability to influence what you do in your internship stop if you have a shitty supervisor?
- R2 Oh yeah.
- I Like that's it?
- R2 Absolutely.
- I Do you feel like you can kind of change those conditions or not really? Tell me more.
- R3 I would say sometimes but it can definitely stop right there (laughs).
- R2 No I think I can totally relate to that because in my first two months actually, and this is going to be really surprising, but in my first two months at [Name of the company] I had no work to do. I would just go into my office and Facebook (laughter) and I got so frustrated. Yeah really. I got so frustrated, because like they have this really collaborative culture and we have our own version of Skype called WebX so managers sometimes won't even bother coming to work, they just WebX from the comfort of their couch. Some managers would be like sitting in India, San Francisco, China. So like I had managers from all around the world and sometimes, you know, there was no contact with anyone. So like I, you know, I got fed up, in my second month I was like right okay, vacation time over, I need some work, like I need to show something back to UCL, so like I complained and then, you know, I got a, I got a really good manager then in my third month and that's when, you know, work actually started finally coming in. Like I was doing work in the first two months, it's not that I wasn't, but it was very mundane, you know, doing random Excel stuff. So yeah it depends on your mentor, who you get, and if you feel like, you know, you're just another expense on their Excel sheet and you're just sitting there like a cardboard box you need to like put yourself forward and, you know, ask them for jobs. Because like at [name of the company] the mentality was find your own work, so sometimes interns would literally have to like go out there and find projects for themselves and then send proposals and the manager would accept and then you would go ahead with it. So yeah it depends on who's really looking out for you.
- R3 Yeah, yeah, I've heard a lot of times about those pointless Excel sheets (laughs). I mean like that's a.
- R2 At least I wasn't serving coffee or anything like that.
- R3 (laughs) Yeah, but I feel like that's a, especially for what I'm doing, well probably also what you're doing, it's a, one of their favourite things to give an intern to do, doing something on Excel, because it's easy, everybody can do it, and it kind of looks like you did something, but it's not like interns don't realise that it's pointless and nobody needs it.
- R2 And they.
- R3 Or that you could use a different program, and it's actually, in my second internship and it's, it was so funny, and it's like I was in a room with a lot of other internships but we had all different people from the team that were supervising us, so we had all different projects but they kind of made it interactive so we could see what other people are doing in their project. So that was a really cool idea and I would definitely recommend it to all companies because it was kind of like you had contact, first of all social contact with other internships, but then also saw so many other projects. But then there was one guy and it wa-, he worked two months on something on Excel and then he showed it to his neighbour, because before he didn't want to show it

because it wasn't done, and when it was done he showed it to his neighbour and his neighbour was like 'oh do you not know this program? You could have done it, put it, put the values in and got the result the next day', and it's not like his supervisor didn't know that (laughs). It was really, I mean they make up the stupidest things just to give you something to do and it's not, I mean that's really when an intern feels kind of used, and I mean sure you get the money but it's, your time still feels more valuable if you are just sitting there and not doing anything I think.

R2 That's true.

R1 It's actually interesting that, 'ask questions' you get told a lot, but nobody really tells you what to ask (laughs) and then you end up messing around and spending too much time on something which doesn't require the time.

R2 Yeah.

R3 Yeah.

R1 But the experience about the supervisors, to me it was actually really fun because it was (laughs), my table was, I had two places I was sitting during the internship. The first month I was sitting on one side of the room, so it was me, the guy in charge of all of the requests for proposals and DFPs, which are just different things that circulate between hedge funds and investors and stuff to be able to do the due diligence, and then the next guy was the head of institutional sales worldwide. So, and in front of me was the marketing manager, rather than next to, and like when I was sitting on the other side it was the head of UK sales, a supervisor of some sort of other things, heads of distribution, sales assis-, so everything, everything around me was like, everybody was a supervisor. So I was always like 'does anyone have a [inaudible: 35:55] here?' so it was pretty fast and, so I don't know. Like I even worked for, sometimes if there were people who came into the office and were like 'oh there is an intern, oh awesome. So do you mind doing this kind of research for me?' Or if they saw that I was doing something for a [inaudible: 36:09], for example research for institutional investors in Western Europe, they would directly, they would see that and they would be like 'oh I like this. Can you do it for me too, for these other countries?' and I would do it for them. It was pretty cool.

R3 I think that's really cool, when they actually notice, or know even, that there is another intern, and because there is.

R1 There was only one (laughs).

R3 Yeah but in companies there's always something to do for interns. I mean that's why companies like, because it's, they have the time also to do small tasks but then I think also some companies don't make it noticed to other people in the office that there is actually somebody who has the time and can support their projects. But then, also in mine, as I said one supervisor was very inexperienced, so I was in that situation that I had to ask so many questions because he really had no idea how long it would, something would take me. So some things were done really fast where he thought I would need a month for it and I did it in a week or something like that, so then I had to go and ask him again and again, and there was one week where I was literally in his office every single day, and it's really, I think I needed some time to get over that kind of shyness as an intern, to actually not have that thought in your mind that you're really annoying when you ask so many questions. But he said in the end it was really good because he just couldn't, there was no way for him to know, or sometimes he assumed that I knew things that I just didn't, and I spent a couple of

days like figuring out information and then I asked him and he was like 'oh yeah I have this, I didn't know you needed it' (laughs). So it's kind of, I feel like as an intern you have to ask those questions and cannot be really, you have to get this thought in your mind that there are no stupid questions out there, even though later you'll probably realise there are stupid questions out there (laughs) but you kind of just have to try and get over it.

R2 Yeah.

I I was wondering how important was it to understand a bigger picture or how your work tasks relate to the overall work of the company during your internship?

R4 I mean with my stuff it was always quite clear how it was like part of a bigger picture because it was just like, it was like 'this job needs doing' and yeah 'there's no one to do it' or 'everyone else is busy', so it was like very, like they didn't just completely think up stuff that they didn't need doing and like made me do it. It was all stuff that did need doing but yeah like, sometimes it was sort of a lot more boring and it was just like five hours of, yeah like literally five hours in a row of just sitting at desks soldering and then sometimes it was like, actually like finding out how a certain like microprocessor worked. Or also I did like a little project where they wanted to have a, Raspberry Pi have powerpoints put in their like entrance to their [inaudible: 39:44] like welcome to visitors when we had visitors and you can like remote update via the website, you know, so you can like change the names and[?] [inaudible] and that was sort of like a little artificial but also it just sort of like made the business look kind of more professional and it was just like a neat little project, because it taught me how to like program a Raspberry Pi and, yeah it was like quite, like I learnt a lot doing it, and at the end of it they actually had like a working system that they could like use. So in that case I just sort of always knew what the sort of end goal in mind was and like what I was doing for the company.

I Mmm, that's interesting, yeah.

R3 I think for me it was more difficult because I actually realised, I mean I really did some things where I knew exactly what I was doing and I had even done it sometimes during my course already, like kind of calculating tasks or analysis tasks, but then I realised I never asked during the lecture (laughs) why we are doing this. So there were some things that I was actually asking [inaudible: 41:02] what he would do with the data I gave him or what he would do with the analysis I gave him, and he then tried to explain me these really complex like programs that he would use then, and then he would give it to somebody else, and then in the end it would be presented to a customer. But until then he said 'your work now is going to be presented in a year at', you know, that's the earliest the customer will actually see it or the person that's going to present your work is going to see it. So it was really at, I realised how there are so many layers to it, to one project. I also, what I didn't know that, I always saw engineering as a very, I actually liked it because I knew I would get results. If you work on a project you'll see the end of a project, but then to realise those projects also take so many years (laughs) that it can be, yeah it's sometimes difficult to figure out where your work is feeding in on the kind of chain of tasks that are to do to finish one. There were also, there was a guy who's, he was working for the company already like ten years or so and he had been doing one thing. He was, there was a graph and he tried to make that graph look good, which means he changed the colours, he changed, made it 3D, 2D, he had done that for already nine

months (laughter) and just, I mean he was, he is like, I think he has like three doctorates or something, like from Athens, from London and from Germany somewhere, and he was like top of his, like all the lecture books I have are from him. But then to think that this genius is sitting on a graph, nine months, and just making it look good, it's kind of, you also get this, you realise that a lot of things are not like they present during your course. So there are a lot of, sometimes the work you do like they make it sounds so, they make it sound very different, or at least in my department, they made it sound very different, and during the internship I realised that's not what the world is out there like. For example also they make it sound here, especially because it's London, very finance-based, all going for the money, all, everybody's very competitive, as an engineer you have to stab the others in the back so you get ahead (laughter). You know, it's.

I That's the impression you got from your degree?

R3 From, from my.

I Or from your employers?

R3 Yeah, no, no, from, that's from my course.

I Okay.

R3 That's, I mean not course, it's also the professors, it's really the impression that, and it's not just me, it's not like I'm making this up, but it is a common image out there, especially for London though, because this is where people are going into finance and it's very competitive and, I mean also UCL gets a lot of, especially in the engineering, a lot of people from abroad. I think, I'm not sure what the percentage is, but there's a really huge percentage from people abroad, so there are some people in the course where I know they have companies at home or like they, they are like the top of their countries kind of coming to London to study this. So it's kind of the image that's promoted, but then when you go to a company you realise there are so many different other ways of using your skills and using what you learn, it's not just this one competitive layer. It's also depending on which company you are in, if it's a family-based company or a huge corporate company. It's very, yeah.

I That's actually a really interesting point. I'm just wondering what everyone else thinks about this - how does education or how does your degree or your course actually prepare you for, you know, the world of work

R2 It doesn't (laughs).

I Yeah?

R2 I mean well that's not true. I think, you know, you learn the basic skills, like, you know, report-writing and communication skills and presentation skills. I feel like if I hadn't been involved in any of those presentations in uni I wouldn't have felt comfortable communicating in important meetings, you know? So it prepares you for the real world to some extent, but then the stuff and the theories that you use, you don't really put them in practice. So all that stuff that you learn in lectures, I've never really used it in real life, if that makes sense, but like all the basic stuff besides the theory that you learn, hell yeah you use it, so.

I You mean the basic stuff but not theory?

R2 Yeah, but that kind of stuff you even learn in school don't you? Like you do presentations in school or, so yeah, I don't know how important it is to go to university these days.

R3 No (laughs).

- I Okay. Any opposing opinions or different experience?
- R1 Mine is completely different than [inaudible: 45:50], because in the.
- R2 But that's probably because, yeah go for it, sorry.
- R3 The type of degree.
- R2 Yeah, because like his is more technical, you know, you need to go to uni to learn how to co-, I'm sorry are you an engineer, is that?
- R1 No, arts and science (laughter).
- R2 Oh okay, right okay.
- R1 He's the engineer (laughs).
- R2 Yeah sorry. Yeah so like for him he would have to go to uni to like learn Java or C++ or whatever it is that you guys do. But like for me I'm doing information management for business, I'm doing a module called 'organisational behaviour', my lecture yesterday was on personality. I mean I'm sorry but I don't need to sit through a three hour lecture to learn what extroversion means, like it's ridiculous, you know? Sometimes you feel like why am I here? I mean but there are other subjects that are very intriguing and stuff that, you know, it isn't just common sense. So yeah it depends, as she said, the nature of your course.
- I So in the light of your work experience how would you redesign your degree? To prepare you better ...?
- R2 I don't think anyone can really prepare for like work in, you know, like the management field. It's more that it comes down to the person and like their values and how they present themselves, so it comes down to like how you present yourself in the workplace rather than what is being taught. I mean yeah they teach you like the basic theories and stuff but when it comes to the real world it's really how you carry yourself.
- I Okay.
- R2 Well that's my opinion at least.
- I Yeah, that's interesting. Anyone else has an opinion on that?
- R3 Yeah, well I mean it's just like for me I was completely opposite. I feel like the theory was even not enough, or it was done but not emphasised enough how important it would actually be later, and then, but then all these presentation things and all these soft skills, so unnecessary because first of all I really think I already had it (laughs) before I, I mean that's not why I go to uni, to learn how to talk to people respectfully or, like be, like present what I think, because that's kind of what I learn by doing I think, or it's not why I chose this degree, to learn how to do a presentation. I can do afternoon courses for that if I feel the need. And so yeah it's completely the opposite, and thinking that in my degree now about fifty per cent of the third year is based on group work seems very, it's kind of like really? You want to teach us how to work in a group? Because it's kind of what we did, I did it from my first class onwards kind of. It of course depends on the education system as well, so having an international, very international course, maybe also influence the department in making those decisions, but I feel like the emphasis on all those soft skills, presentation, has gotten way too big. I feel like education has gotten a lot less and then experience and all those soft, like just the university experience and all this around the education part has gotten a lot bigger, and I would change it by saying just, when you, yeah having a degree where you say you teach something teach that thing.

I Like engineering?

R3 And then, and give, yeah and give other offers that people don't have to take, because I mean it's very, or also making a year abroad compulsory. After doing my internships I would definitely say for every chemical engineer out there a year abroad or some time abroad at least should be compulsory, because I'm not sure how you guys see who have been abroad, but to me it's taught so much. I can see in my course everybody who is from abroad or has worked abroad is so much further, also by doing presentations, talking to people, presenting their ideas. It teaches to much more and I think that's why, yeah it's very uneven between people that have done internships abroad or have done something outside of uni and the people that are just on the course, and that makes any sense. It's very, yeah, there are a lot of parts after doing the internship where I realised they could be improved a lot, just preparing for the business world out there.

R4 I would agree that, like I think with my course they've, we used to do these things in the first years and we did one every term, that was called a scenario, where for a week we got put into groups and we were like put in the lab[?: 50:18], we had a task and we had to just do it, and they often like sort of gave us quite a lot of stuff that was pre-built to sort of like get it done, and like one of the things we were trying to do was like wiretap a wire that went round the lab. We had to like figure out what the sort of like number being sent down this wire was, and they gave us like, there was pre-written code for it but you still have to like implement different parts and stuff like that, and I learnt a lot doing that. And then last year at the end of term we did this thing called 'how to save the world' which was like we got put into groups with loads of people and we had to like think of a like entrepreneurial thing where it was like a business idea that could like help the environment or like [inaudible: 51:17] and it was like all just sort of doing presentations and like, like sort of team-building and kind of a bit bullshitty and they've now, on my course they've stopped doing scenarios and have just replaced it with 'how to save the world' and I think the scenarios were the best bit. Like they taught you loads and you actually had to build something that worked rather than just make a presentation. And when I was doing my open day like they stressed the scenarios as like a thing that UCL did that was like part of the reason why I picked UCL over other places, and they've also just like restructured the degree to have a lot less lab time, and I think that's completely like useless. Like you do need lab time because that is how you, because like yeah you can build a circuit [inaudible: 52:15] the circuit diagram works, and then you literally will follow the circuit diagram on there and it won't work and it will be because like your transistors burnt out or something, but you won't know that until you build it and actually come across real problems. But that being said the theory is still really important. Like all the theory we learn, you need the theory because it does just, like whatever you do, whatever you learn at uni, like whatever you end up doing as a job whatever you learnt at uni will come in useful but you won't have studied it in enough depth. So you'll always have to learn more stuff on the job, but it's really important to have like a vast background because it is, like even if you don't know something you can vaguely remember like, oh I think you can use like a current mirror to do that in a circuit or whatever, and then you can, the fact that you know it exists, you can go off and like look it up. So yeah, like all the theory we do is really, really important but I think the sort of presentationy stuff isn't actually necessary for

you job. Like yeah you can learn to do a better presentation in your own time, you can't use the lab with all the equipment and stuff in your own time, and at the end of the day like there's like, as an engineer your job isn't to make presentations, it's to build stuff. So yeah I think our course is like, our department, I don't know why they've decided to go down that route, but I think it's a terrible idea like.

I Yeah. Do you have anything to add Manuel?

R1 I agree, I agree with them. Like it sounds bad that they emphasise so much on the soft skills side rather than the technical, especially for engineers, and taking into account that the majority of good universities such as Imperial or, like all the good universities, they also emphasise on that, teamwork, but they actually build stuff, and it's such a huge component and they invest so much money and work hours in that. And in my case, about my degree, I mean when you go an interview usually it's going to be 'so tell me about a time when' something, and you're like 'oh yeah I did this degree called quantitative methods', 'oh quantitative' and they tick it off the list, and it's like 'oh that's called modelling, oh that's called[?: 54:52]'. And they're like 'so what about' something and I was like 'yeah I did this other thing called qualitative thinking', you know, it's in the degree, so tick the thing, and 'do you know any other languages?' 'Oh yes', so, so it's compulsory to learn a language, so they can tick it off, and, so it's really easy in that sense because literally they will list all of the soft skills that you need and they make them core subjects that you have and half of your degree is that. But then it's really cool because we do have an applied side and it's not only, so during our final year you have to take this module called 'knowledge economy' and the first week you get a list of companies which have problems come to UCL and they're like 'hey we want students to solve these problems. What do you have?' You read their company profiles and you're like 'I like this one, these ones are evil (R4 laughs), I'm never going to apply to them, these ones are' and you get all [inaudible: 55:39]. 'This one is useless but oh we'll [inaudible: 55:42], maybe will' and then you pitch to them. So you make a little group and you go them and you're like 'hi. We are team something, we are Team Apollo' or 'we are the Bloomsbury something' and it's like 'oh that's amazing, so tell me about your idea'. 'So we have three engineers and four physicists in our group and one economist and we have designed the best price strategy for your thing' and then the company decides, like you apply to three or four companies and then the company says 'I like this team, they actually presented a really good idea', and now we're meeting them and we're going to be for the next three months doing a consulting project for them.

I Uh-huh

R1 So a report. So you get to apply everything you know, and if you were an engineer and if you were a programmer you would be able to apply then and do it for them. In my case I know a little bit of economics, a little bit of, I don't know, EViews, all other kinds of software, Mathematica[?: 56:29], so I'm going to design a price strategy for a satellite launch, commercial satellitelaunch.

R3 That is so cool.

R1 So that is, which I think, a good thing from my degree, but at the same time you're right like.

R2 I used to do the exact same thing actually. I'm trying to look for a company at the moment. I'm doing management consultancy and they're like 'literally go out there

- and find a company with a problem' which is kind of awkward because you can't exactly go knocking on someone's door and be like 'so have you got a problem?'
- R3 Do you have a [inaudible: 56:52] (laughter).
- R2 Yeah 'I'll fix it'. It's so weird, so yeah it's a bit of a.
- R3 But did every team on your degree get a?
- R1 Yeah of course. There are more companies than teams.
- I That sounds interesting...
- R3 Ah, because for us it was also in part of a degree that [inaudible: 57:06] it was one company with one problem, everybody had to work towards that company, which meant it was one year kind of a war going on in our course (laughs). It's kind of you can't talk to anybody who is not on your team, then they put you together depending on grades, so it's kind of the two years, like the year before, when they announce they will put you together with your grades. You try to figure exactly out which grade you need to work with whom together and it's very, very, very competitive, and then one per-, like one team or one person gets invited, and it's because I mean, it is a lot, like it is a really nice award, but the way they present it, it, to me it doesn't have to do much with the world out there. Because there are always going to be more jobs, you're not going to be put in a team and if it, you really can't work with them you can't tell anybody or can't switch it and it's kind of you have to work with them for a year which is a really long time, and if you pay so much to depend on a team (laughs) where you know this is not what you would go for later or what you want to do later, I feel like it's very, it's too much into one direction kind of. It's just too much focus on just one thing, or one aspect of the industry you could go in later. So I like it way more like you said, you have many problems and you can already make a, you first of all see what everything, like everything that's out there, like all the different companies, all the different types of problems, and so I like, that sounds actually really cool compared to ours where it was, you get one problem and then, there is no inter-exchange, you're not really getting taught by the institution that you are, you can learn from everybody and I feel like it's a more, yeah.
- R1 The only problem with this subject is, and they found this, the cool thing is that I was with the first people who started this degree, but because I skipped a year because of my year abroad I am not doing the same degree, the same subject that they were doing last year, which is the same kind of idea (laughs). The only thing is that you have academia stepping in and saying 'so this is how you do consultancy. Consultancy can be going to the doctor and you are consulting the doctor' and you're like 'yeah but that's not management consultancy', and they make you do essays following their idea of what it was like to work and I think (bleurgh noise). The distance, the [inaudible: 59:35] you have, and you find this in every single, I mean in The States it's really cool because they try to involve the corporations and private institutions, private investors as much as possible with the universities, which to some extent is good, to some extent is bad, but that's debateable. But you get a bigger, better taste. But when you get someone who has worked in academic but has never actually gone, you know, a job in consulting and they get you, they try to make you write an essay about some sort of sector which you might even know more about and you have to agree with them when you know that you're the one who's right, and that's incredibly stressful.
- R3 Yeah.

- R1 So luckily for us they changed that this year.
- R2 What's the problem statement for the company that you're working for?
- R1 Mmm?
- R2 What's the problem statement for the company that you guys are going to be working for?
- R1 Um.
- R3 Or which direction, do you know? Like what direction [inaudible: 1:00:29]?
- R2 Or like what industry are they in?
- R1 What the, my company?
- R2 No, no, no, like your group pro-. You're doing a consultancy project right?
- R1 Yeah.
- R2 Yeah so what industry is that company in?
- R1 It's satellites. So it's, it's, okay so it's a start-up and they basically have a new model for scientific satellites with a commercial purpose. Rather than a go to NASA or go to The European Space Agency or the UK whatever and ask for funding, wait for ten years until they tell you 'yeah we're going to give you fifty per cent, find the rest, twenty-five million pounds, as you can'. So basically they have a different model which is really cool. They can build a satellite super-fast and they can launch it in like three or four years, whereas a normal product would take fifteen to twenty years. I don't know, they provide unique information and we're basically doing research, but I think we're going to have to, like we're going to have to find out a lot more stuff. But it's really cool because we're going to do all of the, like find out whether they're going to have, whether it's actually a viable project. It's still early stage but it's that thing like you can actually have a huge impact and that's really important. Coming back to that point really fast the cool thing about the internship I had was that every little thing I did, every little company fund I found that was willing to invest in, I don't know, like, it was like okay I got off the phone and I was like 'yeah it's this', I passed it on to the European investments guy. I was like 'this fund[?: 1:01:53] is interested in', I don't know, 'this fund of hedge funds', for example, 'is interested in comingled funds with', I don't know, 'with a focus on macro-loan only'. 'Oh yeah I see', 'or this other, this other investment fund might be the most interesting one for them', and they were like 'okay'. The next thing they knew they'd made a sale. That's how fast it was. And then again the fun-, I mean the amount, I was the only one doing that kind of research at the time.
- R3 That sounds really, I mean.
- R1 It was really fast-paced.
- R3 I mean it sounds really like they trust you, you know, and it's kind of, yeah, it's good.
- R1 Yeah, and I still, like that, I think that's a, well, the good thing about it is that you got to see it right away. The bad thing is that they were twenty down on the year[?: 1:02:32], so I don't know, maybe there was a, some sort of institution which invested and you had made them invest and then you think like oh shit they lost like twenty million in less than a year, you know? (laughter)
- I That's interesting. To go back your studies after an experience like that. Do you approach it differently now?
- R3 Yeah I do, a lot.
- I Tell me something about that.

R3 Like in my course you can tell by looking at the people if they have done an internship or not (laughs), or if they have had other experience than the degree or not because they think about the industry way more relaxed but are less happy in the degree, or with the degree, because the style is so different from other things out there. It's very, I think my degree is very extreme with it, but I think it's for other degrees too, that when you come back you realise so many changes and you, I kind of, for me it was I can't wait to get back (laughs) to the industry because it's very different from sitting in the library and learning, like actually doing what you've already learned and used it, it was much more satisfying for me in a way. So I approach it in a way different that I don't take everything so seriously any more. It's just when I have a problem I think about it and be like ah, and I know that it's like, I can imagine how that would feed into something so I realise, so I'm really interested in it and put a lot more work in it and, well not necessarily just that, but also I'm more behind the work. But then when I realised oh this task is, I'm never going to see it like this because I know exactly that somebody else is going to, for example we have to do sometimes like market research and I know that as an engineer I, of course I will have to get a picture of the market but there's always going to be a whole team of like fifty people who are going to do market research, so it's not really, I know it's not one of my necessary skills that I need. So I go onto the work a lot more relaxed, other than other people that think oh this is, I don't un-, like I ca-, I'm not really a hundred per cent good at this so I really stress myself out to get this right, and I'm like you're not even, you don't have to stress because it's, you will never see it again kind of. But, so yeah it's a huge difference. I mean this maybe was a bad example, but it's kind of like that.

I It sounds like you're more selective now about what you stress about [inaudible: 1:05:23].

R3 Yeah, yeah and it's, yeah it's way more relaxed because you know it's not as scary also as professors sometimes make it sound. They make it sound like a really big scary world out there sometimes. I mean especially in my Bachelor they, that they start so early, I realise that it's not necessary. I mean there's such, so much lack of engineers out there that everybody's going to get a job somehow (laughs). It's kind of more that approach that I have now than before where they said 'you'll all compete for one job'.

I Yeah.

R2 (whispers) I'll really have to go.

I That's fine.

R2 It was nice meeting you all.

R3 It was really nice to meet you.

R2 Bye bye.

I Yeah, what does anyone else think about that? Like going back to uni after, you know, and having worked and been like immersed into like real life, a real workplace? How does it feel?

R4 Yeah the only thing that I realised was that we should, I should do more practical stuff even if it's like in my own spare time, just like little projects, and that the best way you learn is by doing. But other than that not much if I'm perfectly honest. Like I still think that the theory is important and I don't think that like they should change like the amount of theory we do or anything like that, but there's a good amount and they teach like it in enough depth for you to know it and yeah, it's just that we also need to

be able to apply those skills. But perhaps, like I don't know how, like it's definitely better to have a broad theory base and then go to whatever job and then learn your practical skills there, because pretty much every, like I went to the careers fair and pretty much every company was like 'yeah you don't need to know anything about the subject that you'll end up working in because we're going to have to teach you how to do it anyway'. So I guess like having a broad theory, it, yeah like having a broad theory is really important and you can like learn like practical skills on the job, but if they also did some more practical skills it wouldn't be a bad thing. I'm not a fan of the soft skills side of it at all, like I just don't really think it's necessary.

I Do you have anything to add?

R1 Yeah just, well I mean to me as well it's different because I did a year abroad so coming back from my internship I didn't get back to uni and it wasn't the same dynamic and it wasn't, there wasn't anything similar, but it did make me reconsider everything, like I knew instantly that it didn't matter really what I studied at uni. Like as long as I had some sort of credential or some sort of way of justifying that I would be good working for a team in some sort of corporation or a small company I knew they would teach me the rest, so there wasn't really much there. So, I don't know, so I just started doing things that I really wanted, and the same for this[?: 1:08:45], like I've always wanted to do proper economic development, proper environmental economics, learn a little bit of modelling, new programs, EViews, Mathematica, all of these things, [inaudible: 1:08:53], I don't know, stuff like that. So when I can, and behavioural and neurobiology, and I was like okay I'm literally going to study what I like, I'm not going to bother about so much in, like during my degree, about getting a job at the end. You know, that comes, and if not you can always do something else, work as a teacher, do something that you actually like. Like it made me value my time so much more, so much more.

I Okay.

R3 Yeah.

R1 But I think I, I've got such a, but I didn't learn this right away. I didn't come out of the internship and I was like oh yeah maybe there's [inaudible: 1:09:24], I mean it took time for me to realise, and I'm realising now how much it has changed my point of view, what I want to do.

R3 Yeah.

R1 But yeah, I mean not to say that I'm not going to try to apply to a graduate programme or work for a little bit, but I definitely want to do new things and definitely in education, sort of explore new horizons, new ideas, new methods, new, and even if there's[?: 1:09:47] soft skills are there, I mean soft skills are always important, and believe it or not people don't have them in[?] corporations, especially when they have come from very, very technical backgrounds. But I think it's all learn by doing, you learn on the job, that's my experience. Anything you're going to learn outside of uni, that's up to yourself, but in the job you're going to have, I mean you simply have to [inaudible: 1:10:06].

R3 Actually.

I How do you, ah sorry.

R3 Actually that's a, you said really good two things. Sorry, I was really astonished myself. One where you said it doesn't matter what you study at uni. I read an article about how many people end up in jobs which they don't study anything for, and they are even, there was a comment from a lawyer and he was like 'if I would have known, nobody round me studies law and I regret it so much because I hated the degree so much but I love the job and I'm really good at it, but if I would have known before

that I don't need (laughs) to study for it', like it's a really, he really regretted like his so many years he put into it, and it really made me also think more critical of my degree, definitely, when I came back. It's not like I had all these impressions before my internships, I wouldn't have gotten to that point of thinking so crucial about it because it was kind of everything I knew, but in my internship there were a lot of people from other countries, so I kind of got to know a lot of other education systems and to compare them, and I mean I've studied in the UK before, ah in the US before and in Germany before and it really made me realise how much people can improve on it in all countries. But then here I realised, especially for the UK where I did my degree, I realised that there are a lot of jobs where if you really know after high school what you want to do it's really sad that society thinks you need to spend four years on studying and learning social skills, because I do think there are people out there that with sixteen or eighteen have amazing social skills, know how to present themselves, and if, there are other systems out there, also within Europe. It's not that far off, you know? It's, there are, that you do, for example, you get kind of, you do three years as your further education but you, in that time you work for a company, so you really, as you said some people really love this hands-on thing and they learn better by doing that, they learn the theory better by seeing what they are doing and talking about. So there are systems which include, they say you work for a company half a year, then you get classes half a year, then you work for a company half a year, then you, and that for three years, and it just, for some jobs it does give you such a more solid basis for what you actually want to do. And it doesn't mean you have to stay with that company forever, because at sixteen or eighteen you can't really know which company you are going for, but it does, there are so many people on my course where I know they would learn faster or better when they would have this hands-on experience. I think it's very sad that, in the UK especially, I mean such a high percentage goes to university and actually gets a degree. In other countries it's, you start working for a company if you want to be a, if you want to work with animals, and you can teach the theory yourself and take classes extra, but you can't, or, okay doctor is a bad example, but there are things (laughs) where you, you just have to work with people and you have to learn how to do it and you have to get the structure and it's not necessarily something you can learn from textbooks. So, and it maybe would be more efficient to learn social skills that way, like by doing, in practice, than trying to fake it kind of doing a degree, by group work for a project that's not necessary.

R1 But I don't regret doing a degree in any way.

R3 No, no, no.

R1 [inaudible: 1:13:51].

R3 I actually think for my job it's perfect, it's really necessary to do all the theory and, but I do think there are people out there or degrees out there which are, which could be modified with a lot more hands-on because either the people really want it or it would actually make it so much easier for them to then proceed to working, yeah.

I Yeah. Did you want to say something?

R4 I can't remember what I was going to say.

R3 Oh sorry (laughter).

I I'm just curious how do you use your degree, or the theory that you got from your degree, in the workplace? Like when did you find it particularly useful? but is there anything about theory that actually helped you in your day-to-day work or that was relevant for your work?

R4 Well the thing is like with mine it was sort of, it was all pretty much programming and once you know how to program, and we did do a bit of programming on our course, programming's like a weird one where pretty much everything that you want to do has already been done before and so once you know the key concepts if you're trying to do some task and you don't know how to do it you can pretty much just Google something and you'll find someone who's done something really, really similar and it might just be like in a different language or it's the same language but like slightly different implementation, and you just sort of edit that. So in my specific case it was just sort of like once the theory of like knowing how to program, you know how to program, it's sort of just Googling stuff and implementing it, but I can imagine in other stuff like it matters a lot more. I mean this isn't really like related to my work experience, but at the moment I'm doing, my fourth year project is about the D-Wave quantum computer and like I basically am trying to, like it's, it involves loads of theory, like I'm trying to implement error correction with D-Wave, which is a computer that only performs, well it's called quantum unconstrained binary optimisation, and it's just like, it's, you need so much theory in like quantum mechanics and physics and, well physics in general, but, as well as like electrical engineering with error correction codes, and it's like you couldn't even begin to start on it if you didn't know like theory from loads of different areas, and my sort of areas for my degree [knock on door] like it literally draws upon everything. So yeah.

I Okay, yeah. Thank you. Does anyone else want to add something

R3 For me it was actually the formulas and the theory. I could have.

[break in recording]

I Okay, so we were talking about the kind of degree knowledge that you've found relevant as you were going about your daily tasks in an internship [inaudible: 0:13].

R3 For me it was actually theory, like learning programs and formulas, which is a, they make it look like it's a big part, but then you realise that those things I could have looked up. It saved me a lot of time doing my work, but I could have found work, like ways around it. I could've used textbooks and, but what it actually really did teach me, and I could have not picked this up in just a three month internship was this critical thinking and way of studying engineering, or chemical engineering, because it's a, I feel like it's a very certain way of approaching problems and a very certain way of including, like we kind of have this interest[?: 0:59] that it's always, we always think right away about risks and problems, and it's very, these problem solving skills, it's, I could have not taught myself, because I wouldn't have known before the degree that this kind of thinking is out there. It does teach you a lot like that, so I, it does go into the direction of soft skills but it's not presenting or something that people would naturally say 'oh yeah this is a soft skill that you need', like because it's a very certain way of approaching things, and during my internship I needed to use that all the time, and I realised after some time that after just my high school degree I was never thinking like that, and being so fast. It taught me how to be fast, how to, what actually is important, and engineering is a lot like, you get a calculated number of six thousand but then you use seven thousand five hundred anyway for it, so it's very approximate, it's not really direct. So this kind of knowing what's important, knowing what's not important, I could have not done that without my degree, and also it gave me so many useful sources which I needed during my internship, yeah, so.

I Okay.

R3 It wasn't an internship which I could have done just coming from high school.

- I Does anyone have anything to add?
- R1 For me it was a little bit different. Okay, the skills I learnt in uni applied to the workplace, not many. Analysis, soft skills, maybe learning a little bit of jargon and stuff like that. Things I learnt by myself, much more important, learning about financial markets and stuff. I never took a module in financial markets until I went on my year abroad which was after my internship, so nothing much there.
- R3 But you said you [inaudible: 2:47].
- R1 that was in my year abroad.
- I Does that like kind of feed into anything that you ever did in practice?
- R1 Well if I was to go back into sales it's pretty much the backbone. It's easy to, you know, use the [inaudible: 3:03], you shouldn't because obviously it's like massive manipulation. It's that we do not just techniques for sales, it's not, like it's nothing, it's something that it cannot be[?: 3:12]. But I mean even if you're in a sales appointment you have different, I mean obviously you learn the ways of, you know, selling some sort of product, the ways and, the ways of making it legal but also some, like being legal but convincing. So very, very persuasive. We didn't do anything illegal, just [inaudible: 3:30]. But then there was what you mentioned about learning, studying, I mean I don't think I would've had the confidence to do an internship like that if it wasn't because of uni. I don't think I would've had the, and then again learning like soft skills, looking at languages, I don't, another thing I learnt here in UCL is that the way they teach languages two hours a week is not good.
- R3 It's ridiculous.
- R1 It's useless, it's completely useless, and when I went to The States it was a completely different experience. I did one hour every day plus another hour by myself plus another hour plus homework every day, so it was stamina, and that stamina's also something that is very important and it also shows you that you can't cram for some things if you want to learn lifelong skills, especially with engineering, especially with coding. You really have to get down to doing it every day, and if there is something that UCL and like, well not UCL, but the university has taught me in an indirect way is that you have to, like the way of learning, which is important for every single, I mean and I think they do it advertently but also inadvertently, because they teach you only for two hours once a week and then you have to learn that, you know, you can't just do that cramming by the end if you want to remember something in the long-term. So indirectly they teach you, you know, sit down one hour every day, do your thing, even if I have never told you about this because it might come up in the exam or it might do, like do your own thing, and that teaches you a lot. Self-learning then is something you apply later on in life for everything you do, so.
- I Okay, yeah.
- R3 Actually isn't it for you degree like that? Like in the exam something can come up what you haven't?
- R1 What language is this?
- R3 I was saying like just.
- R3 Yeah, because I did a language module and I was very surprised that there was only two hours because it's.
- R1 Yeah, no it is, it's not.
- R3 It's very difficult to do on a, like to write so many pages paper in the end of the year by just, if you only spend two hours on it.
- R1 Especially with Chinese [inaudible: 5:27].
- R3 Everything else, yeah, especially for me everything else was science-based so it was always like kind of to the side. But then for the other subjects what I found with my

degree not so good was that the exams are totally contradictory to everything they teach throughout the year.

R1 Oh dear.

R3 It's not, no, in the meaning of the way you think. Like during the year they say you have to think on your own, come up with ideas, make it work, be out there kind of. It's this really innovative thinking that they teach throughout the year, or that they try to get across, and also like do your own research in the library and things like that. And also the homeworks we do are very, yeah it's something new you haven't seen before, you can't get a hundred per cent because there's nobody out there who is getting a hundred per cent on this because it's just a problem that exists and nobody has a solution but try your best. But then the exams are, there is no mark in it, or no question in it, or nothing that kind of gets you to think. It's kind of you can study the lecture notes by heart, which a lot of people do because they come out of systems which, all through high school there are systems that just get, teach you stuff like, teach you how to learn by heart, and so to do the exams then in such a different way and not implying this critical thinking is very sad in a way, because it does promote the picture that everything you, they aim for it's not really important.

I Yeah.

R3 It's, of course it's easier to mark and it saves time and it's easier to give points, but I feel like to be consistent with what you teach and the values you teach and, is, yeah, for my degree it's very different, if you guys know what I mean. It's very far, as it's, if you learn the lecture notes by heart you have everything and I feel like for universities where you are supposed to be thinking by yourself it's not the way you can test if you are in the subject or not somehow.

I Okay.

R1 It reminds me of the Spanish system. You learn, you literally learn off by heart and then you do the exam and [inaudible: 7:42]. Here it's a little bit different, here if you don't think critically you're screwed.

R3 Yeah exactly, that's what I mean, that's [inaudible] what I said.

R1 Like you can be, you can know like even the page where this [inaudible: 7:51] and it's just not going to work.

R3 Or what you said, that you kind of have to try to write down what your professor is thinking, to make.

R1 Oh yeah, no, that's really about like with qualitative, especially BA subjects, or, I don't know, very subjective, things like philosophy or politics or something like this, like you have to know what your professor's opinion is or your, or the guy marking the exam, like what their opinion is. If not it's like you're literally never going to get, I mean it's already impossible pretty much to get over seventy per cent. Like they tell you 'no if you get over a seventy-two it's published', like it can be published, and I was like 'oh that's great', but it's literally impossible. If you don't, and if you don't know it you're gone.

R3 What's published? Seventy per cent? You're, it's.

R1 No I think they would, I mean it depends on the subject, but for example.

I Does it mean like pass, publish?

R1 Hmm?

I You said, does it mean like pass?

R1 Publishable.

I Oh publishable, okay.

- R1 So it would be publishable. So in the sense that they say, I don't know, there was this philosophy module I took and it was like 'yeah and if you get over eighty per cent I mean we'll probably, your work can be published', but that's [inaudible: 8:55] so.
- I Oh wow, so they'll, okay. But that's a criteria on which they, wow, okay, that's interesting.
- R1 They literally were like that. Yeah, or, you know, there was this one time where they literally gave us a book which they told us 'I've read it, it's good, it's in the library' and I went to the book and it had in it the lecturer's notes and what was underlined I used it for an essay and I got a seventy-eight, and like it was the highest, one of the highest grades, because I was the only one who actually bothered to go and take the books out. And it turns out that they had already marked what they wanted us to say (laughs). I don't know if it was the same professor but I'm pretty sure that it was someone who was very interested in it and had got some sort of. In the end it was a great decision on my part.
- I That's pretty interesting.
- R1 That was the best score yet I've got in university.
- R3 But I think.
- I It's a lot about values isn't it, like philosophy and social sciences?
- R1 Yeah obviously.
- R3 I feel like that's really sad on the other hand, because to me when I was younger I had this really idealistic and kind of naïve thinking about university, to be like so many different people who come together and have all so many different thoughts and it should not be graded on how different your thought is. And I actually still believe that but I know I can't approach my exam thinking like that (laughs). I have to kind of fit into the system too.
- R1 But I think it depends very much on the, I mean obviously not all professors are people like who are the same [inaudible: 10:11].
- R3 Yeah it does depend on the professor but it's not really.
- R1 But it happens.
- R3 Yeah, and it's sad that a lot of people.
- R1 It's something that you have to take into account.
- R3 It's a lot of professors that kind of want to hear what they think.
- R1 And even if they try to be as neutral as possible it always helps, always, every single time.
- R3 Yeah, yeah.
- I Okay guys, thank you so much. Is there anything that you think that we should have covered that's really important for internship experience?
- R3 Maybe something how we got the internship because that's something that would interest me.
- I Yeah.
- R3 If I, I'm not sure, like how many people have connections, and I don't think that's a bad thing to ask because it's normal and it's, it does help so much especially, in my industry it's very difficult to get it without connections or something, or the way of applications, because there are some companies that do tests and interviews and some companies that just want to have an email with your CV on it. So that would be interesting I think, and how much it's valued by the university. If the university, that's something that would interest me, if universities or departments actually care about if you did an internship, because someti-, like mine actually does say they want to know but then they only know where people did it went for Shell and they actually went there and said 'I did this, I'm so good', you know, and I feel like a lot of people don't

tell them because it just, or actually I didn't because I wasn't there, why would I go there and say? It's very, some departments actually ask you and some don't and I would, I think that could be interesting, if there's a feedback to universities or if universities just say you should do it, internship, and then don't care or if they actually are interested in, yeah, yeah outside experience, yeah.

I Yeah.

R3 Maybe something like that.

R1 There's one, just one little thing.

I Yeah. Go on

R1 If they could avoid putting pressure on students from the beginning to try to find an internship and make you re-, and make you, and get rid of this mentality that you're not going to get anywhere if you don't get an internship, because that is devastating emotionally and psychologically and it's taken, like it's taken a strain on me and it's taken a strain on a lot of friends and peers, and I think it's.

R3 It [inaudible: 13:53] doesn't work, right?

R1 They really, like they really shouldn't.

R3 Yeah. It's so unnecessary and it influences your work, I mean.

R1 It also, it's, it biases your perception of work, of the workplace, it biases, it biases your idea of how to, you know, it's much better to be like oh well.

R3 The whole creativity is gone kind of because you are trying to do your work and trying to find an internship and you feel so, like a lot of people in my degree or that I talk to feel very pressured and don't feel like oh yeah I can do it, I have these amazing ideas, these amazing skills, and like the whole inspiring thing is kind of gone if the department tells you you're not going to get a job (laughs) [inaudible: 14:28] if you get this internship with a company [inaudible].

R1 And then like to [inaudible] it had a, like the thing that oh you know you need it for your degree but it's not that we're going to give you one, it's that you have to find one and, I don't know, it just.

R3 Takes the fun away (laughs).

R1 Well not only the fun but you try to, you know, you try to make it meaningful as possible, you become a little bit obsessed because you're applying from the beginning and they tell you from the beginning 'apply from the beginning' and all the job offers I got were at the end, right before the summer. I actually started working like a week after I got the offer. Got like three offers in a week, but I was the whole year obsessed with finding an internship and it's [inaudible: 15:04].

R3 But it's, it's fine, I mean you realise, you go into industry and people tell you it was the same for them, it's not, right?

R1 Well everybody has a different story.

R4 I need to go.

I Okay, cool. Do you have anything to add is there something else that you feel like we should have covered?

R4 Not particularly, no.

R3 It's really cool to hear that other people have a similar.

End of transcript.

Figure C.6 Topical trajectories for focus group 2



Table C.2 The list of topical episodes and themes for all the focus group

The meta-categories	The topical guides	Topical episodes
reasons for doing an internship	finding work more generally	internship as easing one's way into work networking with the companies
	exploring a professional identity	internships as 'tasters', 'feelers' and 'trying out' of a particular profession in order to avoid feeling 'stuck' in an unwanted career route
	learning about the employers' perspective on employment	learning how employers think about internships learning what companies value in graduates
	learning	learning something different than in education gaining practical knowledge
the main insights taken from the internship	insights about the world of work	responsibilities attached to work trust as an element of work relationships boring, menial aspects of work rules and norms in different industries and countries regarding selection the importance of senior people/team for quality of work and the work experience overall
	insights about education	differences between performing well in education as opposed to work (including the meaning of deadlines, finalising the tasks, etc.)
	insights about their own expertise	developing new ways of performing to solve work-related problems the importance of working with others and using their expertise to solve a problem the importance of knowing the context of the task and the role the tasks have in the bigger picture and the outcome of the task
The effect of the internship upon returning to education	internship repositioned in relation to their degree	after the internship the degree became a resource: <ul style="list-style-type: none"> - to develop professional judgement - to develop knowledge and interests that are not work-related - to be more critical of the degree and consider ways it could be improved
	internship repositioned in relation to work practice	Degree became a resource to see the professional expertise one had in a different light
	internship repositioned in relation to their self-understandings and trajectories	to modify a career path or a trajectory to develop a new sense of what one is interested in and new self-understanding (e.g. by exploring a particular industry)

