

**ACADEMIC DEVELOPMENT TO SUPPORT
PEDAGOGICALLY-INFORMED USES OF LEARNING
TECHNOLOGIES**

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Declaration

I, James Cilia 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.

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Abstract

Learning technologies are increasingly common in higher education institutions, but academics are frequently unsure how best to use these. Staff development activities focussed on technology skills are not sufficient for academics to design sound technology-based educational experiences. This research study explores this problem, seeking to increase understanding on how academic developers can support academics to make pedagogically-informed uses of learning technologies.

An exploratory case study methodology was used for this 44-month research study. The data collection included class teaching observations, document analysis, semi-structured interviews and forum postings during a professional development (PD) course. The first phase of research involved the development and testing of a class teaching observation schedule, to understand current practice. The second phase of research included class teaching observations and interviews with participating academics to identify their learning needs. These research activities informed the design, development and delivery of the first part of a PD course. The final phase of research involved (a) interviews to understand the participants' experience of the first part of the course and to identify their expectations for the remaining part of the course and (b) the delivery of the remaining part of the PD course. A thematic analysis of the participants' forum posts and mid-course interviews led to the identification of five themes.

The main contributions of this research study are related to (a) the process of academic development for learning technology use, and (b) the process of studying academic development. This study shows how the teaching development of academics can be addressed through flexible and just-in time academic development, and engaging academics in activities related to their teaching context. The student experience of technology-based teaching, the course learning resources and activities, the facilitator's guidance, the diversity of participants' experiences and peer discussions support academics to develop pedagogically-informed positions on teaching and learning technologies. Methodologically, the thesis suggests that researchers should use a diversity of data collection tools to gather and analyse evidence about academic development.

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Abbreviations

AISHE	All Ireland Society for Higher Education
AR	Augmented Reality
ATI	Approaches to Teaching Inventory
CA	Constructive Alignment
CCSF	Conceptual Change / Student-Focused
CF	Conversational Framework
CPD	Continuous Professional Development
Col	Community of Inquiry
ECTS	European Credit Transfer and Accumulation System
EHEA	European Higher Education Area
F2F	Face-to-Face
FLC	Faculty Learning Community
HE	Higher Education
HEA	Higher Education Academy
HEI	Higher Education Institution
HERDSA	Higher Education Research and Development Society of Australasia
ICED	International Consortium for Educational Development
ICT	Information and Communication Technology
IJAD	International Journal for Academic Development
ILO	Intended Learning Outcome
ILTHE	Institute for Learning and Teaching in HE
ITTF	Information Transmission / Teacher-Focused
LA	Learning Analytics
LO	Learning Outcome
MOOC	Massive Open Online Course
OER	Open Educational Resource
PD	Professional Development
POD	Professional and Organizational Development Network

Q&A	Question and Answer
SEDA	Staff and Educational Development Association
STLHE	Society for Teaching and Learning in Higher Education
TEF	Teaching Excellence Framework
TEL	Technology Enhanced Learning
UKPSF	United Kingdom Professional Standards Framework for Teaching and Supporting Learning
VLE	Virtual Learning Environment
VR	Virtual Reality

Chapter 1: Research Orientation

1.1 Introduction

This chapter provides an orientation to the research study. The first part of this chapter presents the background and the rationale for this research. The problem statement, purpose statement and research questions are next presented. This is followed by a brief overview of the research design and the significance of this study. The chapter ends with an overview of the chapters making up this thesis.

1.2 Background of the Study

Learning technologies are increasingly common in higher education institutions (HEIs) and there is an increasing expectation that academics will use these to enhance the student learning experience. Academics are generally not prepared for teaching as they are for research, and they often rely on their personal classroom experiences as students and teachers when teaching (Moses, 1993; Halpern and Hakel, 2002; Donnelly, 2008). They usually emulate the teaching practices of professors who had a positive impact on them when they were students. In most disciplines, the technologies that are currently available are different from those that academics have experienced as students. Consequently, many academics do not have personal experiences of technology-based learning and they are often unsure how best to use learning technologies in their teaching. Many research studies show that academics frequently use technology to replicate and supplement existing pedagogical practices (Hoffmann, 2006; Kirkwood and Price, 2014), rather than to transform the teaching and/or learning processes and outcomes. Technology is generally used to reinforce teacher-led and didactic practices, and there is little evidence that this is changing the pedagogical practices of academics to enhance the quality of the learning process and outcomes (Laurillard, 2008). Meaningful student learning is an outcome of effective pedagogical use of learning technologies. Encouraging academics to adopt and innovate their teaching with technologies is a challenge for academic developers (Wilson, 2011). Staff development activities focussed on technology skills are not sufficient for academics to design sound technology-based educational experiences. This thesis addresses the professional development (PD) of university academics with the aim of enabling pedagogically-informed use of learning technologies in their teaching.

The context of this research study is my workplace: a traditional campus-based university focussing on both teaching and research. In 2009, the senior management of this university approved an e-learning strategy document, and soon after I started coordinating the activities of the university e-learning unit, implementing the objectives indicated in the strategy document. The institutional virtual learning environment (VLE) was set up and I started facilitating training workshops for academics. These workshops covered the use of basic features of the VLE including: uploading of study-unit descriptions and lecture notes, creating links to online learning resources, using the assignment submission and communication features of the VLE. The focus of these workshops was generally limited to the use of the VLE as a content repository for learning resources and for administrative purposes, hence improving the efficiency of the teaching and learning process. These workshops led to increased use of the VLE by academics; however, these workshops were less successful in terms of helping academics improve the quality of the learning process and outcomes through learning technologies. I recognised that the training workshops in their present format were not supporting academics use learning technologies to enhance the effectiveness of the teaching and learning process. Consequently, I felt the need to embark on this research inquiry to explore how this issue could be addressed.

1.3 Rationale for the Study

This section presents the rationale for this research by highlighting salient points from the literature about the aims of higher education (HE), models and frameworks for university teaching and learning, and PD for technology enhanced learning (TEL) in HE. A full literature review follows in Chapter 2.

1.3.1 The Aims of Higher Education

The ideals of HE have been consistent for many years (Laurillard, 2002; Garrison and Anderson, 2003; Ramsden, 2003). The goal of university education is to provide educational experiences that support students in the development of critical thinking and self-directed learning abilities that can serve them over a lifetime. University education involves more than acquiring a body of high-level knowledge, which may become irrelevant or obsolete some years after the students graduate. It is an educational experience that involves a series of activities that help students develop the skills of 'critical analysis' and 'learning how to learn' (Dearing, 1997).

There is also considerable literature advocating for lifelong learning in HE. This literature mentions skills to respond flexibly to changing circumstances, to learn throughout a career, to integrate theory and practice by generalising from a theoretical knowledge base in order to deal competently with novel situations, etc. (Knapper and Cropley, 2000). Graduates should be able to interact with new problems reflectively and thoughtfully, and to find out more how to solve these; that is, they need to be continuous learners.

The traditional teaching and the standardised objective assessment methods that are often found in university education do not encourage critical thinking and life-long learning abilities (Bligh, 2002; Garrison and Anderson, 2003). It has been argued that university teaching should move beyond simple presentation methods to facilitative methods that introduce interaction or critical discourse between the students and their teacher, and between the students themselves (Garrison, Anderson and Archer, 2000). Laurillard (2002) similarly claimed that effective academic teaching necessarily involves a continuous dialogue between the teacher and students.

1.3.2 Teaching and Learning Frameworks for University

Many models and frameworks have been proposed for teaching and learning at university. Three widely cited frameworks have been selected for the purpose of this study (as will be explained further in Chapter 2): Constructive Alignment (CA), Community of Inquiry Framework (CoI) and Conversational Framework (CF). These will be outlined briefly here to provide the context for the discussion that follows.

The CA theory is a framework used to improve the quality of teaching and learning at university (Biggs and Tang, 2007). The CA has two aspects: (a) constructivism and (b) alignment. The constructive aspect refers to the idea that students construct meaning through relevant learning activities. The alignment aspect refers to what the teacher does. This involves setting up learning environments that support learning activities appropriate to achieve the desired learning outcomes. The teacher implements teaching methods and sets assessment tasks that are aligned with the learning activities assumed in the intended learning outcomes.

The CoI is a conceptual framework that identifies three pre-requisites for higher-order learning: (a) cognitive presence, (b) social presence and (c) teaching

presence (Garrison, Anderson and Archer, 2000). This framework is based on a collaborative constructivist view of teaching and learning. The constructivist view implies that the learners construct meaning or reconstruct experiences from a personal perspective. The collaborative view implies that learners refine and confirm their understanding collaboratively with a community of learners. The students build their personal knowledge in a social environment with a diversity of perspectives that encourages critical and creative inquiry.

Another influential pedagogical framework for representing teaching and learning at university is the CF (Laurillard, 2002, 2008 and 2012). The framework is based on cycles of interaction between tutors and students involved in the formation of concepts. The CF represents the minimum requirements that any learning environment should provide to support the complete learning process at undergraduate level. Laurillard (2008) claims that the CF maps the main learning theories, including instructionism, constructionism, socio-cultural learning and collaborative learning, giving a complete description of what it takes to learn. The framework can be used to challenge both conventional and technology-based teaching.

1.3.3 Professional Development for Technology Enhanced Learning

Most HEIs are facing challenges with regard to tighter finances, increased student numbers and the quality of student learning (Garrison and Vaughan, 2008). In response to these challenges, many universities are redesigning their courses to integrate conventional and innovative technologies (Twigg, 2003). Many universities have embarked on PD initiatives to help academics integrate technology into their teaching practice effectively. As will be discussed further in Chapter 2, these PD initiatives usually involve technology training workshops, seminars, project work with course production teams, etc. The most common type of PD is the short technology workshop, which attempts to help academics develop their skills to use a specific software application. Garrison and Vaughan (2008) claim that these workshops do not create opportunities for sustained critical reflection and discourse about one's teaching practice. Furthermore, after following the workshops, academics "often use learning technologies to reinforce, rather than to change, existing teaching practices" (Garrison and Vaughan, 2008, p.50). The challenge of using technology to improve the quality of student learning, is even more difficult because the "greater proportion of new faculty in higher learning institutions have had little formal teaching

development or experience” (Garrison and Vaughan, 2008, p.49). Academics will therefore use technology to “enhance conventional learning designs, rather than generate designs that are much more effective and innovative” (Laurillard, 2009, p.6).

As indicated earlier, I recognised the risk that the format of the technology-focussed workshops at my institution at the start of this research, may not help academics exploit the potential of learning technologies beyond improved access to teaching materials and enhanced communication with students. This risk is not specific to my institution only, however:

[F]ew universities have gone far beyond the provision of technology for information, communication, and organisational transactions, to use its wider capabilities to improve the quality of the learning experience itself. (Laurillard, 2008, p.525)

1.4 The Problem Statement

As indicated earlier, academics are frequently unsure how best to use technologies in their teaching. Staff development activities focussed on technology skills are not sufficient for academics to design sound technology-based educational experiences. Encouraging academics to adopt technologies and innovate their teaching continues to be a challenge for academic developers (Wilson, 2011).

The broad purpose of this research study is to contribute to the body of knowledge about academic development related to technology-based teaching and learning at university. More specifically this research explores the effects of a pedagogically-focussed course about learning technologies on a group of academics teaching in a traditional campus-based university. This study addressed this main question:

How can academic developers assist academics in HE to make pedagogically-informed uses of learning technologies?

The following sub-questions were also used to guide this research study:

- a) How can academic developers learn what academics need to make pedagogically-informed uses of technology?

- b) What kinds of academic development activities help academics to change the way they think about their teaching?

The next section presents an overview of the methodology used to guide this study.

1.5 The Research Design

This study is located within the social constructivist tradition. This research was designed as an exploratory case study incorporating a qualitative research approach.

The exploratory case study methodology provided an effective approach to investigate and develop a holistic understanding of the pedagogical practice of academics in relation to learning technologies within a real-life context from the perspective of the academics involved in this research. This research investigated how academics change the way they think about their teaching during a PD course. The academics are observed in their natural settings; observing their class and online teaching, and observing their interactions during the PD course. This research is a holistic inquiry involving the collection of detailed data and multiple sources of data including direct observations, interviews and document analysis.

A review of literature about the aims of HE, the models and frameworks for university teaching, TEL in HE and academic development for TEL contributed to the initial planning of this research study. The first phase of research involved the development of a methodological approach to learn about the pedagogical practices of academics. A class teaching observation schedule based on the elements of the CF was developed and tested with one academic. This schedule featured the lecturer's and students' behaviours related to teaching and learning at the discursive and experiential levels as described in the CF. The pilot class observations generated sufficient evidence to draw interesting conclusions about the current teaching practice of the academic. The second phase of research involved the recruitment of other academics in this study, observations of their class teaching practices, analysis of VLE usage and teaching-related documents, and semi-structured interviews with the participants. The activities of this research phase informed the design and delivery of a PD course about teaching and learning technologies. The first part of the PD intervention was designed, developed and delivered during the third phase of this research study. Desk-based research about the curriculum of TEL courses offered by

educational institutions was undertaken. This research, together with earlier literature findings about HE, models and frameworks for university teaching, TEL and academic development, and the description of the participants' teaching practices, informed the design and delivery of the first part of the PD intervention. The next phase of the research study involved another set of individual interviews with the participants, and the design and delivery of the remaining part of the PD course. The research study concluded with a summary of what had been learnt about contemporary approaches to academic development for TEL and my own practice.

1.6 Significance of the Study

The findings of this research study have implications for academic developers/researchers, academics, university leadership/policymakers and researchers.

Academic developers and researchers - This research study addresses the practical questions of how to undertake academic development. This thesis documents the process followed to design, develop and deliver an online PD intervention for TEL based around the needs of academics with little or no formal training in university teaching. Although generalisability claims are not made for this exploratory case study, it is hoped that academic developers at other universities may identify similarities to their contexts.

Academics - As indicated earlier there is an increasing expectation that academics use technologies to enhance the student learning experience. University teachers may find this study beneficial to discover how a group of academics in a traditional campus-based university have experienced an online PD course for TEL.

University leadership and policymakers - This research study highlights the challenges experienced by participating academics undertaking an online PD course on a voluntary basis. This study documents the academics' views about the institutional and departmental constraints to innovative pedagogical practices. This research also informs senior HE management and policymakers about the impact of PD initiatives on the pedagogical practices of academics.

1.7 Organisation of the Study

This thesis is presented in nine chapters. Following this introductory chapter, Chapter 2 provides a review and critical analysis of existing literature about the changing landscape of HE, the aims of HE, university teaching and learning frameworks, and trends and issues related to TEL. The purpose of this review was to develop a better understanding of the teaching and learning process in HE and how teaching is enacted. The second part of the chapter examines the literature on the development of academics as teachers and PD for TEL. The knowledge gap addressed by this research study is presented at the end of the chapter.

Chapter 3 is an account of the methodology used to guide this research study. An overview of the philosophical and theoretical positions used to guide research in this area is presented. This is followed by a discussion about qualitative strategies of inquiry and the use of the case study methodology for this research. A detailed description of the methods used to collect and analyse the data follows. The thematic analysis approach used to analyse the data related to the participants' engagement with the online PD course is also documented. The data analysis section ends with the presentation of five themes that were relevant to the research questions. The chapter ends with a discussion of the limitations and ethical considerations of this study.

Chapter 4 presents the design and testing of a methodological approach to learn about the pedagogical practices of academics. The experience and reflections from this research phase were used to guide the class teaching observations documented in Chapter 5. This research phase also provided initial insights into the research context.

Chapter 5 presents the activities of the second phase of this research which included the recruitment of other academics in this study, observations of their class teaching practices, analysis of VLE usage and teaching-related documents, and the semi-structured interviews with participants. The purpose of this research phase was to understand the teaching practices and learning needs of the participating academics to inform the design, development and delivery of an online PD course about teaching and learning technologies that was followed by the participants. The chapter ends with a summary of the main topics that were addressed through the PD intervention.

Chapter 6 documents the design, development and delivery of the first part of the PD course for TEL (Topic 1, 2, 3 and 4). The detailed description of the participants' teaching practice, the research literature about HE, the models and frameworks for university teaching, TEL and academic development, and the desk-based research about the curriculum of TEL courses offered by educational institutions informed the design, development and delivery of the first part of the PD intervention. The observations and reflections on the participants' experience of the first part of the PD course are also presented in this chapter.

Chapter 7 presents the individual interviews with the participants, and the design and delivery of the remaining part of the PD course. The main aims of this research phase were to understand better the participants' experience of the curriculum and format of the PD intervention and to identify their expectations for the remaining part of the PD course. The observations and reflections on the participants' engagement with this part of the course are also reported in this chapter.

Analysis of the participants' forum posts throughout the PD course and the mid-course interviews led to the identification of five themes that were relevant to the research questions. These themes and the implications for academic development practice are discussed in Chapter 8. This chapter also discusses how the Col, CA and CF theory can benefit academic development and the use of CF to develop a class observation schedule. Therefore, this chapter discusses the findings of the study and identifies how these findings support or advance the knowledge in the field of academic development for TEL. The main contributions of this research study are related to: (a) the process of academic development for learning technology use; and (b) the process of studying academic development.

The final chapter presents the primary conclusions arising from the findings identified in the empirical chapters. Chapter 9 presents the answers to the research questions. The limitations of the research methods used in this study and recommendations for further research are also presented. The implications of this research study for academic developers, academics and university policymakers are discussed in the concluding part of this thesis.

1.8 Summary

This chapter presented an orientation to this research study. My personal motivation to undertake this study was to develop a better understanding of academic development for TEL and to implement changes to my current practice of academic development for TEL. The exploratory case study methodology was used to guide the execution of this study.

Chapter 2: Literature Review

2.1 Introduction

This chapter opens with a review and critical analysis of existing literature about the changing landscape of HE, the aims of HE, teaching and learning frameworks for universities, and trends and issues related to TEL in particular. The purpose of this review is to develop a better understanding of the teaching and learning process in HE and how teaching is enacted. The second part of the chapter then builds on this by examining the literature on the development of academics as teachers, and in particular, the literature about PD for TEL. This review will be used to identify gaps in the existing literature, and through these, to refine the research questions that guide this study.

2.2 The Changing Landscape of Higher Education

In recent years, HEIs have experienced significant changes, which frame the need to rethink teaching and learning in universities.

An increasing number of students are now following tertiary education as a result of international and local government policies promoting a highly-skilled and flexible workforce that can function effectively in the knowledge-based society. These student populations are expected to increase further in the coming years. The Europe 2020 strategy is targeting a tertiary graduation rate of 40% among the population aged between 30 and 34 years (European Commission, 2010). Higher student enrolments are increasing pressures on the physical and human resources of universities (Laurillard, 2007) and leading to a greater diversity of students. Until recently, the majority of university students came from affluent families with a tradition of graduates. Nowadays, students attend from a diversity of cultural, social and economic backgrounds. The demands of the knowledge-based society are also driving more adults to enrol on university courses for career advancement purposes. The present student cohorts in universities are therefore less homogenous than before; students have different levels of knowledge, skills and preparation for HE. More students enrolling on university courses are academically underprepared by the traditional standards of past elite students (Trow, 2005). Universities therefore, need

to engage with an increasingly diverse student body (Norton, Sonnemann and Cherastidtham, 2013).

In addition to growing student enrolments, wider financial aspects are also impacting HE. Following the global economic crisis in 2007, the level of state funding for the tertiary education sector diminished in many countries (European Science Foundation, 2012). As funds per student decreased, student-to-staff ratios and teaching workloads increased, placing additional pressures on universities (Phillips, 2005). Fee-paying universities have raised the tuition fees considerably to make up for the funding shortfall. The higher tuition fees in turn have raised the students' and parents' expectations for enhanced educational experiences at university (Telford and Masson, 2005; Woodall, Hiller and Resnick, 2014). The increased fees are also putting pressure on young students to undertake part-time employment alongside their studies (Concannon, Flynn and Campbell, 2005). More students, as a result, are seeking flexible programmes of study at university. The demands for part-time on-campus and online courses are therefore expected to increase in the coming years.

The knowledge society is another factor driving changes in the HE landscape. The ongoing technological developments occurring in the past decades have triggered structural changes in the economies of developed countries leading to the growth of the knowledge society (Bates, 2019). As indicated earlier, governments have introduced national policies aimed at increasing the economic competitiveness of their countries. The knowledge-intensive society requires a highly-skilled and educated workforce that can respond effectively to economic, social and technical change (Norton, Sonnemann and Cherastidtham, 2013). People need to be trained to develop the ICT skills, knowledge management skills and technical analysis skills required in the workplace (Laurillard *et al*, 2009). Governments, employers and parents are increasingly expecting universities to prepare graduates with the disciplinary expertise and intellectual skills (e.g. critical thinking, problem solving, independent learning, collaborative working, etc.) required to succeed in the knowledge-based society. The next section discusses the fundamental purposes and valued outcomes of HE within this policy context.

2.3 The Aims of Higher Education

There is consensus among academics that HE should help students develop the knowledge and understanding of their chosen discipline. This goes beyond the

accumulation of more facts, principles and procedures of the subject. Students should learn more elaborate conceptions and develop a theoretical understanding of the discipline (Entwistle and Ramsden, 1983; Dahlgren, 2005). This 'academic' conception of HE helps students become competent in academic discourse. Students will develop their ability to recall declarative conceptual knowledge, but more importantly, will also develop their ability to use this in the construction of arguments, or in the solution of problems (Goodyear *et al*, 2001). The aim of HE is to help students develop the capacity to question existing ideas, assumptions and discourses that inform current understandings and experiences of disciplinary knowledge (Harvey and Knight, 1996; Cheng, 2011). Students should understand the contested nature of knowledge; that is, the multiple and differing perspectives that exist within their field (Perry, 1970). University education is about "changing the learner's perspective, the way the learner sees the world and how learners represent knowledge" (Prosser and Trigwell, 1998 cited in Biggs and Tang, 2007, p.21). The acquisition of knowledge in itself does not bring about such a change, but the way the student structures that knowledge and thinks with it does. University education is therefore about conceptual change not just the acquisition of factual knowledge. From this perspective, the theory taught in any course is not only meant to be understood but it is intended to give the student a different view of the world together with the power to change some aspects of it.

In recent years, government agencies and employers have been exerting pressure on universities to implement curricula that will better assist students with the development of what have been called 'generic competencies', '21st century skills' or 'transversal skills', which are intended to enable them to function effectively in different workplaces (Goodyear *et al*, 2001). Generic skills are actions that are believed to hold across many situations, even unknown ones (Barnett, 2004). These skills include: critical thinking and discernment; coping with uncertainty; ability to communicate with different people; working effectively with other people; taking initiatives; responding flexibly to changing circumstances; a capacity for reflection upon practice; and standards of conduct and personal ethical competence (Barrie, 2006; Kember, 2009). Employers prefer graduates with a transformative potential; those capable of transforming the organisation in addition to enhancing its productivity and competitiveness (Harvey and Knight, 1996). This is the 'vocationalist' or 'operational competencies' conception of HE. This conception, like the traditional 'academic conception' described earlier, requires graduates to develop specialised technical knowledge and an ability to understand the multiple and differing perspectives on

knowledge. This vocationalist conception of HE has attracted critique. Gourlay and Oliver (2016) for example, criticised the mainstream 'learner-centred' accounts of digital literacy arguing that the individual's ability to act in a digitally literate way depends on much more than an assumed set of stable, internalised qualities. Their research showed that the ongoing development of digital literacy skills is shaped by the social and material environments. Societies may not be providing the environment and infrastructure required for individuals to practice their digital literacy.

Although both have been influential, Barnett (1997) rejected both the 'academic' and the 'operational competencies' conceptions of HE. He claimed that there is no certain knowledge of the world, and therefore both knowledge and skills become redundant or marginal. Learning for an unknown future has to be understood in terms of human dispositions and qualities rather than knowledge or skills. He proposed therefore that the university curricula and pedagogical practices of academics should support students to develop these dispositions: a willingness to learn; a willingness to engage; a preparedness to listen; a preparedness to explore; to hold oneself out to new experiences; and a determination to keep going forward (Barnett, 2009). Similarly, the curricula and pedagogical practices should foster these qualities in students: courage; resilience; carefulness; integrity; self-discipline; restraint; respect for others; openness; generosity; and authenticity. Barnett (1997) claimed that individual reflexivity is necessary for dealing with an essentially unknown world. Students should be encouraged to develop self-reflexiveness; that is, the "capacity to go on interrogating one's taken-for-granted universe... in order to assimilate and to accommodate the new order" (Barnett, 1997, p.29). University education should support students in their acquisition of 'discursive competence' offering a deep understanding of the discursive realm and an insight into what it is like to manage with confidence the concepts, theories and ideas of a field of thought and to manage complex ideas in communication with others. Barnett (1997) recommended that HE should encourage informed but critical action: understanding the power and limitations of the field as a resource for action. The purpose of a university education therefore shifts from helping students to engage better with knowledge to engaging critically with knowledge. This is the 'critical being and reflexivity' conception of HE. Goodyear *et al*, (2001) criticised Barnett's conception of HE arguing that knowledge cannot be de-emphasised if we are concerned about the effectiveness of action in the world. They provided examples to strengthen their argument about the importance of in-depth knowledge. Surgeons use knowledge to carry out routine operations, academic apprentices use knowledge to debate ideas

within their disciplines, and project team members use knowledge whilst collaborating on projects. Goodyear *et al*, (2001) think of HE as a site for the development and use of 'working knowledge'. They used the term 'working knowledge' since this explains better the relevancy of knowledge to one's work in academia and to what graduates take to the real world. They also think of knowledge and knowing as an active and dynamic process. Recalling and using knowledge is in itself a reconstructive process. Their idea of a working knowledge also implies that graduates would have just enough knowledge to improvise and a willingness to take reasonable risks by acting at the edges of one's knowledge. They also claimed that the rapid changes in modern knowledge-based economies, and the need for citizens to be open to diverse views on what counts as worthwhile knowledge, require graduates to be flexible in their use of knowledge. Graduates should therefore be able to interact with people and participate in processes that involve collaborative knowledge construction.

There are common running themes in the 'academic', 'operational competency' and the 'critical being and reflexivity' conceptions of HE. The three conceptions all value the importance of critical thinking and the ability to understand different perspectives about knowledge. They differ in their view of the purpose of HE. A compromise position may be that effective HE should prepare graduates with specialist knowledge balanced by transferable skills and a commitment to lifelong learning (Goodyear *et al*, 2001). University students should develop greater self-direction in their studies, and the capacity and aspiration to continue learning throughout life (Knowles, 1990; Dearing, 1997). The impermanence of knowledge requires graduates who are able to take responsibility for working out what they need to know and where to find that knowledge. Personal responsibility for one's own knowledge and the process of learning are important requisites for the knowledge-based society (Barnett, 1997). Students should learn how to take control of their learning, how to make smooth transitions between abstract knowledge and concrete applications, and how to integrate domain specific knowledge with the skills needed to articulate it and to apply it (Morrison and Collins, 1995; Janssen 1996).

The purposes of HE discussed in this section are best achieved if the students are actively engaged in the learning process (Laurillard, 1996; Coates, 2006). Dewey, Piaget, Vygotsky, Bruner, Papert, Marton and Lave all argue that students need to be actively engaged in the formation of their ideas rather than being passive recipients of knowledge (Laurillard, 2002). Claims have been made that the traditional lecture, which is a common teaching approach in many universities, does

not engage the students (Twigg, 1999; Bligh 2002; Knapper, 2016). The traditional stereotype of the one-way monologue lecture is often criticised because the students are described as passively absorbing the knowledge transmitted by the professor. This view however, has been questioned. There were also claims that during lectures, the students engage in an internal dialogue trying to understand their professors' expositions (Gourlay, 2015). During lectures, the students also actively engage in choosing what concepts or ideas to write on their notepads. Some students browse the web to compare online information with their lecturers' explanations. Lectures therefore, can inspire students to research more on the topics and to engage in the construction of their meanings (Bach, Haynes and Lewis Smith, 2007). Silent listening and thinking during a lecture do not necessarily imply passivity and lack of student intellectual engagement. In order to develop a deeper understanding of these debates, the next section discusses university teaching and models of teaching at university.

2.4 Models and Frameworks for University Teaching

Many models and theories have been proposed to explain teaching conceptions (Samuelowicz and Bain, 1992; Kember and Gow, 1994; Barr and Tagg, 1995; Marton and Säljö, 1997; Martin *et al*, 2000). What these models share in common is the view that teaching conceptions range along a continuum from the 'transmission of knowledge' to the 'facilitation of learning' (Kember and Kwan, 2000). Similarly, Barr and Tagg (1995) described two paradigms of undergraduate education: the 'instruction paradigm' and the 'learning paradigm'.

In the instruction paradigm, the primary mission of a university is to provide instruction to students, and the focus is on the academic, who usually employs the lecture as the primary method of delivering instruction (Barr and Tagg, 1995). On this account, the academic, as the subject-matter expert, transmits knowledge to passive students that assimilate this for future use. All power and authority are assumed to rest with the academics who, by virtue of their expertise, are best qualified to teach the subject. They determine the university curricula and the sequencing of course content. The purpose of education within the 'instruction paradigm' is to receive knowledge that perpetuates the key ideas, beliefs and norms valued by academics and the disciplines they represent. This approach to learning is also referred to as 'teacher-centred learning' or 'content-focused learning'. The traditional lecture and the occasional tutorial are the main teaching approaches within the instruction paradigm.

It has been proposed that most undergraduate teaching has been, and continues to be, characterised by this instructional approach to learning (Gallant, 2000; Fink, 2003).

In recent years, educators have expressed concerns about this teaching model, particularly in the context of the knowledge-based economy (Bereiter, 2002; Hargreaves, 2003), which requires graduates who are able to construct new knowledge and ideas, and to take responsibility for their own continual learning during their lifetime (Sharples, 2000; Sawyer, 2006). This has led to advocacy of the 'learning paradigm' or 'constructivist approach' to learning (Bruner, 1990). Within this paradigm, the university's

...purpose is to create environments and experiences that bring students to discover and construct knowledge for themselves, to make students members of communities of learners that make discoveries and solve problems. (Barr and Tang, 1995, p.15)

Learning within this paradigm is grounded in humanist and social constructivist philosophies. The students are the main agents in the learning process. They are active discoverers and constructors of their own knowledge within frameworks that they create. When students engage in learning concepts, rather than merely memorising facts and procedures, they are more likely to generalise their learning and apply it to different contexts (Entwistle and Ramsden, 1983; Richardson, 2000; Sawyer, 2006). The purpose of HE from this perspective is to teach students to learn; that is, to gain higher-order and critical thinking skills, as well as to grow as self-directed and lifelong learners. This approach to learning is often referred to as 'student-centred learning'. The teaching approaches commonly advocated within the 'learning paradigm' include interactive lectures and group work activities such as discussions, role-plays, and hands-on projects.

Barr and Tagg (1995) claimed that HE becomes more relevant to the present societal needs, if university teaching practices shift from the instructional paradigm to the learning paradigm. Academics practicing within the learning paradigm will be in a better position to help students achieve the aims of HE (Chapter 2.3). However, this does not mean that the aims of HE can only be fulfilled if teachers adopt student-centred pedagogical practices. Instructional teaching is still required; for example, to teach the foundational knowledge of a discipline, or to demonstrate how to articulate arguments in a discipline. There is still place for instructional teaching; however, this

should not be the sole and primary approach of teaching and learning at university. Given this general framing of university teaching in terms of the instruction and learning paradigms, I shall now focus on the approaches to teaching.

It has been proposed that academics' approaches to teaching are determined by their conceptions of teaching. Kember's (1997) review of literature about teaching conceptions showed that conceptions of teaching are typically grouped in two categories: (a) teacher-centred/content-oriented and, (b) student-centred/learning-oriented. The teacher-centred/content-oriented category can be further divided into: (a) imparting information and, (b) transmitting structured knowledge. The student-centred/learning-oriented category can be further divided into: (a) facilitating understanding and, (b) conceptual change/intellectual development.

Academic developers may assume that there is a causal relationship between teaching conceptions, teaching practice and student learning. The teaching conceptions determine the class teaching behaviour which in turn affect the students' approach to their studies (Devlin, 2006). Gow and Kember (1993) have reported that they have empirical evidence suggesting that adopting a predominantly teacher-centred/content-oriented category discourages students from adopting a deep approach to learning. As a consequence, it is widely believed that the pedagogical practices of academics improve if their conception of teaching shifts from the teacher-centred/content-oriented conception to the student-centred/learning-oriented conception. However, it should be noted that this inference must be treated with caution; Kane *et al*, (2002), for example, have criticised this claim on the basis that Gow and Kember's study is based on an analysis of the teachers' professed views about teaching, not on an examination of their actual teaching practices.

In the mid-90s, building on this tradition of work, Prosser and Trigwell developed an inventory to measure 'the ways teachers approach their teaching' (Prosser and Trigwell, 1999, p.176) and to explore 'the way that academics go about teaching in a specific context or subject' (p.178). The Approaches to Teaching Inventory (ATI) originated from interviews with 24 academics teaching first-year chemistry and physics courses in Australian universities. The phenomenographic analysis of interviews focussed on the relations between the conceptions of teaching and the approaches to teaching. Trigwell and Prosser (2004) identified six conceptions of teaching and five different approaches to teaching (Table 2.1).

Table 2.1 – Conceptions of Teaching & Approaches to Teaching

Conceptions of Teaching	Approaches to Teaching
1. Transmitting concepts of the syllabus	1. A teacher-focused strategy with the intention of transmitting information to students.
2. Transmitting the teachers' knowledge	2. A teacher-focused strategy with the intention that students acquire the concepts of the discipline.
3. Helping students to acquire concepts of the syllabus	3. A teacher/student interaction strategy with the intention that students acquire the concepts of the discipline.
4. Helping students to acquire teachers' knowledge	4. A student-focused strategy aimed at students developing their conceptions.
5. Teaching students to develop conceptions	5. A student-focused strategy aimed at students changing their conceptions.
6. Helping students to change conceptions	

The inventory that was derived from this analysis is intended to measure the variation across two distinct approaches to teaching: (a) the information transmission / teacher-focused approach (ITTF) and (b) the conceptual change / student-focused approach (CCSF). It consists of 8 statements describing the ITTF approach and 8 statements describing the CCSF approach. Each statement describes either a teaching action/strategy or a teaching belief/intention. The responses for each statement are on a 5-point scale ranging from 'This item was only rarely true of me' to 'Almost always true of me'. The inventory is completed by academics for a particular study-unit that they teach, in order to profile their approach to teaching in that context. Trigwell and Prosser (2004) claim that there is a relationship between the academics' approaches to teaching and their students' approaches to learning.

Although the ATI is based on interviews of academics teaching first-year science subjects, the instrument that was derived from the study has been used widely across a range of disciplines and different levels of university teaching. A range of research studies have used the ATI to define the variations in approaches to teaching. These studies include: teaching influences on learning (Trigwell, Prosser and Waterhouse, 1999), teachers' skill repertoires (Coffey and Gibbs, 2002), teacher professionalisation (Lueddeke, 2003), teacher training impact (Gibbs and Coffey, 2004) and conceptual change in teachers' approaches (Arvidson and Roxa, 2004). As such, the ATI has become an obvious point of reference for research that concerns teachers' conceptions.

However, although its use is widespread, there are a number of issues with using the ATI – and particularly with its use to support claims about the development of teachers’ practices over time. For example, concerns have been raised about Trigwell and Prosser’s (1996) claim that the teaching conceptions are consistent with the teaching approaches. Kane *et al*, (2002) have raised doubts about this because evidence is lacking on the methodology used by Trigwell and Prosser to arrive at this conclusion. Criticism has been raised about the authors not being explicit about their epistemological and theoretical assumptions, and how these have influenced the development of ATI (Kane *et al*, 2002). Furthermore, Trigwell *et al*, (1994) themselves claim that their intention was ‘to look at the teacher’s experience of teaching, not at the observed behaviour of teachers’ (p.76). Meyer and Eley (2006) have also raised concerns about the validity, reliability and applicability of the ATI instrument because its development procedures are not fully and visibly disclosed. There is lack of visibility in terms of the procedures used to establish the ATI’s conceptual domain, how the initial set of potential statements were generated and subsequently how these were brought down to the final set of 16 statements (Meyer and Eley, 2006). Kember and Kwan (2000) have similarly expressed scepticism because Trigwell and Prosser did not define ‘the construct and the labels used to identify the conceptions of teaching that are very close to the intention component of the approaches’ to teaching (p. 472). Lucas’ (2002) research further showed that the conceptions of teaching reported by accounting teachers did not fit within single conception categories implied by the ATI, calling into question the binary classification implied by most uses of the ATI in the research literature. She claimed that the development of teaching conceptions is a complex process because teaching is a multifaceted activity. Lucas’ teachers, for example, thought of teaching as the shaping of students into competent individuals, as a shared journey through the discipline, as a process of building knowledge structures in students. There is a growing body of literature arguing that the ways of approaching teaching are more complex than implied by the ATI (Kane *et al*, 2002). Meyer and Eley (2006) concluded that the ‘ATI manifestly does not reflect a functionally useful range of approaches to teaching, and its application to activities connected with the professionalization (and evaluation) of university teaching is rejected’ (p.647). They claim that the use of the ATI as a basis to ‘change actual teaching and perceptions of teaching’ (Trigwell and Prosser, 2004, p.411) ‘sets a dangerous precedent and is unsupportable’ (p.647).

Given the considerable concerns raised about the validity of the ATI and its rigid categories of teaching conceptions, in this study, I decided to use a more open

and exploratory approach to study the conceptions of teaching of the academics participating in my study. Starting from the simple starting point that there are different approaches to teaching, and taking the teacher-focused/student-focused as an example of these differences, I wanted to explore in a more nuanced way the ways that academics approached their teaching in practice (using observational data) and then talk about it. In addition, drawing on the idea of 'signature pedagogies' (Shulman, 2005), I wanted to explore whether these were consistent or varied across different disciplines.

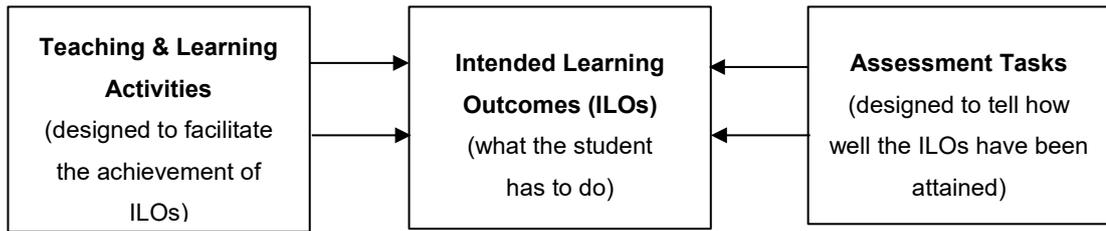
After discussing the approaches to teaching, I shall focus on three widely cited frameworks that provide more detailed guidance on university teaching and learning: CA; Col; and the CF. These frameworks have provided a set of principles that guided the design, development and implementation of an online PD course described in Chapter 6 and 7.

2.4.1 Constructive Alignment

The CA theory, developed by John Biggs in 1994, is used as a framework to improve the quality of teaching and learning at university. Biggs and Tang (2007) claimed that the CA "can be implemented in virtually any course at any level of university teaching" (p.59). CA has two aspects: constructivism and alignment. The constructive aspect refers to the idea that students construct meaning through relevant learning activities. Meaning is not something imparted or transmitted from the teacher to the learner, but it is something that learners create for themselves. The alignment aspect refers to what the academic does (Figure 2.1) in terms of setting up learning environments that support learning activities appropriate to achieve the desired learning outcomes. The academic implements teaching methods and sets assessment tasks that are aligned with the learning activities assumed in the intended outcomes.

Constructive alignment is a marriage between a constructivist understanding of the nature of learning and an aligned design for teaching that is designed to lock students into deep learning. (Biggs and Tang, 2007, p.54)

Figure 2.1: Aligning the intended learning outcomes, teaching and learning activities and the assessment tasks (adapted from Biggs and Tang, 2007)



Biggs and Tang (2007) recommended that academics follow the underlying steps to set up an aligned learning environment:

- a) Define the intended learning outcomes (ILOs);
- b) Choose teaching and learning activities likely to lead to the ILOs;
- c) Assess the students' actual learning outcomes to see how well they match what was intended; and
- d) Arrive at a final grade.

There are two types of knowledge, in this account: 'declarative knowledge' and 'functional knowledge' (Biggs and Tang, 2007). 'Declarative knowledge' is the topic content; it is telling students about what is already known and what has been discovered. The students need to understand this knowledge in order to make it function. Understanding enables students to see the world differently and behave differently towards that part of the world. Through understanding, the students will turn declarative knowledge to 'functional knowledge'. Therefore, in setting up an aligned system, the academic should specify the desired outcomes of teaching in terms of the topic content and the level of understanding that the students are expected to achieve. The ILOs should clearly state what levels of understanding are required from the students. Biggs and Tang (2007) propose the use of low-level verbs, such as 'describe', 'identify', 'explain' and 'memorise' for ILOs that lead to 'declarative knowledge'. High-level verbs, such as 'reflect', 'hypothesise', 'solve unseen complex problems' and 'generate new alternatives', are used in ILOs leading to 'functional knowledge'.

After specifying the ILOs, the academic designs teaching and learning activities that will engage students in ways that will help them achieve the ILOs. Teaching and learning activities, such as tutorials, peer teaching, student presentations, individual and group projects, case-based learning, problem-based

learning, portfolios and reflective journals, are proposed to engage students to develop both declarative and functional knowledge. As academics develop the teaching and learning activities, they also need to think about the assessment tasks that will inform them about how well their students have attained the ILOs. In the CA framework, the assessment tasks are aligned with the ILOs; that is, the assessment tasks are designed to promote student learning as defined in the ILOs. The students will learn what they think they will be assessed on, rather than what is covered in the study-unit textbook or what is covered during lectures. Authentic assessment tasks are appropriate to confirm the students' learning of functional knowledge (Biggs and Tang, 2007) whilst decontextualized assessment tasks are often used to confirm the students' learning of declarative knowledge. As the students progress through their course of studies at university they should be engaged in assessment tasks that focus more on 'functional knowledge' rather than 'declarative knowledge'.

Finally, the academics need to develop a grading scheme that tells them how well the students have achieved the ILOs. Academics devise rubrics and criteria for each assessment task. The grade awarded to a student should be "defined by a particular quality of learning and understanding, not by the accumulation of marks or percentages" (Biggs and Tang, 2007, p.60).

CA, therefore, advances the principle of aligning the intended learning outcomes, the teaching and learning processes, and assessments in a course. CA was used to guide the design and development of the online PD course in this research study. However, given that the PD intervention did not involve any formal assessment, the participants' learning was driven by the course learning resources and activities.

2.4.2 Community of Inquiry

In recent years, innovative approaches to university teaching and learning have been informed by the constructivist and social constructivist theories of learning. The constructivist view proposes that students construct meaning or reconstruct experiences from a personal perspective. However, individual knowledge construction is enhanced when students discuss and debate a diversity of perspectives. The social constructivist or collaborative constructivist view implies that students refine and confirm their understanding collaboratively with a community of learners. The students build their personal knowledge in a social environment with a

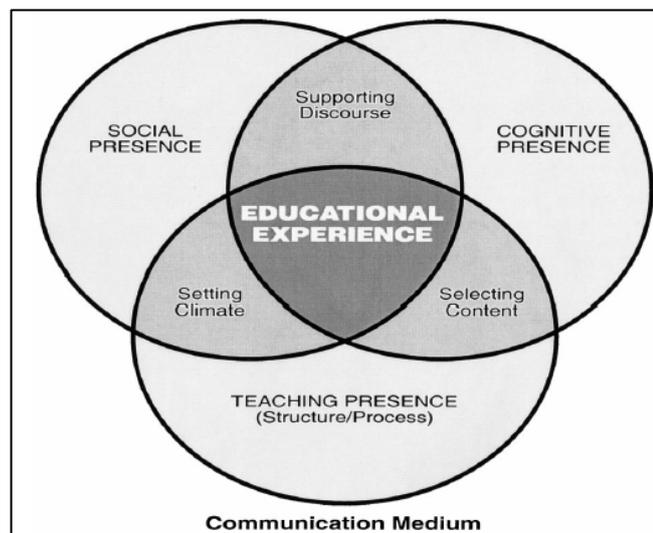
diversity of perspectives that encourage critical and creative inquiry. Garrison and Vaughan (2008) claimed that the ideal educational experience is a collaborative constructivist process that has inquiry at its core. A university education experience is best conceived as a community of inquiry.

A community of inquiry provides the environment in which students take responsibility and control their learning through negotiating meaning, diagnosing misconceptions, and challenging accepted beliefs - essential ingredients for deep and meaningful learning outcomes. (Garrison and Anderson, 2003, p.27)

The creation of knowledge is, therefore, a personally reflective and collaborative process made possible by a community of inquiry. This is the principle behind the Col framework developed by Randy Garrison, Terry Anderson and Walter Archer in 2000. Research evidence suggests that communities of inquiry can be supported in an e-learning context. The Col framework is a widely accepted theoretical model of online learning, helping academics to think about the elements that should be considered when designing and teaching blended and online courses.

The Col framework identifies three interdependent elements that are prerequisites for higher-order learning: cognitive presence; social presence; and teaching presence (Figure 2.2).

Figure 2.2: Community of Inquiry (Garrison and Anderson 2003, p.28)



Cognitive presence is “the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of

inquiry” (Garrison, Anderson and Archer, 2001, p.11). Cognitive presence is essential for the inquiry process. The integration of the reflective and discursive processes forms the inquiry process. Garrison and Vaughan (2008) defined cognitive presence through the four events of the Practical Inquiry Model (Dewey, 1938):

- a) *Initiation or triggering event* whereby an issue or problem is identified and defined. To enhance the students’ engagement, the dilemma or problem should preferably be related to the students’ experience or previous studies.
- b) *Exploration of the problem* whereby students first understand the nature of the problem and then search for relevant information and possible explanations. This may include group activities or individual activities such as literature searches.
- c) *Integration event* where students begin to reconcile and make sense of the information. The students hypothesise and debate solutions to the problem with their peers and teacher.
- d) *Resolution* where students apply or test directly the preferred solution to the problem. If direct testing is difficult, the students engage in vicarious or mental model of solutions.

Social presence is “the ability of participants to identify with a group, communicate purposefully in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities” (Garrison, 2011, p.23). Social presence occurs when students project their personal characteristics in the learning environment, thereby presenting themselves as real people. Rourke *et al*, (1999) identified twelve indicators of social presence: (a) affective expression; (b) self-disclosure; (c) use of humour; (d) continuing a thread; (e) quoting from others’ messages; (f) referring explicitly to others’ messages; (g) asking questions; (h) complementing; (i) expressing appreciation; (j) expressing agreement; (k) vocatives; (l) addressing the group using inclusive pronouns; and (m) salutations.

Teaching presence is defined as “the design, facilitation and direction of cognitive and social processes for the purpose of realising personally meaningful and educationally worthwhile learning outcomes” (Anderson *et al*, 2001, p.5). The

academic plays a key role in bringing together the cognitive and social elements of the Col framework. The academic's roles fall into three categories:

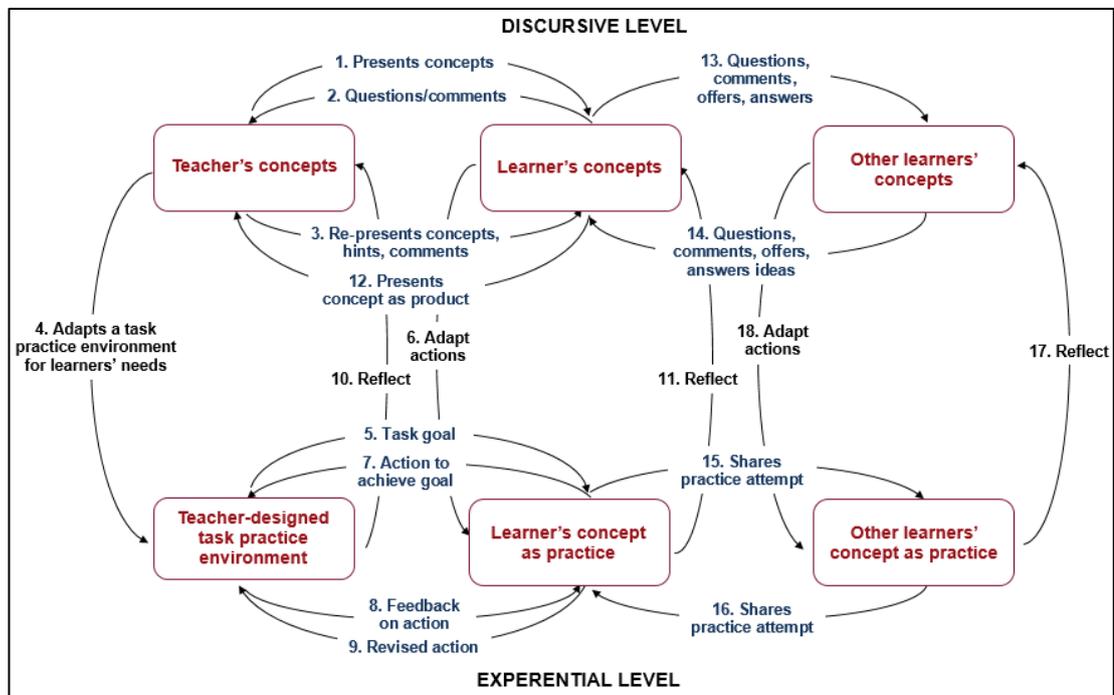
- a) *Design and organisation* - The design refers to the decisions made by the academic during the developmental stages of the course, whilst organisation refers to the adjustment decisions made during its delivery.
- b) *Facilitating discourse* - As indicated earlier, the students construct knowledge collaboratively and, within the Col framework, this is usually done through online discussions. The academic plays an important role in managing and monitoring the discourse between students. The nature and timing of the academic's responses to student postings should be carefully considered. The academic should avoid intervening too much or too little, since this may affect negatively the online discussions and the process of students building understanding. The academic should encourage appropriate and relevant student posting by bringing attention to well-reasoned responses and by making linkages to other messages. The students must feel the discussion is moving in a purposeful direction and timely manner. The role of the academic therefore shifts from a 'sage on the stage' to a 'guide on the side'.
- c) *Direct instruction* – The 'guide on the side' role does not mean that teaching will be exclusively student-centred. All formal learning experiences require the presence of an academic with disciplinary and pedagogical expertise. The academic can identify the ideas and concepts worthy of study, provide the conceptual order, organise the learning activities, guide the discourse, offer additional sources of information, diagnose misconceptions, and interject when required.

The Col framework is a widely accepted theoretical model of online learning (Bogle *et al*, 2014). The principles of the Col framework described in this section were used to guide the delivery of the online PD course in this research study. The course was designed to enable the participants to experience learning in a community of inquiry.

2.4.3 Conversational Framework

Another pedagogical framework used to describe the teaching and learning process at university is the CF. Diana Laurillard developed this framework in 1993 and revised it further in 2002, 2008 and 2012. The CF is a conceptual framework that describes the process of academic learning (Figure 2.3) in undergraduate programmes of study. It represents the minimum requirements that any learning environment should provide to support the complete process of undergraduate learning. The CF was developed from research about student learning and the ideas of the Conversation Theory (Pask, 1976).

Figure 2.3: The Conversational Framework (Laurillard, 2009, p.11)



Laurillard (2012) claims that effective university teaching involves a continuous dialogue between the teacher and the students. The CF advocates a teaching and learning process that involves an iterative conversation between the teacher, the learner and their peer learners. Through this iterative process, the student links the theoretical concepts with practical skills with the help of the teacher and peers. The student's concepts inform his/her practices or actions and vice-versa. The framework involves cycles of generating and amending concepts and practices. The interactive process can happen through any medium including face-to-face (F2F) lectures and virtual spaces. However, the dialogue between the academic and the student may not always be externally manifested. The student may engage in an

internal dialogue, playing the role of the teacher and the learner (Laurillard, 2002). As indicated earlier, the students may be active in the construction of their own meanings whilst following a lecture. They may engage in an internal dialogue whilst reading books and journal articles recommended by their teachers or working through problems that their teachers design.

In the CF interactions between the teacher, the learner and peer learners occur on two levels: (a) the discursive level, and (b) the experiential level.

The discursive level is the level of the theory (Figure 2.3: activities 1, 2, 3, 12, 13 and 14). This level represents the teacher's presentation of theories, concepts and ideas. The teacher explains concepts through language or other forms of presentation (e.g. handouts, electronic slides, diagrams and web resources). The student may ask questions, comment, or offer critiques of these. The teacher will in turn clarify, elaborate and articulate alternatives. The student will also discuss the theories, concepts and ideas with peers. This dialogue between the teacher and the students will continue until there is a shared understanding of the theories, concepts and ideas. The discursive level describes learning through listening, reading, writing, discussing, communicating, debating, articulating, presenting etc.

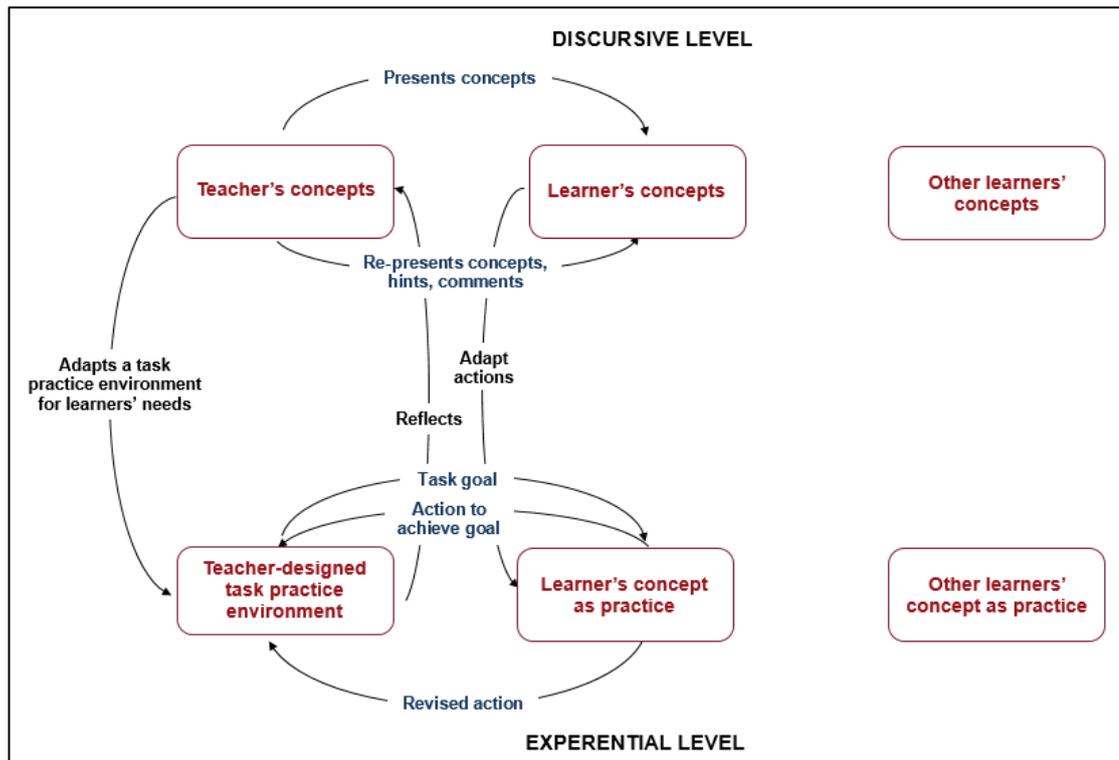
The experiential level is the level of practice (Figure 2.3: activities 5, 7, 8, 9, 15 and 16). At this level, the students apply the theory or concepts to some task or practice. The teacher sets the objectives of a task and constructs a practice environment where the students apply the theory to practice. The practice environment enables the students to apply the theory to practice with feedback from the teacher. Practice environments may include an experimental lab, field trip, practice class or problem class. In traditional teaching, the end of term essay will be the practice environment for the students. The academic reads through the essay and provides feedback to the students. The teacher may also set up modelling environments where the students apply the theory to practice. Modelling environments (e.g. simulations) respond to the students' actions with meaningful informational feedback. These environments enable the students to learn without being taught, therefore reducing the teacher's workload. The students may also exchange their practice outputs when working together in practice or modelling environments. The experiential level thus describes learning by doing, practising, experimenting, rehearsing, analysing, testing, making, building etc.

According to Laurillard (2009), the teacher and the students need to interact repeatedly on both the discursive and the experiential levels. She adds that learning takes place when these two levels of conversation are connected by the processes of adaptation and reflection. Based on the students' descriptions of concepts and ideas at the discursive level, the teacher constructs a learning environment where the students apply the theory to practice. The teacher adapts the right task environment that enables students to achieve the learning objectives (Figure 2.3: activity 4). The teacher then reflects on the students' actions and performance at the experiential level (Figure 2.3: activity 10). These reflections inform the teacher about the immediate actions that s/he needs to take at the discursive level to improve the student learning. These reflections also help the teacher improve her/his future teaching. Similarly, the students adapt their actions at the experiential level on the basis of their developing ideas, conceptual understanding and feedback received from their teacher and peers (Figure 2.3: activity 6 and 18). They will reflect on the task goal, actions and feedback received from their teacher and peers (Figure 2.3: activity 11 and 17). The students will continue adapting their actions until they achieve the task goal.

Laurillard (2008) claimed that the main learning theories, including instructionism, constructionism, socio-cultural learning and collaborative learning, can be represented on the CF, giving a detailed description of the process of learning. The justification for this claim will be outlined below, with respect to the three perspectives on learning reviewed earlier.

Instructionism, with its emphasis on the student building concepts or competencies in a step-by-step approach with a lot of input from the teacher, is included in the left part of the CF (Figure 2.4). The teacher presents the concept, creates a practice environment and sets a task goal. The student works within the practice environment to achieve this task goal. The teacher provides the student with extrinsic feedback in terms of right and wrong comments, hints, new material or a different task. The emphasis is on the teacher's presentation of learning material and her/his responses to the student's performance on the task. Learning is largely teacher-focussed and generally involves the transmission of knowledge from the teacher to the student. There may be no interactions between the student and her/his peers.

Figure 2.4: Instructionism mapped on the CF (Laurillard, 2009, p.9)



Constructionism, with its emphasis on learners achieving understanding through practice and active discovery, can also be mapped in the CF (Figure 2.5). The teacher, here, is no longer the main source of instruction but s/he plays a primary role in constructing a learning environment adapted to the student's needs. The practice environment enables the student to discover, experiment and play with ideas in an iterative manner. The practice environment provides students with intrinsic feedback that encourages them to reflect on their ideas, adapt their actions and develop their conceptual understanding. Intrinsic feedback is a natural consequence of the student action. For example, when students adjust the variables of a simulation they will see the results of their actions without the intervention of their teacher. This intrinsic feedback helps them modify their next actions on the simulation without teacher intervention. The emphasis within constructionism is the active participation of the learner.

Socio-cultural learning with its emphasis on the student's engagement in debates with peers and the teacher to develop a shared understanding of tasks and knowledge, is also represented in the CF (Figure 2.6). The emphasis here, is on the social construction of knowledge where the student's ideas are influenced by conversations, debates and exchange of viewpoints with the peers and the teacher. The student develops a good understanding of a concept when s/he is required to

articulate the concept and answer questions posed by peers about the concept. Learning is therefore more student-focussed. The teacher's role in socio-cultural learning is limited to defining a concept or providing some stimulus in the form of a question or issue to be discussed amongst students.

Figure 2.5: Constructionism mapped on the CF (Laurillard, 2009, p.9)

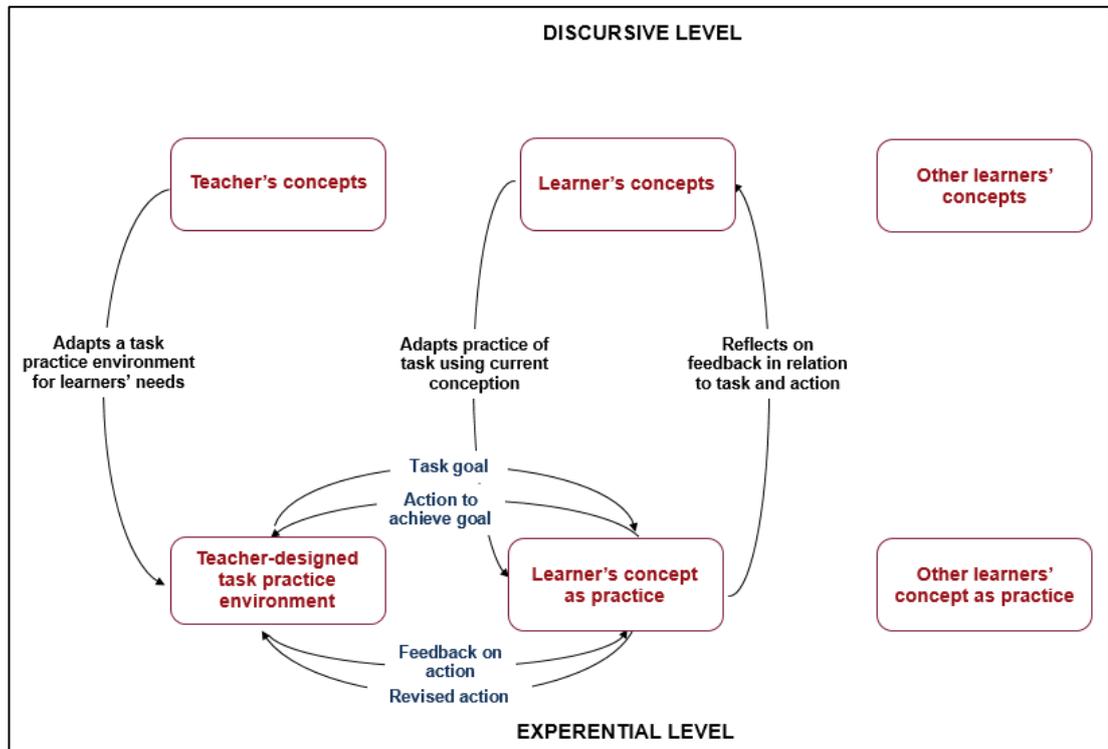
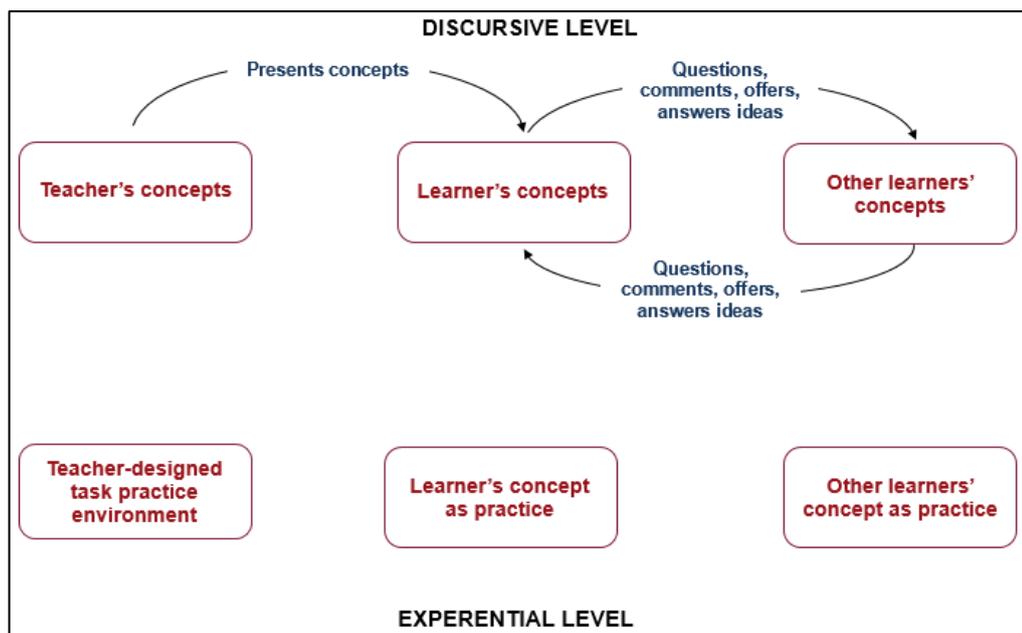
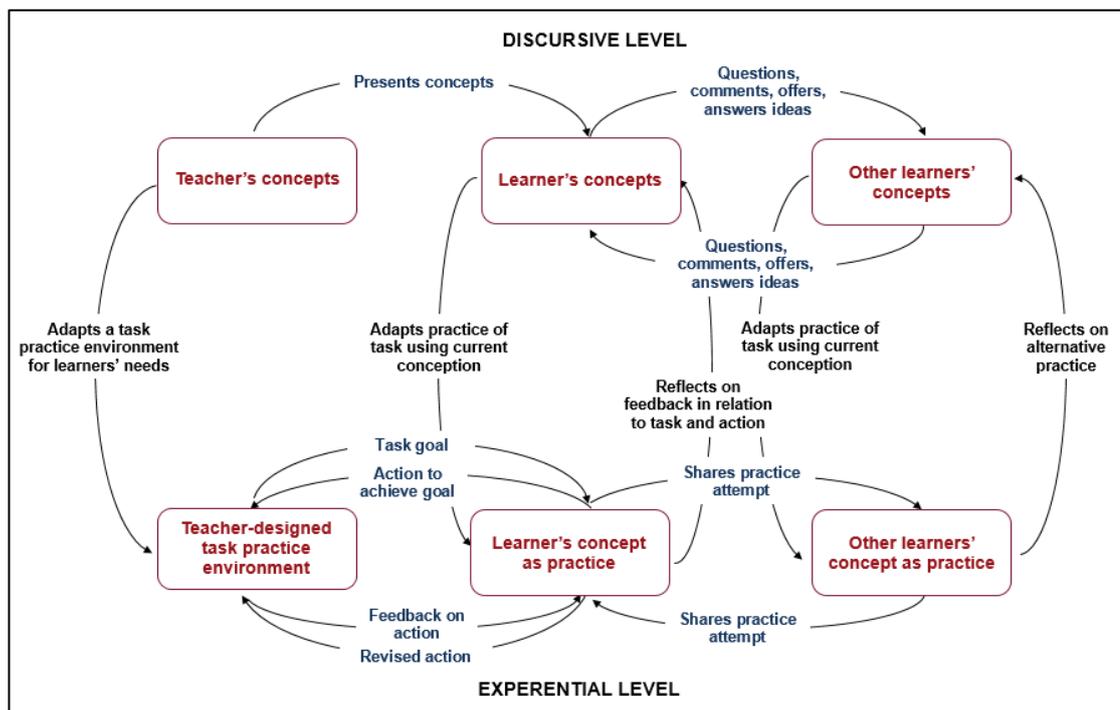


Figure 2.6: Socio-cultural learning mapped on the CF (Laurillard, 2009, p.10)



Another theory that has been mapped onto the CF is collaborative learning (Figure 2.7). “Collaborative learning combines the pedagogies of constructionism and social learning to provide richer interactions between the learners and their concepts and practice” (Laurillard, 2009, p.11). Learning through collaboration incorporates learning through discussion, practice, and production. The students work within the practice environment to achieve the task goals and discuss their actions with peers. Through such discussions, students learn about their peer’s actions. They also compare their own actions with those of their peers. Students will also share their reflections and interpretations of what happened within their practice environment. Therefore, the CF advocates the kind of collaborative learning where students discuss and reflect on their individual attempts at the same task goal (Laurillard, 2009). This is distinct from cooperative learning where students work through different sub-tasks which collectively lead to achieving the task goal set by the teacher.

Figure 2.7: Collaborative learning mapped on the CF (Laurillard, 2009, p.11)



Laurillard (2002) expressed reservations about the learner-to-learner interaction in the formation of academic knowledge. At undergraduate level, the students are not in full control of their learning and the teachers “have the major responsibility for what and how our students learn” (Laurillard, 2002, p.2). She described the CF as a representation of formal learning with the teacher. The CF is

used to describe how the teacher can design an environment to facilitate learning in any academic discipline.

[The CF] is intended to be applicable to any academic learning situation: to the full range of subject areas and types of topic. It is not normally applicable to learning through experience, nor to 'everyday' learning. (Laurillard, 2002, p.87).

Academic knowledge or second-order knowledge is the description of someone else's experience of the world (Laurillard, 2002). This is different from first-order knowledge where we learn directly through everyday life experiences. Academic knowledge involves learning through exposition, argument and interpretation of activities organised by the teacher. At undergraduate level, the students depend on the teacher's insight and experience of the world or a phenomenon. Questions have been raised about the applicability of the CF to all academic disciplines. In positivistic subjects, such as the natural sciences and mathematics, the meanings are fixed. In humanistic subjects the meanings are subject to interpretation and dispute (Pachler and Daly, 2011). Experiences of mathematics, however, may be about personal experiences of working with patterns, following processes or even developing new approaches. Nonetheless, a review of literature about the CF did not show any studies confirming or refuting Laurillard's claim that the CF is applicable to all subjects and topics.

As indicated earlier, the CF arguably consolidates the main theories of learning. This framework can be used to evaluate both conventional class-based learning and technology-based learning. Laurillard (2002) examined the teaching methods and technologies available in HE to determine their capabilities to deliver the iterative processes described in the CF. Digital technologies have the capability to deliver some of the iterative processes but none of these can cover all the processes described in the CF. Technology for example, may facilitate the experiential aspects of learning where the students engage with the practice of their subject. Traditional teaching methods, such as the lecture, may be better at the presentational aspects than the active aspects of the learning process. A judicious combination of teaching methods and technology is required to cover the range of iterative processes described in the CF. A mix of teaching and learning approaches that includes the activities of discussion, practice, adaption and reflection is the most efficient way to support student learning (Laurillard, 1996). The CF is therefore intended to help academics design conventional and digital teaching-learning activities that motivate

and enable learning. It has been particularly influential on thinking about the choice and use of digital technologies for learning. Since the CF specifies processes through which learning theories can be enacted, it offers an empirically testable framework for learning.

Given that several influential learning theories can be represented on the CF, this framework was used to generate detailed descriptions of the teaching practices of academics participating in this research study. The principles of the CF were also used to guide the design, development and delivery of the online PD course in this study.

After reviewing the CA, Col and CF, the next section will focus on technology enhanced learning.

2.5 Technology Enhanced Learning

Claims have been made that technology is one of the drivers of change in the HE sector (Bach, Haynes and Lewis Smith, 2007; Bates, 2019). The ubiquitous use of technologies in all aspects of daily life is also impacting the administrative, teaching/learning and research processes in HEIs. To understand the present context of technology in HE, a brief historical outline of the main developments in the use of technology in HE will be presented next.

2.5.1 Historical Technology Developments in HE

The learning technologies that were prevalent between the late 1950s and the late 1970s included radios, tape recorders, film projectors, and televisions Goodchild and Speed (2019). These broadcast technologies added new modes of delivering learning material to university students. In 1969, for example, the UK Open University partnered with BBC to offer university courses that combined printed learning materials and television and radio programmes (Bates, 2019). From the late 70s to the late 90s there was the proliferation of the personal computer in industry, education and homes (Goodchild and Speed, 2019). Computer-assisted learning programmes were developed with the aim of computerising teaching. These programmes automated the process of providing structured knowledge, testing the learners' knowledge and presenting immediate feedback to the learners (Bates,

2019). By the early 90s, the personal computers had multimedia capacity giving rise to high-quality educational software distributed via CD-ROMs. The development of the educational programmes of this period was underpinned by the principles of the behaviourist and cognitivist learning theories. In terms of classroom technologies, by the late 90s, the electronic projector and presentational software (e.g. Microsoft PowerPoint) became a common feature in universities. The electronic presentation technology replaced the overhead projectors that were in use between the 60s and late 80s.

The first VLEs were developed following the advent of the World Wide Web in 1991. The VLEs provided an online teaching environment where lecturers uploaded learning resources and assessment tasks, and communicated with students. The pedagogical model promoted by the VLEs was based on asynchronous interactions between the students and their lecturer. By the mid-2000s, high-speed Internet connectivity became affordable by the general population of developed countries (Picciano, 2019). Quality multimedia learning resources (pictures, sound and video) could now be incorporated in the VLE offering a better online teaching and learning experience. By the late 2000s, the VLE (e.g. Blackboard and Moodle) became an essential mainstream technology in many HEIs (Browne *et al*, 2008). Furthermore, during this period, universities started integrating virtual classroom software (e.g. Blackboard Collaborate and Adobe Connect) into the institutional VLE.

Advances in video compression technology and affordable video-streaming servers led to the introduction of technologies for recording and streaming of lectures during the late 2000s (Bates 2019). Lecture capture technology involves the recording of class-based activities including audio, video, electronic presentations, demos on the workstation and writing/material displayed via the visualiser. These recordings are generally made available through the institutional VLE, offering students the flexibility to review the lectures or parts of these for revision purposes. By the early 2010s, many universities equipped their theatres and classrooms with lecture capture technology. Academics have raised concerns about the negative impact that lecture recordings may have on student attendance for lectures. However, the evidence from many research studies across different disciplines shows that lecture recordings generally does not affect student class attendance (Dommeyer, 2017). Arguments have also been made that the lecture recordings remove the personal interaction and engagement at the point of delivery that are critical for a sound learning experience (Chang, 2007; Kwiatkowski and Demirbilek, 2016). The student engagement during

lectures may be enhanced through the 'flipped classroom' model that is gradually gaining the interest of academics. This instructional model encourages the students to view learning resources (e.g. short videos, podcasts, text-based) prepared by their lecturer prior to attending class. Access to these learning resources is usually provided through the institutional VLE. The class time is then dedicated to more active forms of learning, including peer instruction, collaborative problem solving, team-based presentations, and role play (Strayer, 2012). The flipped classroom model is based on 'the constructivist and social-constructivist perspectives on learning, emphasising the active role of the learner in constructing knowledge and the importance of scaffolding by teachers and peers' (Stöhr and Adawi, 2018, p.2). Proponents of the flipped classroom model suggest that this pedagogical strategy provides students with enhanced learning experiences. Academics can design in-class learning activities that support the development of higher-order and critical thinking skills in their students, helping them to grow as self-directed and lifelong learners. The acceptance of the flipped classroom by academics and students is problematic. Academics report that they need to invest significant time and effort to prepare the pre-class learning content and the in-class activities (O'Flaherty and Phillips, 2015). Students are critical of the flipped classroom because this adds responsibility on them for their pre-class learning and they need to put more effort to participate in class-based activities (O'Flaherty and Phillips, 2015). There are implementation challenges of the flipped classroom model because both academics and students are familiar and comfortable with the demands of the conventional lecture.

In the mid-2000s, there was the advent of social media and mobile technologies. Social media included blogs, wikis, video-sharing platforms, (e.g. YouTube and Vimeo), social networking sites (e.g. Facebook and LinkedIn), messaging and conferencing apps (e.g. WhatsApp and Skype). The use of social media was facilitated with the proliferation of laptops, tablets and smartphones. These mobile devices and social media facilitate the creation and exchange of user generated data based on the ideological and technological foundations of Web 2.0 (Kaplan and Haenlein, 2010). The integration of social media, originally intended for informal use, into university teaching and learning is still at its early stages. At present, the typical use of social media has been to foster online communities of practice and to share user generated learning resources (Bates, 2019). Anecdotal evidence suggests that there are concerns about the use of social media platforms such as

Facebook, which are outside the control of HEIs. There are concerns related to privacy, ownership of data and legal responsibilities (Chugh and Ruhi, 2018).

Just over a decade ago there was another innovation in online learning; the first massive open online course (MOOC) called 'Connectivism and Connective Knowledge' was launched at the University of Manitoba. This MOOC, designed by George Siemens and Stephen Downes, was based on the connectivist pedagogy where learning is the result of extensive interactions between course participants. The assumption behind the connectivist learning theory is that learners would be responsible for their own learning; they will make 'the connections that are most important to their learning and the construction of their knowledge' (Picciano, 2019, p.21). Within a few years many MOOCs were offered through different platforms such as Coursera, EdX, Udacity and FutureLearn. Prestigious universities worldwide including Stanford University, Harvard University and The Open University started offering their MOOCs. Over the years different MOOC models evolved (Clark, 2013). The cMOOC type, described earlier, is based on the connectivist pedagogical model. The xMOOC variant is based on the behaviourist, cognitivist and connectivist learning theories. The main focus of the xMOOC is the provision of media-rich learning resources (e.g. text, podcasts, videos, and simulations), a user-friendly online environment that promotes interactions between learners, and the assessment of learners' progress (Bates, 2019). MOOCs have been described as a potential disruptive innovation that would offer a more open and cost-effective alternative to conventional tertiary education (Langen and Bosch 2014). However, this anticipated disruption did not happen. Research shows that although MOOCs have high sign-up rates and they also suffer from high drop-out rates (Onah, Sinclair and Boyatt 2014). Furthermore, the participants signing up on MOOCs are generally well qualified implying that these courses are not really democratising tertiary education as anticipated (Littlejohn and Hood, 2018). According to Bates (2019), MOOCs have limited value beyond providing opportunities for nonformal education and supporting communities of practice.

The Open Educational Resources (OERs) is another development facilitated by the affordances of Internet technology. The Massachusetts Institute of Technology (MIT) OpenCourseWare project in 2002 was an important development that led to the increased use of OERs in HE (Abelson, 2008). This project involved the online publishing of the educational materials used in the teaching of undergraduate and postgraduate courses at MIT at no cost. OERs are learning resources that are freely

available on the Web. These resources include full courses, course materials, open textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. (Atkins, Brown and Hammond, 2007). The author of an OER typically creates a licence (e.g. Creative Commons Licence) to regulate the use and adaptation of the learning resource. OERs are typically available through online repositories such as MERLOT, OER Commons and OpenLearn. The use of OERs decreases the time dedicated by academics for the design and production of learning resources. Despite this benefit, the adoption of OERs in HE is slow (Allen and Seaman, 2014). Concerns were raised about the quality of OERs. Although the quality of some OERs may be questionable, some academics have the perception that free learning materials are generally of a sub-standard quality (Falconer *et al*, 2013). The professional self-image of many academics has also been suggested as another reason for the low uptake of OERs by academics (Hampson, 2013 in Bates, 2019, p.575). Some academics feel that their professionalism diminishes when they use the learning resources produced by others.

During the past decade the potential of learning analytics (LA) attracted the attention of many universities worldwide (Avella, *et al*, 2016; Viberg *et al*, 2018). LA is the measurement, collection, analysis and reporting of data about learners and the context in which learning taking place, for the purpose of improving teaching and learning (Siemens and Gašević, 2012). LA draw data from different institutional IT systems including the VLE, the student records system, the attendance monitoring system and the library information system. The data derived from the VLE includes logins, views of learning resources, interactions in the discussion boards, submission of assignments. The student record system provides data on prior qualifications, socio-economic status, study-unit selections and grades. Attendance monitoring systems provide data about class attendance. The library information system provides records of book loaning and ejournals viewing. The data captured from these systems is processed by the institutional learning analytics solution (e.g. Civitas Learning and Tribal Edge Student Insight). Visualisations of the data analytics are made available to staff and students via dashboards or mobile apps. Nottingham Trent University for example, provided dashboards to students and their tutors on the VLE to illustrate the students' engagement with their course relative to their peers (Sclater, Peasgood and Mullan, 2016). The dashboard enabled students to compare their activity on the module (e.g. views of learning resources on VLE, forum postings and use of ejournals) with those of their peers. Students were therefore able to assess if they needed to increase their activity in the module to match the average class activity. The same

information was provided to the tutors who also received email alerts when there was no sign of student activity for fourteen days. This is an example of descriptive LA. There is also LA of the predictive type. Purdue University for example, has developed a system called Course Signals that sends early alerts about students at risk of dropout. The system collects data about the students' qualifications background and characteristics, and their engagement with the VLE and feeds this through an algorithm to determine the students' risk level. The analytic results are sent to the module coordinator and the student for follow-up. This system has improved student retention and grades (Arnold and Pistilli, 2012). Recommender systems and adaptive learning environments are examples of another type of LA – the prescriptive LA. The Degree Compass, developed at Austin Peay State University is an example of a recommender system that supports the students' module enrolment process (Denley, 2014). This system compares the student's module history and grades, to a dataset of previous students with a similar profile. Based on this comparison the system recommends modules that best fit the students' academic ability and programme of study for upcoming semesters. The Open Learning Initiative, developed at Carnegie Mellon University is an example of an adaptive learning environment. This platform hosts online courses that students follow on their own. The courses provide learning resources, formative assessment activities and immediate personalised feedback to students guiding them to other learning resources that will benefit them most. Academics can combine parts of the online courses to their class-based teaching. Research shows that this hybrid teaching approach has reduced by half the time taken for students to learn the course content (Lovett, Meyer, and Thille, 2008).

Serious games are another recent technological innovation that has potential to support the teaching and learning practices. In the educational context, serious games are entertaining tools aimed at enhancing the students' motivation to learn and engaging them more deeply in the learning process (Bates, 2019). Serious games challenge students to solve complex problems that mimic real world situations. These games help students develop their problem solving, communication and decision-making skills. The use of serious games in HE is still at its early stages. Academics have limited knowledge of this technology and its potential to aid student learning. Some academics fear that games would trivialise conventional university education. The high cost and effort involved in the design and development of quality serious games is risky. There is evidence however of cost-effective options to produce serious games (Arnab *et al*, 2014).

Immersive technology is another emerging technology that can improve the learning processes. Immersive technology is defined as the human immersion in a synthetic world (Seidel and Chatelier, 1997). It is an umbrella term that includes augmented reality, virtual reality and mixed reality. Augmented reality (AR) adds digital elements to a live view often by using the camera and an app on a smartphone (e.g. Snapchat lenses). A smartphone can be used for example, to view digital labels and supplementary information about museum displays. Virtual reality (VR) involves the complete immersion experience using a wearable headset (e.g. Oculus Rift and Google Cardboard) or a multi-projected environment to generate realistic images, sounds and other sensations that simulate a user's physical presence in a virtual environment. A mixed reality experience combines the elements of both the AR and VR where real world and digital objects interact. As indicated earlier, there are potential benefits of using immersive technology in HE. Immersive technology 'can provide students with a deep, intuitive understanding of phenomena that are otherwise difficult if not impossible to achieve in other ways' (Bates, 2019, p.429). It is well suited for experiential learning enabling students to develop a range of skills and knowledge through immersion into three-dimensional, highly realistic learning environment. Learners can manipulate objects within these three-dimensional environments. For example, the Nano Simbox VR developed at the University of Bristol, is an interactive molecular dynamics modelling tool that enables students to experience and play with molecules (O'Connor *et al*, 2018). This technology can be applied in various disciplines: in medicine to simulate surgical procedures; in architecture to test the design of a building; in archaeology to reconstruct archaeological sites; in history to visit virtual museums (Bates, 2019).

Another recent technological innovation that has potential in HE is artificial intelligence (AI) (Klutka, Ackerly and Magda, 2018; Alexander *et al*, 2019; Bates, 2019). AI uses computer systems that approximate human reasoning to make predictions to accomplish tasks and activities. AI solutions can facilitate the university administrative services such as student marketing and recruitment, admissions and enrolment, time-tabling and scheduling of lectures. In terms of its pedagogical affordances, AI can support intelligent tutoring systems, assessment and evaluation, adaptive systems and personalisation, chatbots and automated essay grading (Bates, 2019). AI technology supports the provision of learning resources and activities that can detect students' difficulties and correct these through adaptive feedback. The technology supports also the curation of learning resources based on the students' individual requirements. AI can facilitate student collaboration in an online discussion

board, for example by providing automated feedback, generating automatic questions for discussion, and analysing the discussion process (Klutka, Ackerly and Magda, 2018; Bates, 2019). Concerns were raised about the behaviourist model of learning underlying the AI applications that support the teaching and learning in HE (Bates, 2019). There are also fears that AI systems will take the role of academics. Although AI tools can help academics with the routine tasks of teaching and learning, the concept of a fully AI-facilitated class is very remote (Klutka, Ackerly and Magda, 2018).

The above review of technological developments shows that in recent decades, universities worldwide have made huge investments in technology to enhance the administrative, teaching/learning and research processes. Every technological wave has been accompanied by assertions that the new technology is going to innovate and transform what can be realised in conventional teaching models of tertiary education. Although technology has facilitated the administrative processes of teaching and learning, as yet there is little evidence of significant impact on the pedagogical practices of academics for more effective teaching and learning (Flavin, 2017; Kirkwood and Price, 2014; Walker, Jenkins and Voce, 2018a). The focus of technological innovations tends to be on the technology itself rather than on how it can lead to pedagogically effective learning experiences. Understanding how technologies can be used to reconceptualise teaching and learning is difficult because the advances in technology move at a fast pace (Bates, 2019). Cuban (1986) claims that the use of technologies in HE follows a cycle of expectations, rhetoric, policies and limited use. Emerging technologies begin with great expectations of enhanced student learning outcomes that is sometimes supported with some preliminary research by proponents of the technology. The anticipated potential of the new technology may also feature in institutional policies. Academics are often blamed if there is a slow uptake or lack of use of the technology (Lai, 1996). The remaining part of this section will review the factors influencing the use of technologies to enhance the effectiveness of teaching and learning in HE.

2.5.2 Factors Influencing the Use of TEL

As indicated in the previous section, technology is nowadays an important feature of HE. Many administrative processes in universities, including student records, finance records and library records, are nowadays predominantly based on ICTs. Universities have made significant investments to equip lecture theatres and

classrooms with technology including computers, wireless networks, lecture recording and videoconferencing facilities. Universities have also implemented institutional VLEs and regularly procure an extensive list of software to facilitate teaching, learning and research (Walker *et al*, 2018b). This deterministic model of technology as a cause of change in HE will be discussed later in this section. In addition to the claim that technology is another driver of change in HE, assertions have been made about the potential of technology to address some of the challenges experienced by universities (Bach, Haynes and Lewis Smith, 2007; Kirkwood, 2009). Claims have been made that technology can help universities cope with the increase in student numbers without a proportionate growth in expenditure. Laurillard (2007) however, claimed that technology may increase costs depending on how courses are designed. Flexible programmes of study that cater for the needs of today's students are possible through technology. As indicated in Section 2.3, the present students' cohorts in universities are less homogenous than before. Claims have been made that digital technologies have the potential to engage the diverse range of students and better prepare them to succeed in the knowledge-based society (Bates, 2019). This section discusses how technology can enhance teaching and learning.

A multitude of labels has been used to describe the use of technology in education including 'computer-aided learning', 'networked learning', 'technology-enabled learning', 'online learning', 'blended learning', 'flexible learning' and 'e-learning'. In recent years, the term 'technology enhanced learning' (TEL) became increasingly popular (Balacheff *et al*, 2009; Walker *et al*, 2018b). For the purpose of this research study, TEL is an inclusive term that encompasses all digital technologies used in class-based learning and online learning. The word 'enhanced' in TEL indicates that technology is used to add value to the process of teaching and learning.

Technology enhanced learning stresses that the technology is employed in service of the learning, and that is not just adopted, but is expected to deliver improvement. (Scanlon *et al*, 2013, p.12)

As indicated later, technology does not automatically enhance learning but there is research evidence that in some situations it does (Ruiz, Mintzer and Leipzig, 2006; Salmon, 2002).

Digital technology supports teaching and learning in different ways. It can be used 'to support existing teaching', 'to enhance teaching' and 'to transform the students' learning experience' (Higher Education Funding Council for England, 2009).

Technology can 'support existing teaching' by increasing the flexibility of students' access to learning resources or by making a process, such as the provision of formative assessment and feedback, more time-effective or scalable. Technology can 'enhance teaching' through the provision of additional or supplementary learning resources. It can 'transform the students' learning experience' enabling them to undertake learning activities in ways that have previously been difficult or impossible to achieve.

Many claims have been made regarding the benefits of technology in education and its potential to increase learner engagement, active learning and student-centred teaching. Many studies of technology use in HE however, show a disparity between the rhetoric of potential learning benefits and the actual impact on the students' learning experience. Reviews showed that technology is often used to replicate and supplement existing pedagogical practices (Hoffmann, 2006; Kirkwood and Price, 2014) rather than to transform the teaching and/or learning processes and outcomes. Technology is generally used to reinforce teacher-led and didactic practices and there is little evidence that this is changing the pedagogical practices of academics to better prepare graduates for the knowledge-based society (Blin and Munro, 2008; Eynon, 2008). TEL is not really driving the changes in curricula and teaching approaches to stimulate high-quality learning experiences at university. A holistic approach is required to transform the curricula and pedagogical approaches where the academic is the main agent of this transformation.

It has been claimed that academics tend to use technology to support or reinforce their conception of teaching (Gonzalez, 2009; Englund, Olofsson and Price, 2017). "The teacher's perspective on the use of technology derives to a greater extent from their approach to teaching" (Laurillard, 2010, p.424). As indicated in Section 2.4, the conceptions of university teaching range along a continuum from the transmission of knowledge to the facilitation of learning (Kember and Kwan, 2000). These conceptions influence the pedagogical practices adopted by academics and their use of technology in teaching and learning.

Academics conceiving of teaching as a process of transmitting knowledge to students generally adopt a 'teacher-focussed' or 'content-focussed' approach to teaching. They are mostly concerned with increasing the disciplinary knowledge of their students; that is, bringing about quantitative changes in their students (Kirkwood and Price, 2008). The pedagogical practices of these academics are typically of a

presentational nature, providing students with knowledge, skills and procedures. These academics are generally more comfortable with the traditional lecture and they often use technology in face-to-face teaching to disseminate information. They typically use the VLE, for example, as a repository of learning resources. These academics view technology as the catalyst that changes teaching and learning at university. They believe that pedagogical innovations are triggered by the introduction of new technologies in universities (Laurillard *et al*, 2009). These academics have a 'technology-led' conception or 'technological deterministic view' of technology use in education. Smith and Marx (1994) claimed that technological developments are the central determinants of social changes, rather than the individuals and social contexts shaping the way in which technological tools are used.

Technological determinism endorses the notion that using technology for teaching will in and of itself lead to enhanced or transformed educational practices. (Kirkwood, 2013, p.5)

Other academics conceive of teaching as a process that 'facilitates learning', associating teaching with changing how their students think and act. Teaching is aimed at helping students build conceptual understanding of knowledge and interpret the world differently; that is, bringing about qualitative transformations in their students (Kirkwood, 2009). These academics generally adopt 'learner-focussed' approaches to teaching where students are engaged in activities that develop their conceptions and understanding of topics. They make more use of the interactive, communicative and collaborative capabilities of technology compared to academics who are primarily concerned with the transmission of disciplinary knowledge (Laurillard, 2010). These academics have a 'user-led' conception of technology use in education. This conception shifts the emphasis from the technology to the teacher, and how the teacher uses technology to change the nature of the students' engagement and learning. These academics believe that the teacher is the main agent responsible for changes in the students' learning. It is the teacher who redesigns the curriculum and adopts technology to bring about the qualitative transformations in their students. This is the 'disruptive view' or 'transformative view' of technology in teaching and learning (Garrison and Kanuka, 2004; Blin and Munro, 2008).

Arguments have been made that the teaching approach is a relatively stable concept (Kember and Kwan, 2000), suggesting that academics essentially adopt either 'content-focussed' teaching or 'learner-focussed' teaching approaches. However, arguments were also made that the context affects the academics' teaching

approach and their use of learning technologies (Prosser and Trigwell, 1999; Fanghanel and Trowler, 2008). Some factors which influence the pedagogical practices adopted by academics include their experience of different teaching and learning approaches, the teaching norms of their disciplines, their teaching formation, the topic they are teaching, the student group size, the furniture layout and the technology in classrooms. In the remaining part of this section, I shall focus on some factors that influence how academics use technology to change their pedagogical practices and the learning experiences of their students.

Roger's (1995) diffusion of innovation theory has been widely used to describe the attitudes of academics to the adoption of technology. He identified five categories of academics: (a) innovators; (b) early adopters; (c) early majority; (d) late majority; and (e) laggards. The innovators and early adopters have a higher propensity to embrace technology compared to the late majority and laggards. The innovators and early adopters are described as enthusiastic about technology and how this can enhance their teaching approaches. The early and late majority want to see the educational reasons for using technology and often require assistance to develop their confidence to change their teaching approaches (Hanson, 2002). The laggards are described as usually being sceptical about technology and unlikely to adopt changes in their teaching. Caution however, should be exercised with these categorical labels; academics labelled as laggards for example, may not necessarily lag on all technologies in all contexts; some academics may have valid pedagogical reasons for not using some features of the VLE.

Many universities have implemented strategies or policies aimed at encouraging the use of technology to transform learning. Some academics argue against these top-down policies because they feel that technology is being forced upon them and this is disrupting unnecessarily their pedagogical practices to the detriment of their students' learning (Coates, James and Baldwin, 2005; Hirschheim, 2005). These academics perceive these strategies as being disconnected from their day-to-day teaching experiences. Institutional strategies are more likely to be accepted if these are developed in consultation with academics (Maddux and Johnson, 2010). Other academics feel that their professional identity is threatened when using technology (Bach, Haynes and Lewis Smith, 2007; Laurillard, *et al*, 2009). Literature about TEL often mentions that the role of the teacher needs to shift from the 'sage on the stage to the guide on the side' (Chung, 2005); the teacher becomes the facilitator of the learning process. Some academics misinterpret the facilitator role

as a low-level skill that will gradually erode their control and authority over the teaching and learning process (Eynon, 2008). There are also academics claiming that conventional class-based teaching works well and this should not be transferred to the online modality (Bleffert-Schmidt, 2011). Consequently, they are hesitant to embrace technology altogether or else they take the less risky approach and use technology to replicate or support their existing teaching practices.

The teaching culture of the department or faculty also influences the use of technology by academics (Knight and Trowler, 2000; Norton *et al*, 2005; Lindblom-Ylänne *et al*, 2006, Walker *et al*, 2018b). Different academic disciplines adopt different approaches to teaching and learning. Shulman (2005) used the label 'signature pedagogies' to describe the patterns of teaching, learning and assessment associated with particular disciplines. The pedagogical practices of academics are often guided by the signature pedagogy of their discipline; that is, by the norms of behaviours within their discipline and among their fellow scholars. Academics are unlikely to adopt teaching practices that do not conform to the established ethos and disciplinary context of their departments. Changing the teaching practices of individual academics can be difficult because their preferred approach is often mediated by their working environment (Gibbs and Coffey, 2004; Hockings, 2005).

The lack of time coupled with high workloads also influences the uptake of learning technologies by academics (Conole and Oliver, 1998; Bertolo, 2008; Allen and Seaman, 2015; Walker *et al*, 2018b). Claims have been made that academic workload is a 'silent' barrier to the implementation of TEL in HE (Gregory and Lodge, 2015). Academics complain that they lack the time to rethink their teaching practices whilst keeping up with their discipline-based research and administrative tasks (Knapper, 2010). They also feel they lack the time to follow pedagogical and technical training. Teaching with technologies is widely considered to be labour intensive; the amount of advanced preparation and organisation in technology-based teaching requires more time compared to conventional class-based teaching. Academics have reported that online teaching requires extensive planning and attention to detail which is often overlooked in traditional teaching (Hinson and LaPrairie, 2005). Several research studies showed that this workload diminishes in the long term (Vaughan, 2007; McIntyre, Watson and Larsen, 2009; Benson, Anderson and Ooms, 2011), but this may not be apparent to academics unfamiliar with new technologies. Many academics also perceive technology-based teaching as part of a gradually growing workload with no reward (Bertolo, 2008). In many universities, discipline-based

research is more rewarding than quality teaching (Tynan and Garbett, 2007; Donnelly, 2008; Higher Education Academy, 2009). Academics with a strong disciplinary-research profile are in better position compared to those with a high teaching profile in relation to career progression and research funding prospects. Many academics, therefore, prioritise on increasing their research output rather than on enhancing their teaching. In recent years, however, several HEIs introduced incentives, rewards or recognition for excellence in teaching and exemplary technology-based teaching (Cannell and Gilmour, 2013).

Students' attitudes and expectations can be another barrier to the implementation of technology-based teaching, particularly when this involves active learning. This is despite the fact that students expect that technology should be an integral component of their university education experience (Walker *et al*, 2018b). The majority of students arrive at university accustomed to didactic teaching (Kember, 2001); they conceive of learning as a process of absorbing the knowledge transmitted by the teacher. Consequently, these students expect academics to use technology to aid this mode of learning. The students' expectations about technology use rarely go beyond the function of facilitating the accessibility of learning resources and administrative communications related to their course. Some academics have also mentioned that the VLE does not help students take on the responsibility for searching and identifying learning resources; technology makes the students lazy (Benson, Anderson and Ooms, 2011). The students are often challenged when technology is used for learner-focussed teaching.

Another barrier for innovative technology-based teaching is the lack of adequate PD. Academics are not provided with the appropriate training and development opportunities needed to transform their teaching practices (Cuban, 2001). Claims have been made that there has been little investment in teacher development around the use of technologies compared to the overall expenditure on technology in education (Laurillard and Masterman, 2010). The next section discusses the PD of university academics.

2.6 Professional Development

The academic environment in the tertiary education sector is becoming increasingly complex and this is creating challenges for university leaders and academics (refer to Section 2.2). Academics are expected to cope with larger and

more diverse student cohorts, to better prepare students with the knowledge and skills required to function effectively in the knowledge-based society, to remain current with developments in their disciplines and technological innovations, and to meet the quality assurance and accountability requirements of their institutions (Stefani, 2013). The changing context in HE has prompted universities to take actions aimed at improving the quality of teaching and the students' learning experience. These actions included: the publication of policy and strategic documents about teaching and learning; the revision of quality assurance processes; the setting up of teaching and learning units to support the PD of academics and associated support staff; and the requirement for academics to follow formal teacher training.

A review of literature shows that a range of terms is used to describe the activities that support the development of staff in the HE context. These terms, which are often used interchangeably, include 'professional development', 'professional competence', 'instructional development', 'faculty development', 'academic development', and 'educational development' (Stefani, 2013; Saroyan and Trigwell, 2015). Alongside this diversity of labels, different definitions have been proposed for PD (Nelson, 1983; Elton, 1995; Leibowitz, 2014). 'Professional development' has been described as a 'catchall phrase' with the term 'professional learning' being used to refer to the activities that academics engage in to enhance their academic performance and their students' learning experience (van Schalkwyk *et al*, 2015). It should be noted, as indicated later on, that academic performance is not limited to teaching and learning only. Throughout this research study both 'professional development' and 'academic development' will be used. The next section addresses the growth of PD in HE during the last few decades.

2.6.1 The Growth of Professional Development

This section starts with a review of developments in HE in Africa, Asia, Latin America, the US and Europe to highlight the trends and challenges to the PD of academics. The review includes also an account of the development of university teaching in the UK.

The context of HE in African countries varies significantly making it difficult to reach generalisations (Teferra and Altbach, 2004). It is generally agreed that the quality of HE teaching in many African countries is sub-standard due to inappropriate government agendas (De Clercq, 2002; Kistan, 2002). Many African countries have

a shortage of qualified academics due to the low salaries offered by universities. Consequently, highly qualified academics tend to seek employment opportunities away from academia or else in universities elsewhere. This situation is impacting negatively the quality of teaching in universities. Higher student enrolments are not improving this situation (USAID, 2014). The uneven distribution of technologies in African countries, also poses challenges related to the use of technologies in HE to support research, teaching and learning. Despite these major challenges, several universities in Sri Lanka and Ethiopia have PD activities to enhance the quality of teaching (Fink, 2013; ICED, 2014).

The context of some Asian countries bears resemblances to that of some African countries. The increasing student enrolments and under qualified academics are impacting negatively the quality of HE. A number of academics are unable to reach higher academic standards because they lack English language speaking abilities and practical expertise (Asian Development Bank, 2010). Many HEIs are offering PD programmes to enhance the teaching performance and research output of academics (Hallinger, 2010). Many graduate schools in Japan for example, have been offering teacher training since 2017 (ICED, 2014). Thailand has national standards for teacher training courses in HE. Academic participation in PD programmes has been problematic (Jacob, Xiong and Ye, 2014). Academics find it difficult to dedicate time for PD because they are overloaded with teaching responsibilities that have increased with higher student enrolments. The salaries offered by several Asian universities are based on the teaching hours that academics complete every term. This salary structure does not incentivise academics to engage with PD; a high teaching load would mean less time for participation in PD. It has been reported that several Asian universities dedicate low budgets for PD.

The HEIs in Latin American countries, such as Argentina, Brazil, Chile, Colombia and Peru, are also experiencing increasing student enrolments (Balán, 2014). The low level of digital literacy skills amongst academics is also impacting negatively the quality of teaching in many universities. Academics generally lack the ability to align academic resources and innovate their teaching for better student learning outcomes. Internationalisation is posing another significant challenge to HEIs in Latin America. Several universities are addressing this challenge through PD activities aimed at helping academics build teaching competencies in complex and diverse educational context (Landinelli, 2008). Universities are also developing strategies to help academics innovate their teaching. Some countries for example,

Brazil, Colombia, Guatemala, Mexico and Peru have established teaching awards to raise the standard of university teaching (Vaillant and Rossel, 2012).

The challenge of high student enrolments in Australian universities has also prompted actions for higher quality teaching (Norton, Sonnemann and Cherastidtham, 2013). Several universities, for example, the Australian National University, Queensland University of Technology, the and University of Tasmania have adopted the professional teaching standards framework developed by the Advance HE in the UK to improve the quality of teaching. Furthermore, all Australian HEIs are required to adhere to the national Higher Education Standards Framework (Threshold Standards). These standards require teaching staff to have 'knowledge of contemporary developments in the field they are teaching (which is informed by continuing scholarly activity), skills in teaching, learning and assessment relevant to the needs of the student cohorts involved' (Tertiary Education Quality Standards Agency, 2015, p.22). Academics are also invited to participate in the Australian Awards for University Teaching established by the Australian Government to celebrate and reward excellence in university teaching. Concerns have been raised on the increasing number of sessional academics teaching undergraduate courses. These casual staff pose risks for the quality of the student learning experience.

In recent years, the accountability agenda, high student enrolments, ICTs and decreased funding have impacted the HEIs in the US. There has been a public outcry that universities are not preparing undergraduate students for the jobs of the 21st century. The advances in technology have also impacted the university education; blended and online learning are now part of the mainstream HE in the US. Many universities are offering PD on online teaching (Allen and Seaman, 2009). The problem of funding is partly being addressed through the recruitment of sessional academics for undergraduate teaching. The teaching experience of these academics is generally limited and there are challenges to involve them in teacher training programmes. In many US universities, faculty learning communities (FLCs) help academics improve their teaching effectiveness. The FLC model, developed at Miami University in the late 70s, is similar to Wenger's community of practice. A FLC is an interdisciplinary group of academics committed to improve teaching. The group meets regularly to share ideas and experiences about effective pedagogical practices (Ward and Selvester, 2012). The academics support each other to try out new teaching approaches.

The overall trend of the PD of academics in European HEIs is uneven. University teaching in many European countries is predominantly teacher-centred (Pleschová *et al*, 2012) even though there is wide recognition that student-centred teaching helps students develop the skills needed for the future. In many European countries the quality assurance agenda is raising the standards of teaching in HE. Performance indicators such as student feedback, teaching portfolios and peer teaching evaluations, are used to enhance the pedagogical practices of academics (Darling-Hammond, 2006; Shao, Lorraine and Newsome, 2007). The standards of teaching in many European HEIs have been impacted positively by the Bologna Process and the Erasmus+ programmes. The Bologna Process established the European Higher Education Area (EHEA) Qualification framework to allow the comparability in the standards and quality of HE qualifications across the HE systems in the European Union. The Erasmus+ programme promotes the mobility of students between HEIs. This mobility programme enables students to follow part of their degree studies at a different university and get credits that will contribute to the final award at the student's home university. The EHEA framework has pushed universities to implement teacher training PD. The development of university teaching in UK is well established compared to many countries worldwide. The research and practices to enhance the quality of teaching in UK HEIs are impacting the HE systems in other countries. As indicated earlier, several HEIs in Australia have adopted the professional teaching standards framework developed by the UK Advance HE to improve the quality of teaching.

The origins of professional standards for teachers in UK HEIs can be traced back to the early 1990s. In 1993, the Staff and Educational Development Association (SEDA) in the UK developed a Teacher Accreditation Scheme for HE teachers. The Scheme accredited courses for new teaching staff in HEIs. These courses required academics to demonstrate the achievement of eight learning outcomes, in a way that reflected six underpinning principles and values that characterised a good HE teacher. The Scheme did not prescribe the format or content of these courses. The courses involved a mix of self-, peer- and tutor-assessments. There were also requirements related to external examining, quality assurance and appeals. Academics who successfully completed these courses were accredited by SEDA as HE teachers. Within five years, around 60 HEIs in the UK, Australia, New Zealand, Hong Kong, Singapore and Sri Lanka sought SEDA accreditation for their teacher training courses. Most of these courses were postgraduate certificates in university teaching and learning. In 1996, SEDA proposed to the National Commission of Inquiry

into Higher Education (chaired by Lord Ron Dearing) that university teaching can be improved by requiring academics to complete a teaching qualification programme. The Institute for Learning and Teaching in HE (ILTHE) was established in 2000 to implement the recommendations of the Dearing Report. ILTHE defined the professional standards for university teachers and the accreditation of training programmes for university teaching. The professional standards defined by ILTHE were similar to SEDA's Teacher Accreditation Scheme standards. Academics were able to obtain ILTHE membership after successfully completing a PD programme at their institution that has been accredited by ILTHE or SEDA. These programmes were generally postgraduate certificate courses in university teaching. Experienced academics were able to obtain ILTHE membership through the presentation of a portfolio evidencing their teaching practice accompanied by referee reports. By July 2002, ILTHE accredited 127 programmes at 106 UK HEIs and had 12,000 members (Bostock and Baume, 2016). In 2004, the ILTHE and another two organisations (the Learning and Teaching Support Network and the Higher Education Staff Agency) were merged into a single organisation known as the Higher Education Academy (HEA). The HEA inherited the remit of the ILTHE becoming responsible for the professional standards of teaching in HE, the accreditation of PD programmes that supported the development of these standards, and the professional accreditation of academics and staff supporting teaching at universities. The HEA manages the UK Professional Standards Framework for Teaching and Supporting Learning (UKPSF) launched in 2006 and revised in 2011. The UKPSF has two components: (a) the Dimensions of Practice and (b) the Descriptors. There are three Dimensions of Practice in the UKPSF: (a) areas of activity undertaken by teachers and support staff, (b) core knowledge needed to carry out those activities at the appropriate level, and (c) professional values that individuals performing these activities should exemplify. There are four Descriptors associated with a particular career stage corresponding to HEA Fellowship categories: Associate Fellow, Fellow, Senior Fellow and Principal Fellow. The Fellow membership is the standard for early career university teachers. In March 2018, the HEA merged with the Equality Challenge Unit and the Leadership Foundation for Higher Education to form the Advance HE. The latter is responsible for learning and teaching, equality and diversity, and leadership and governance in higher education. In 2017, the UK government introduced the Teaching Excellence Framework (TEF) to raise the quality and status of teaching in UK HEIs (Department of Education, 2016). HEIs participating in the TEF are rated on the teaching quality, including student satisfaction; the institutional environment in which students learn; and student outcomes, including the performance of under-represented groups

(Gunn, 2018). The adequacy of the TEF processes to accurately measure the quality of teaching has been critiqued. Gibbs (2017) raised concerns about the validity of the teaching quality judgements made by a small panel of experts. Rust (2017) argued that the metrics used to measure retention, employment outcomes, and student satisfaction within the TEF do not assess the teaching excellence with any validity.

The review of international developments in university teaching showed that during the last three decades many HEIs worldwide established teaching and learning units. The staff working in these units, variously referred to as academic developers, educational developers or faculty developers, have experience in teaching and/or technology support. Their role is that of supporting 'individual academics and institutions to analyse, reflect on, and enhance their professional development, with a particular emphasis on the improvement of teaching and learning, assessment of student learning, course and curriculum design' (ICED, 2004, p.215). Over the years, the academic developers created national educational development networks such as the Staff Educational Development Association in the UK, the Society for Teaching and Learning in Higher Education (STLHE) in Canada, the Higher Education Research and Development Society of Australasia (HERDSA) in Australia and New Zealand, the Professional and Organizational Development Network (POD) in the USA, the All Ireland Society for Higher Education (AISHE) in Ireland and the Deutsche Gesellschaft für Hochschuldidaktik in Germany. In 1993, the national educational development networks established the 'International Consortium for Educational Development' (ICED). Two important aims of the ICED are: (a) to help member 'organisations develop their capacity for educational development in higher education through the sharing of good practice, problems and solutions' and, (b) 'to help educational developers in countries where no national network exists to form such a network', (ICED, 2004, p.215). In 1996, the ICED launched the 'International Journal for Academic Development' (IJAD); a scholarly journal to disseminate research about practice and extend the theory of educational development, with the goal of improving the quality of HE worldwide. The ICED and IJAD played an important role to establish educational development as a field of practice and research.

Despite the increased interest in the teaching role of academics, there are geographic variations in terms of PD activities related to the development of teaching. There are countries for example, in Latin America, Africa, the Middle East, Asia, and most of southern and eastern Europe, where universities have few teacher development initiatives (Fink, 2013). In other countries for example, Canada, UK,

South Africa, Sri Lanka, Ethiopia, Australia, New Zealand, USA, Denmark, Finland, Norway, Sweden, and the Netherlands, nearly all universities have PD activities to enhance the quality of teaching (Fink, 2013; ICED, 2014). In some countries for example, Norway, Finland, Denmark, Sri Lanka, Ethiopia, the teacher training of academics is compulsory (Trowler and Bamber, 2005; ICED, 2014). In other countries for example, Australia, New Zealand, Netherlands, Sweden, UK and Ireland, this training is at the discretion of individual universities. Many universities in the UK and Ireland, for example, offer teacher training programmes but they have the autonomy to decide on mandating this training.

The regional scan of literature on the developments in HE teaching shows a number of key themes and challenges to the PD of academics. The massification movement of HE, the students' diversity, the decrease in funding, the advances in ICTs, the accountability and quality assurance, the students' and employers' expectations, the lack of teacher training and the increase in sessional teaching staff are impacting the development of teaching in HE. Several of these themes are related to each other. Higher student enrolments for example, increase the diversity of students (language, race, ethnicity, socioeconomic status) requiring academics to adopt pedagogical practices that meet the diverse students' needs (Ward and Selvester, 2012). The challenges posed by larger student cohorts and the decreasing funding are being addressed by the recruitment of sessional academics. As indicated earlier, the sessional academics lack teaching experience and formal teacher training posing risks for the quality of the student learning experience. The national and regional policies, the students' and employer's expectations are also impacting the accountability and quality assurance procedures to improve the quality of teaching in HEIs. The quality assurance agenda has also led to the growth of formal teacher training programmes in many HEIs. According to Fink (2013), the lack of pedagogical training of academics and the ongoing research on teaching and learning are the key factors for the growth of formal teacher training programmes in HE since the early 70s.

The lack of pedagogical training of academics has been widely debated. There are concerns about academics that do not follow any pedagogical training when primary and secondary school teachers are required to follow extensive teacher training preparation programmes. Academics finish their doctoral studies with a high level of subject-matter expertise but they generally lack an understanding of what it takes to learn and how to facilitate the learning process (Boice, 2000). They are

generally not prepared for teaching as they are for research, and they often rely on their personal classroom experiences as students and teachers when teaching (Moses, 1993; Halpern and Hakel, 2002; Donnelly, 2008). They usually emulate the teaching practices of those professors that had a positive impact on them when they were students. The traditional disciplinary teaching practices, therefore, persist from one generation of academics to the other (Fink, 2013). This does not mean that the traditional disciplinary teaching approaches are wrong; the implication here is simply that academics may be adopting teaching practices uncritically because they have not experienced other teaching practices. PD interventions can be used to expose academics to a variety of teaching approaches so that they can make informed decisions about the teaching practices they can adopt in their study-units. Academics also, develop and adapt their teaching strategies according to their ongoing personal experience of teaching at university. Arguments have been made that PD is unnecessary because good teaching is the result of a natural process which develops over several years of teaching experience. Pleschová *et al*, (2012), however, claimed that this process of learning how to teach through “trial and error is a waste of time, effort and university resources” (p.6). Beaty (1998) claimed that teaching experience on its own does not guarantee enhanced teaching. Teaching experience needs to be informed by critical reflection and an awareness of alternative pedagogical practices that are theoretically informed. Critical reflection and exposure to alternative pedagogical practices can be provided through formal PD activities. The natural development process of academics as teachers can happen quicker through PD activities (Gibbs, 2014). Many research studies showed that formal PD programmes enhance the teaching practices of academics (Coffey and Gibbs, 2000; Postareff, Lindblom-Ylänne and Nevgi, 2007).

The emerging research on teaching and how students learn has also contributed to the increase in teacher training PD in HE (Fink, 2013). Claims were made that are problems with the effectiveness of the traditional lecture to actively engage students in the learning process (Twigg, 1999; Bligh 2002). The traditional lecture can support effectively the lower levels of learning (understanding and remembering) but it is generally less effective at supporting the application of knowledge to new situations and the development of affective outcomes and self-directed learning (Fink, 2003; Blach and Wise, 2011). As discussed in Section 2.3, the purpose of HE goes beyond developing a solid foundation of disciplinary knowledge. Developing critical thinking, applying knowledge to new situations and developing the ability for self-directed learning have become increasingly important in

HE. These abilities are best achieved if the students are actively engaged in the learning process (Laurillard, 1996; Coates, 2006). Acquiring these abilities requires academics to complement the conventional lectures with other teaching approaches (e.g. discussion-based teaching, enquiry-based learning, problem-based learning) that are better at engaging students with the higher levels of learning. The implementation of teaching strategies for active learning may be very challenging for academics because they may not have experienced this type of learning. Universities are supporting academics to consider alternative teaching approaches through PD programmes. The next section considers different orientations to PD and models of PD.

2.6.2 Types and Models of Professional Development

The scope of PD extends beyond enhancing the pedagogical practices of academics. Sorcinelli *et al*, (2006) described five evolutionary phases of PD each characterised by a different focus; they called these: (a) the age of the scholar; (b) the age of the teacher; (c) the age of the developer; (d) the age of the learner; and (e) the age of the networker. During the age of the scholar (1950s-60s), PD initiatives focussed on supporting academics to improve their scholarly competence to enhance and increase their research output. During the age of the teacher (1970s-80s), the focus of PD activities was on supporting the teaching role of academics. It was during this period when universities recognised that teaching undergraduate students was a primary role of academics and that academics can benefit from formal teacher training and continuous professional development (CPD) (Knapper, 2003; Sorcinelli *et al*, 2006). Many universities started developing programmes aimed at enhancing the pedagogical expertise and instructional techniques of academics. During the age of the developer (1980s), many HEIs established central academic development units and formalised the role of the academic developers in these units. The age of the learner (1990s) was characterised by a shift in focus from the development of pedagogical expertise to enhancing the student learning. The PD activities emphasised the importance of student-centred learning including active, collaborative and problem-based learning. It was also during this period that academics started following training on the integration of technology in teaching. In the present age of the networker, the academic developers are encouraged to “preserve, clarify, and enhance the purposes of faculty development, and to network with faculty and institutional leaders to respond to institutional problems and propose constructive solutions as we meet the challenges of the new century...” (Sorcinelli *et al*, 2006,

p.28). Therefore, over the years, the orientation of PD extended beyond enhancing the research and pedagogical practices of academics to include all those activities that might support them in their teaching, research and administrative roles throughout their academic career.

A variety of approaches to PD exists including staff induction programmes, show-and-tell sessions, workshops, mentoring, peer review, award-bearing courses and one-to-one consultations. These formal PD activities are typically coordinated by academic development units within universities. Learning technologists attached to other university departments are usually involved in PD initiatives related to TEL (Shephard, 2004; Mostert and Quinn, 2009). PD experiences may also include informal conversations with colleagues, reading professional publications, networking during conferences and sponsored projects aimed at innovating teaching and redeveloping curricula (Ferman, 2002; Roberts, 2008).

This research study involved a formal PD initiative intended to help academics enhance their teaching practices with the use of technology that will improve the student learning.

A review of literature showed that there are various types and orientations of PD in HE. Kennedy (2014) for example, described eight models of PD classified according to their capacity for supporting professional autonomy and transformative practice:

- a) The *training model* is commonly used to introduce academics to new teaching and technical skills. Although this model is effective at introducing academics to new knowledge (Hoban, 2002), it has been criticised for its lack of connection to the classroom context of academics.
- b) The *deficit model* addresses some perceived deficit in teacher performance. Rhodes and Beneicke (2003) argued that this model blames the individual teachers for their weaknesses without giving due consideration to the departmental and institutional structures which may be contributing to these weaknesses.

- c) The *cascade model* involves individual academics attending training events and then cascading the information to their colleagues. This model has been criticised for supporting a technicist view of teaching where skills and knowledge are given priority over attitudes and values (Solomon and Tresman, 1999).
- d) The *award-bearing model* involves the completion of certified courses that are usually validated by universities. This model was also criticised for its focus on classroom practices without considering issues of values and beliefs (Solomon and Tresman, 1999).
- e) The *standards-based model* aims at meeting standards of teaching and student learning. This model was criticised for its tendency to reduce teaching to a common, standardised set of values, behaviour, knowledge and practice without giving importance to the individual teacher 'artistry' and organisational context (Kennedy, 2014).
- f) The *coaching/mentoring model* of PD is typically based on one-to-one relationship between experienced and novice academics. This model can support a transmission conception of PD, where academics are initiated into the norms and traditions of the experienced academic. It can also support a transformative conception of PD where the novice academics are assisted to enhance their teaching practices.
- g) The *community of practice model* is similar to the coaching/mentoring model but this model typically involves a group of academics and the interactions are not confidential. New learning generally occurs as a result of the interaction between members of the community rather than from formal courses.
- h) The *collaborative professional inquiry model* of PD typically involves academics working in collaboration to identify a problem and performing an activity to address the problem. This is the action research approach where academics inquire into their own practice and they try to learn about other practices, perhaps through engagement with existing research.

It would appear that the 'collaborative professional inquiry model' with its transformative orientation is the best model of PD (Kennedy, 2004). It is essential however, to acknowledge that each PD model may have more relevancy than the

other models in certain contexts. The ‘training’ and ‘deficit’ models, for example, with their transmissive orientation, may be better at assisting academics to develop technical and teaching skills. Some models of PD may contribute to both a transformative and a transmissive purpose. As such, it may be more helpful to consider the relative merits of each approach, rather than simply advocating any one over the rest.

Another framework of orientations to academic development has been proposed by Land (2004). He developed this framework following an analysis of in-depth interviews with a group of academic developers about their role. He identified 12 distinct orientations to academic development as indicated below:

**Table 2.2: Orientations to academic development
(Neame, 2013; adapted from Land 2004)**

Orientation	Description
<i>Managerial</i>	Development as an institutionally mandated process of transition from one state of staff competence to another.
<i>Political-strategic (investor)</i>	Pragmatic: using networks to achieve a balance between ‘presence’ across the institution and ‘impact’ in policy delivery.
<i>Opportunist</i>	Change agent, exploiting shifts, cracks or uncertainty in the organisation.
<i>Entrepreneurial</i>	Emphasis on achieving innovation, employability targets, etc. Less focused on community building.
<i>Researcher</i>	Educational development mobilised as an integrated part of the academic community’s disciplinary development.
<i>Romantic (ecological humanist)</i>	Emphasis on development of the individual.
<i>Reflective practitioner</i>	‘Emphasis is not on competence but on the process of becoming more competent’ (Gibbs, 1996, p. 22). Development as experiential learning for developers and their colleagues.
<i>Professional competence</i>	Combines an ‘apprenticeship’ notion which aligns with ‘training’ to serve learner needs.
<i>Internal consultant</i>	Support for client-specified development, not externally instigated intervention.
<i>Modeller-broker</i>	Good practice identified by developer, then ‘promoted’ within a community of practice.
<i>Interpretive-hermeneutic</i>	Development as dialogue: interpretation and reinterpretation by mutually respectful colleagues.
<i>Provocateur</i>	Emphasis on change agents – typically drawn from within an academic community itself.

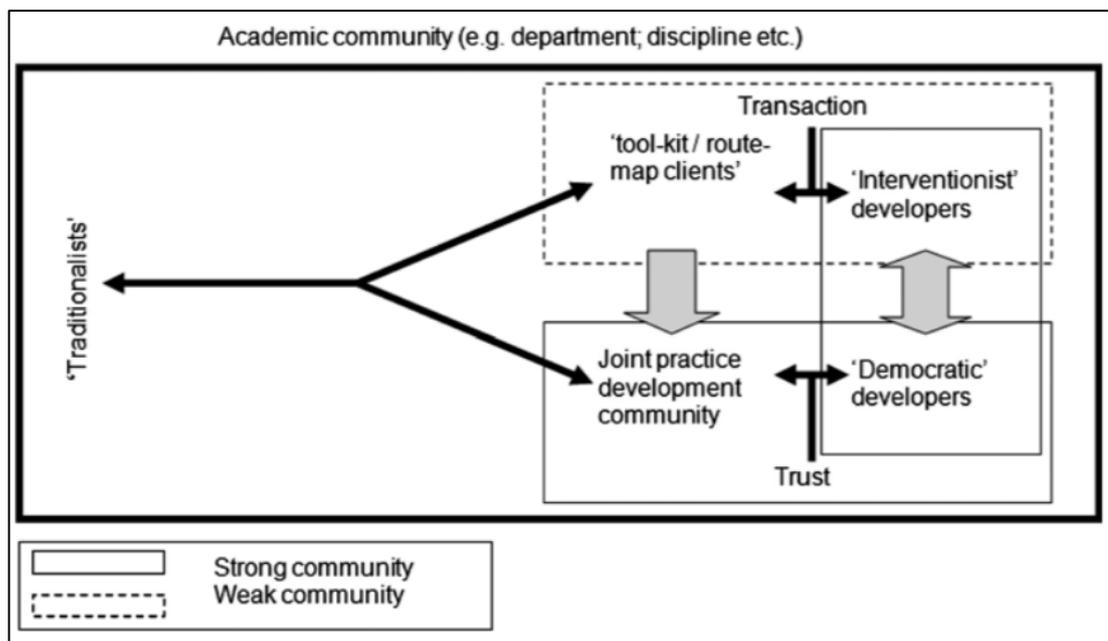
Academic developers with a ‘managerial’ orientation generally align their practices with the institutional policies and strategies, and follow the directions of the university administration. The ‘political-strategic’ academic developers tend to establish

contacts and network with persons having an influence on strategic decisions that support their PD activities. Academic developers with an 'entrepreneurial' orientation are typically involved in projects, sometimes in partnership with external agencies, for example to incorporate employability skills in the university curriculum. The 'romantic' orientation involves PD activities aimed at the personal development, growth and well-being of the individual academic. The 'vigilant opportunist' academic developer seizes the appropriate time to organise PD interventions for example, when a new learning technology is introduced in the institution. The 'researcher' orientation assumes that the educational research findings influence research-minded academic colleagues. The academic developer applies the findings from research to pragmatic problems that academics may have. Other academic developers may focus on PD activities that support the 'professional competence' of academics for example, developing their lecturing skills or their small group facilitation skills. The 'reflective' academic developers adopt a critical stance towards their own practice, the practices of the academics, institutional initiatives (e.g. the introduction of new quality assurance processes) etc. The 'internal consultant' works with departments or course teams (or individuals within those departments and teams) to make things happen. Some academic developers model their own practice directly to colleagues during PD programmes – this is the 'modeller-broker' orientation. The 'interpretive-hermeneutic' orientation involves communication between the academic developers and their colleagues to reach an understanding of the latter's academic practices. Some academic developers support the development of practices of teaching and learning related to a discipline – this is the 'discipline-specific' orientation. According to Land (2001), these orientations are neither fixed nor related to the academic developers' personal characteristics. He claimed that academic developers can assume any of these orientations (or identities) depending on their working preferences and on the strategic contexts requiring their intervention. These orientations are best seen as strategies to deploy according to the circumstances. Academic developers generally take an eclectic approach 'as they traverse the differing academic and cultural terrain of their institutions' (Land, 2004, p.126).

Neame (2013) reviewed Land's orientations to academic development and proposed a simpler dichotomous categorisation: 'interventionist' and 'democratic' (Figure 2.8). Neame (2013) placed the 'managerial', 'opportunist' and 'professional competence' orientations in the interventionist category. The focus of the interventionist approach is on the transfer of knowledge, the active dissemination of good practice, developing specific competencies and problem-solving. Neame (2013)

describes the relationship between the academic developer and the academics as a 'transaction-based relationship'. The democratic category includes the 'internal consultant', 'romantic', 'researcher', 'reflective practitioner', 'interpretative-hermeneutic' and 'provocateur'. The focus of the democratic approach is on building 'trust-based relationships', empowering academics rather than completing tasks, a mediating role for the educational developer, reflective engagement with practice and development by conversation (Neame, 2013). Some orientations such as the 'political-strategic', 'entrepreneurial' and 'modeller-broker' can follow along a continuum between the interventionist approach and the democratic approach. Furthermore, PD can start with an interventionist approach and gradually becomes democratic if a trust-based relationship develops between the academic developer and academics. Neame (2013) recommends that academic developers should adapt their approach ('interventionist' or 'democratic' or somewhere in between) to the culture and the perceived needs of the academics with whom they are working. He claims that academics with a positivistic orientation to research are generally more positive about interventionist PD with its focus on cause-effects of teaching strategies. Academics from the social sciences would benefit more from democratic PD approaches emphasising dialogic and collaborative development.

Figure 2.8: Moving from an interventionist to democratic approach to academic development (Neame, 2013)



In recent years, there has been increased recognition that PD for academics should be addressed as adult education (Cranton and King, 2003; King and Lawler, 2003). Academics exemplify the characteristics of adult learners described by Knowles (1990). The experience of academics as researchers and teachers makes them 'self-directed' and 'independent learners', particularly within their disciplinary field (Lawler and King, 2001). The 'accumulated experiences' of academics can be used as a resource for learning. Their 'readiness to learn' is increasingly oriented to the development tasks of their social roles. Academics are keen on applying new knowledge with a sense of immediacy and therefore, their 'orientation to learning' becomes less subject-centred and increasingly problem-centred. As adult learners, academics are likely to have an internal 'motivation to learn' that drives them to pursue instructional improvement and teaching innovations that will also include the integration of technology in their teaching (Åkerlind, 2005; Maguire, 2005). These adult learner characteristics should have an impact on the design and implementation of PD programmes for academics (McQuiggan, 2012).

The design of the PD course in this research study was guided by Lawler and King's strategies (2001) for adult learning. The first strategy recommends that the environment of PD programmes reflects a climate of respect to allow the growth of the independence and self-directedness of academics. Academic developers should recognise the diversity of the academics' teaching and learning orientations, their discipline's content, departmental context, prior experiences and attitudes towards change (Daley, 2003; Ali *et al*, 2005). The second strategy recommends activities that encourage academics to participate actively in PD. Academic developers should first consider the needs and concerns of academics and then plan learning activities relevant to them. This approach increases the intrinsic motivation of academics to engage in PD activities. The third strategy recommends that the PD should incorporate the varied experiences of academics. Encouraging academics to share their positive and negative teaching experiences serves as an additional learning resource during PD. The fourth strategy recommends a collaborative inquiry approach in PD where academics investigate issues and concerns that are relevant to them (Lawler and King, 2001). Academics should be supported to set their own objectives and outcomes of their PD. They should work with other participants to reflect on their beliefs about teaching and learning, and to question their teaching practices. This interaction helps academics open their minds to different perspectives about teaching and learning (Brookfield, 1995). This collaborative inquiry environment enables academics to create new alliances with peers and share the risk-taking associated

with change (Buckley, 2002). The fifth adult learning strategy recommends learning for action and incorporating action plans (Lawler and King, 2001). Academics engage in PD activities to learn something that is relevant to their teaching role. PD should incorporate initiatives where academics design and develop teaching and learning activities that they can use in their courses. The sixth strategy recommends the empowerment of academics to put their learning into action (Lawler and King, 2001). Academic developers should encourage academics to reflect on their personal dispositions and institutional structures that enable or hinder them from implementing teaching innovations. This approach increases the likelihood that academics move on to implement changes in their teaching.

Reference was made earlier to factors which impact negatively on the use of learning technologies in HE. Some of these factors also affect the engagement of academics with PD for teaching. Time pressure, emphasis on research, lack of incentives (e.g. funding to attend events), lack of personal interest and lack of encouragement are commonly cited barriers to PD (King, 2004). A research study by Quinn (2012) about the academics' views of PD for teaching identified four types of resistance discourses to PD: (a) disciplinary discourses; (b) student/school deficit discourses; (c) skills discourses; and (d) performativity discourses. Some academics attribute more importance to research than teaching. They assume that their disciplinary specialisation automatically qualifies them as competent teachers (Radford, 2001). These academics use disciplinary discourses to resist PD for teaching; they view teaching as a disciplinary endeavour and their subject-specific training as adequate training for them to teach their disciplines. It has been argued that this disciplinary view of teaching inhibits the application of knowledge from other disciplines such as educational theory from the education discipline (Knapper, 2003). Some academics argue that students are not adequately prepared by schools and pre-university colleges to follow undergraduate programmes of study (D'Andrea and Gosling, 2005). This student/school deficit discourse pushes the argument that training programmes should be directed at students rather than academics. Arguments have been made, however, that students are inducted into the academic learning at university, rather than in pre-university educational institutions (Geisler, 1994), which undermines this position. Other academics resist PD for teaching because they view teaching as a learned set of mechanical skills; for example, learning how to use the classroom technologies, developing public speaking and presentation skills, etc. This skills discourse argues that PD for teaching is typically focussed on the technical aspects and procedures of teaching. Furthermore, the

educational theory and alternative pedagogies presented during PD may be viewed as being disconnected from classroom practices. A performativity discourse is also used by academics to avoid PD. Some academics argue that HEIs are promoting staff development activities for quality assurance and accountability purposes (Edwards, 1998). This strategy pushes academics to participate in PD activities in order to comply with institutional requirements (Searle and McKenna, 2007) rather than because they are genuinely interested in their development as teachers. Academics also avoid engaging with PD to enhance their teaching if their institution attributes more importance to research outputs than quality teaching for career progression purposes. Cannell and Gilmour (2013) have also claimed that some academics do not participate in PD because this would imply an admission that they have developmental needs and lack professional skills.

2.6.3 Professional Development for TEL

PD for TEL can have a technology focus or a pedagogical focus. Technology-focussed PD helps academics develop their technical skills, for example, learning how to use the different features of the VLE, the plagiarism detection software, the lecture capture software, etc. Claims were made that after participating in technology-focussed workshops, academics will often end up using technology to replicate and supplement their existing teaching practices rather than transform these to enable better learning (Price and Kirkwood, 2008). Technology-focussed PD promotes technology as a means of delivery. In contrast, pedagogically-focussed PD programmes enable academics to assess the educational benefits of using technology. These programmes are intended to help academics reflect on the appropriateness of technology for different types of learning. The academics are encouraged to evaluate and reflect on their educational beliefs and teaching practices. They are assisted to reflect on the nature of knowledge, learning and teaching at university. When academics reflect on their teaching practices, they are likely to develop a better understanding of what they are doing and why they are doing it (Cranton and King, 2003). They begin to critically question their teaching practices and open up their perspectives about teaching. PD for TEL can therefore act as a catalyst for academics to reflect on their existing teaching practices and how these can be improved using technology. Compared to conventional class-based learning, technology-based learning requires a more structured and analytical approach to teaching. PD for TEL can therefore provide academics with an opportunity to develop new ideas about teaching and learning (Tallent-Runnels *et al*, 2006) and to restructure

traditional classroom roles and relations (Jaffee, 2003). This approach to PD increases the likelihood that academics use technology to transform their teaching to enable better learning. Bach, Haynes and Lewis Smith (2007), however, recommended that PD for TEL should include the development of both technical and pedagogical skills. Academics should master the basic skills of technologies before they can engage with the educational potential of these technologies (Clegg, Konrad and Tan, 2000). Understanding and utilising learning technologies requires specific skills training to use technology, design materials and computer-based interactions.

Academic developers play an important role in PD programmes aimed at helping academics develop their pedagogical competencies for TEL. Price and Kirkwood (2008) cautioned academic developers against over-emphasising a pre-determined set of technical or teaching skills during PD programmes. Arguments have been made that standardised teaching practices have a negative impact on the academics' "professional identity, initiative, a sense of autonomy, and discretion to teach contingently" (Vogel, 2010, p.40). Academic developers should avoid presenting a dichotomous view of teaching, even if they are advocating learner-centred teaching, because this would imply that there is a right and a wrong way of teaching. If they do so, they will be modelling the teacher-centred approach as the best teaching approach. PD should help academics experience different kinds of learning including the learner-centred conception of learning which they may have not experienced when they were students (Appleton and Asoko, 1996). PD programmes that focus solely on the dissemination of information or the development of standardised teaching and technical skills are unlikely to challenge the attitudes, beliefs, and assumptions of academics. After participating in this type of PD, the academics will try to fit the new information into their meaning perspectives and, if it does not fit, they ignore it (Kirkwood and Price, 2014). PD should provide academics with opportunities to reflect, experiment and probe new learning principles (Buckley, 2002). Claims have been made that a dialogic approach to PD is better at supporting academics transform their teaching through technology compared to a directive approach to PD (Kirkwood and Price, 2005). The dialogic approach involves discussions between the academic developer and the academic to identify the needs and problems of the academic. The academic developer will then organise PD activities that address the needs and problems of the academic. The focus of PD therefore shifts from being topic driven to problem solving (Elton, 1995).

Academic development based on the teaching deficit model may trigger defensive reactions from academics because they perceive this as an attack on established disciplinary teaching practices. As indicated earlier, this model of PD has been critiqued because it blames the individual academics for their weaknesses without giving due consideration to the departmental and institutional structures which may be contributing to these weaknesses (Rhodes and Beneicke, 2003). Academic developers should support their programmes with findings from research and evaluation studies of students' experiences of learning with technology, which are presented to supplement the pedagogical theories and models. Dissemination in the simple sense of transmission of innovation may have limited success. Academics are professionals capable of deriving solutions for operating in novel and uncertain environments (Price and Kirkwood, 2008). PD for TEL should therefore help academics develop a professional competency to evaluate and use technology appropriately for quality learning. Academic developers should assume a consultative role to assist academics to structure innovative uses of technology and to understand how to integrate this into their curriculum. Claims have been made about the advantages of having academics from different disciplines participating in the same PD programme (Åkerlind, 2005; Covington, Petherbridge and Warren, 2005). Lecturers learn more from one another by drawing upon their disciplinary differences, and mixed grouping allows for practices and assumptions to be challenged by others from different backgrounds (Rowland, 2001). Colleagues are an important source of intellectual stimulation and support when considering changes in teaching practices.

2.6.4 The Impact of Professional Development

Questions have been raised about the impact and effectiveness of academic development (Putnam and Borko, 2000; Sparks, 2002). A review of literature showed that there is limited research evaluating the impact of PD on teaching and learning. The majority of research studies have evidenced the impact of PD courses through the teachers' experiences of these courses. There is much less research evaluating the participation in PD courses on students' learning (Gibbs and Coffey, 2004; Bamber, 2008). Measuring the impact of PD is a challenging task for academic developers particularly if they view change as a personal process occurring over time. Kreber and Brook (2001) have argued that the outcomes of academic development are part of the process of "becoming" (p.54) rather than being endpoints. The outcomes of a PD programme may be observed a long time after the programme has ended (Sword, 2011). Change is seen as a process not an event, one which takes

time and is only achieved in stages, being neither steady nor continuous (Hall and Loucks, 1978). It is also difficult to attribute changes to a specific PD programme because academics are also influenced by informal conversations with colleagues, reading professional publications, etc. Academics are likely to experience impacts and changes upon their beliefs and practices outside of PD programmes.

Research studies undertaken by McKenzie (2003) and Åkerlind (2007) about the developmental process of university academics as teachers have implications for academic developers. Both studies suggested that as academics develop into effective teachers, their focus of attention shifts from increasing their disciplinary knowledge to enhancing their understanding of how they can facilitate student learning effectively. Åkerlind's study (2007), for example, revealed the underlying categories in teaching development:

- a) "Teaching development as building up a better knowledge of one's content area, in order to become more familiar with what to teach" (p.27). Academics increase their content knowledge through reading disciplinary literature and conducting research in their area.
- b) "Teaching development as building up practical experience as a teacher, in order to become more familiar with how to teach" (p.28). The focus shifts from their content area to teaching strategies. Academics develop their teaching strategies through teaching experience.
- c) "Teaching development as building up a repertoire of teaching strategies, in order to become more skilful as a teacher" (p.29). This approach goes beyond the 'natural' development of teaching strategies. Academics develop these strategies by attending PD courses, observing colleagues teaching and reading educational literature.
- d) "Teaching development as finding out which teaching strategies do and don't work for the teacher, in order to become more effective as a teacher" (p.29). Academics try out new teaching techniques and reflect on the outcomes of these techniques. They seek feedback from students about their teaching and from colleagues about learning materials.

- e) “Teaching development as continually increasing one’s understanding of what works and doesn’t work for students, in order to become more effective in facilitating student learning” (p.31). Academics reflect on the effectiveness of their teaching by assessing its impact on the students’ learning outcomes.

The above categories can help academic developers understand the impact of PD initiatives on academics. For example, pedagogically-focussed PD for TEL is more likely to have an impact on academics who are at categories (c) to (e). Academics who believe that they can become effective teachers by increasing their disciplinary expertise [category (a)] and through teaching experience [category (b)], see little value in attending teaching development courses (Åkerlind, 2007). This does not mean that early-career academics do not benefit from pedagogically-focussed TEL courses. Educational developers should design PD activities to broaden the early academics’ beliefs that good teaching requires high disciplinary knowledge and teaching experience only. Early-career academics should be encouraged to shift their understanding of teaching development beyond categories (a) and (b). Åkerlind (2007) proposes that PD activities should further assist academics to shift their understanding of teaching towards category (e). For example, academics should be assisted to understand that being confident with different teaching methods may not lead to the desired student learning outcomes, which involves a shift beyond category (d).

There is also an ongoing debate in the literature about the impact of disciplinary-specific and generic or cross-disciplinary approaches to academic development (Parsons *et al*, 2012). Some studies have concluded that discipline-specific PD programmes are more effective in changing the pedagogical practices of academics compared to generic PD (Chalmers and Gardiner, 2015). However, arguments were also made about the value of generic PD. Donnelly (2007) suggested that generic PD enhances the integration between theory and practice for early-career academics. Research studies about the teaching approaches adopted by academics have implications on academic development approaches. Lindblom-Ylante *et al*, (2006) found that academics in the ‘hard disciplines’ adopt more instruction-oriented teaching compared to academics in the ‘soft disciplines’ that adopted more learner-centred teaching. Marsh (2007) have argued that academics change their teaching practices when they critically reflect on their practices. Peseta, Manathunga and Jones (2010) suggested that generic PD is better than subject-based PD at supporting

academics to develop questions and critically reflect about their teaching practices. A study on the impact of a postgraduate course in HE teaching also suggested that academics embraced a shift from teacher-centred to learner-centred teaching partly due to the benefits of interdisciplinary discourse (Butcher and Stoncel, 2012). The literature review showed that there is value in both discipline-specific and generic PD. The challenge is for academic developers to organise generic PD that would also be sensitive to the disciplinary needs of academics.

Claims have been made that although PD can help academics change their teaching conceptions, this may not necessarily lead to changes in teaching practices (Trigwell and Prosser, 1996; Samuelowicz and Bain, 2001). This is the dissonance between the academics' beliefs about teaching or 'espoused theories', and their teaching practices or 'theories-in-use' (Argyris, Putnam and Smith, 1985). Some of the reasons for this dissonance and the prevailing use of technology to supplement or replicate traditional teaching have been discussed earlier (Chapter 2.5). The departmental and institutional cultures are critical factors that influence the teaching practices of academics. The practice of teaching is a compromise between the teacher's academic and social contexts (Trigwell, Prosser and Waterhouse, 1999). It has been suggested there should also be PD for support staff, departmental and senior managers, so that appropriate policies, supporting structures and resources are in place for effective technology use. PD aimed at changes in teaching conceptions and practices must run in parallel with organizational changes (Fanghanel, 2004).

After reviewing the factors influencing the impact of PD, this section will end with a discussion of academic development practices that should be considered for long-term impact and changes to pedagogical practices. Kelly (2009) suggested that effective academic development programmes should be of a long duration, based on a social constructivist theory of learning, linked to the teaching content, based on an experiential model of learning and involve reflection on learning. Research studies showed that PD programmes of a long duration are more effective compared to one- or two-day workshops in terms of supporting changes in the professional practices of academics (Hinson and LaPrairie, 2005). PD programmes based on the social construction of learning where academics discuss their experiences and concerns about teaching are likely to have a long-term impact on pedagogical practices (Beaty, 1998). Linking PD programmes to the academics' discipline also encourages positive links to their teaching practices (Kelly, 2009). PD development should engage

academics to undertake activities where they can transfer their learning to teaching their disciplines. PD programmes that are based on an experiential or situated learning enable academics to experience teaching and learning approaches that they could then adopt in their teaching. The 'teach as you preach' principle urges academic developers to be good models of the teaching they are trying to promote (Swennen, Lunenberg and Korthagen, 2008). For example, an online PD course would give the participating academics a vicarious experience of online teaching and learning. In addition to understanding the student perspective in an online course, the academics would be able to reflect on this delivery mode from the perspective of a tutor and a course designer. As indicated earlier, claims were made that quality teaching is the result of a natural process that develops over years of teaching experience. However, experience alone does not necessarily lead to quality teaching. A professional approach to teaching also requires practice that is informed by critical reflection and knowledge of educational theory that informs alternative approaches to teaching (Beatty, 1998). Sound PD programmes provide academics with opportunities to reflect critically on their current teaching practices and link knowledge of learning theories with these practices.

2.7 Summary

A common thread running through the literature review about technology in HE is that academics are not using technologies to transform the students' learning experiences. They are generally using learning technologies to replicate existing teaching practices for example, by digitising existing course materials and learning resources. Claims have been made that many academics do not have formal teaching development and they often emulate conventional disciplinary teaching practices. Academics are frequently unsure how best to use technologies in their teaching because they lack prior experience as a student with technology-based learning. A considerable body of literature suggests that the academics' general approach to teaching and learning determines their use of technologies for teaching. Academics conceiving of teaching as the transmission of disciplinary knowledge to students often use technology as a means of delivering information. Academics conceiving of teaching as a process that changes how their students think and act, make more use of the interactive, communicative and collaborative capabilities of technology. Staff development activities focussed on technology skills are not sufficient for academics to design sound technology-based educational experiences. Encouraging academics to adopt and to innovate with technologies in their teaching continues to be a

challenging endeavour for academic developers (Wilson, 2011). Consequently, there is a need for more research on academic development practices that assist university teachers to develop teaching conceptions that lead to enhanced student learning experiences with technologies. According to Devlin (2008) there is a need for more research to determine which academic development practices are effective and in what ways these influence the teaching practices that lead to improved student learning. Academic developers would benefit from evidence of PD programmes that work given the resource and time constraints of academics and their scepticism about the value of teacher development programmes. There is a need for evidenced-based approaches within academic development (Kane, Sandretto and Heath, 2002; Devlin, 2008; Chalmers and Gardiner, 2015; Bamber and Stefani, 2016). There is a paucity of research studies that provide evidence of the process and outcomes of academic development for TEL. This research study addresses this knowledge gap.

The broad purpose of this research study is to contribute to the body of knowledge about technology-based teaching and learning at university. More specifically this research explores the effects of a pedagogically-focussed course about learning technologies on a group of academics teaching in a traditional campus-based university. The next chapter reviews the main research question and how this was studied.

Chapter 3: Methodology

3.1 Introduction

In this chapter, a methodology is developed drawing on the key findings from the review of literature presented in Chapter 2. The chapter begins by stating the main research question for the study. An overview of the philosophical and theoretical positions used to guide research in this area will be presented. This is followed by a discussion about qualitative strategies of inquiry and the use of the case study methodology for this research. A detailed description of the methods used to collect and analyse the data follows. The chapter ends with a discussion of the limitations and ethical considerations of this study.

3.2 The Research

This research study builds on an existing body of research about teaching and learning in HE and the use of learning technologies in university teaching. Learning technologies are often used by university academics to enhance conventional learning designs, rather than to enhance the quality of the learning process and outcomes (Laurillard, 2008). Encouraging academics to adopt technologies and innovate their teaching is a challenging endeavour for academic developers (Wilson, 2011). This research study explores this challenge, seeking to develop further understanding of the issues involved through evidence about the effects of an online PD intervention on a small group of academics in a traditional campus-based university. The main question addressed by this study is:

How can academic developers assist academics in HE to make pedagogically-informed uses of learning technologies?

The following sub-questions were also used to guide this research study:

- a) How can academic developers learn what academics need to make pedagogically-informed uses of technology?
- b) What kinds of academic development activities help academics to change the way they think about their teaching?

This research adopted the CF (Laurillard, 2012) as a model of what teaching and learning ought to be at the undergraduate level. The pedagogical practices of a small group of academics were analysed through observations, interviews and artefacts to establish which components of the CF were incorporated in their day-to-day teaching. The academics then followed an online PD course in TEL that was developed and facilitated by the researcher. The purpose of this was to explore the kinds of academic development activities that help academics to change the way they think about their teaching. The ways in which evidence was gathered and interpreted in support of this aim will be described in the following sections.

3.3 The Philosophical Basis for the Study

Researchers should make their worldviews explicit when justifying the research methodology adopted for their study (Guba, 1990). A philosophical worldview or paradigm is “a basic set of beliefs that guide action” (Guba, 1990, p.17); it is a set of assumptions that researchers make about the nature of reality (ontology) and the methods used to discover this reality (epistemology). Picciano (2019) argues that the researchers’ view of reality and how this can be known and understood, inform the choices made about the methodology and subsequently the methods used to collect and analyse data in their research inquiries. Researchers should therefore, clarify their philosophical position regarding their understanding of what constitutes truth and reality (what is), and how this reality or knowledge can be created, acquired and communicated (what it means to know). Being explicit about the philosophical orientation enhances the coherence and the quality of findings of a research study (Hamilton and Corbett-Whittier, 2013).

Although a wide range of philosophical orientations has been proposed, several of these philosophies do not differ significantly from each other, leading some researchers to organise these in distinct categories (Lather, 2006; Creswell, 2014). This section provides an overview of the four broad categories of philosophical paradigms proposed by Creswell (2014): (a) postpositivism; (b) social constructivism; (c) advocacy/participatory; and (d) pragmatism.

‘Postpositivism’ postulates that knowledge is developed by empirical observation and measurement of the objective reality that exists ‘out there’ in the world (Creswell, 2014). The philosophical underpinnings of postpositivism can be found in the positivist belief that objective reality about the social and psychological

world can be studied and understood using the research methods of the natural and physical sciences. Knowledge gained through this approach has been labelled as 'scientific' knowledge. Positivists start off with a theory about a specific phenomenon or problem, collect data, and analyse this data to determine whether this supports or refutes their theory. Positivist research tests hypotheses that are formulated from theory to establish 'laws' leading to predictions and generalisations; this is the deductive approach. Complex phenomena and problems of the social and psychological world are broken down into small parts or variables that can be observed, measured and manipulated. This research is typically of a quantitative nature, involving numeric measurements of phenomena and relationships between variables. Positivists assume that human behaviour is regulated by external events or stimuli. The aim of positivist research therefore, is to establish cause and effect relationships that lead to a better understanding of the world and the human behaviour. Postpositivism however, challenges the rigidity of the positivist perspective that there is an absolute truth to knowledge. Human beings are fallible and claims about reality can only be made "with a certain degree of probability" (Lodico, Spaulding and Voegtler, 2010, p.7). Postpositivists "see knowledge as conjectural" (Phillips and Burbules, 2000, p.29), that is, a proposition is assumed to be correct until this is proven otherwise. Postpositivists acknowledge that true scientific experiments are not always appropriate to study the complexity of human behaviour. However, both postpositivists and positivists attribute importance to objectivity and value-free inquiry, believing that researchers should strive to minimise the sources of bias in their studies and maintain objectivity by adopting a detached role from the participants involved in their research inquiry. Postpositivists however, recognise that researchers cannot take a neutral or value-free position in research. Researchers are inherently biased in their worldviews; they approach their study with different perceptions of reality, however, they assume that

...experiences overlap to a large degree, and that a good researcher can take these different perceptions into account in providing the best possible explanations of reality. (Lodico, Spaulding and Voegtler, 2010, p.7)

'Social constructivism' rejects the postpositivist ideology that there is an objective reality 'out there' to be discovered. Truth does not exist 'out there' but is instead created by researchers through their interactions with the world. Researchers do not discover knowledge; they construct it (Merriam and Tisdell, 2016). Researchers, it is argued, inevitably construct their own meanings in different ways,

resulting in multiple perspectives or interpretations of a phenomenon – this is described as interpretivism. The social constructivist or interpretivist worldview claims that reality is subjective, and that individuals develop subjective meanings and interpretations of their experiences of the world. These subjective meanings are formed and influenced through discussions and interactions within the community - the social perspective (Mertens, 2005). Social constructivists interpret the multiple meanings that people make of a situation or context. Their emphasis is on the interpretation of the specific meanings rather than on generalising from the specific meanings to the world as postpositivists do. Social constructivism rejects the postpositivist belief that human behaviour is controlled by external events or stimuli. Instead they view human beings as active initiators of their own behaviour. Social constructivists assume that individuals construct different meanings within a context that is shaped by the cultural norms that they grow and live in. Consequently, social constructivist researchers

...seek to understand the context or setting of the participants through visiting this context and gathering information personally. They also interpret what they find; an interpretation shaped by the researcher's own experiences and background. (Creswell, 2014, p.9)

Social constructivist research, unlike postpositivist research, does not always begin with a theory; throughout the research process theories or patterns of meanings are inductively developed (Stake, 2006; Merriam, 2009). Social constructivists recognise that as the research study progresses, the initial research questions are likely to change as they learn about the multiple meanings that participants make of an experienced phenomenon. They claim that researchers develop a better understanding of these multiple meanings by immersing themselves in the life of the participants involved in their studies. This enables researchers to see the world through the eyes of the participants. The knowledge generated from these studies is co-created between the researchers and the research participants. The close involvement of the researchers with the participants, contrasts with the detached stance of the postpositivist researchers. Research studies sitting in the social constructivist paradigm are typically qualitative. Conventionally, qualitative researchers make use of field observations, interviews, documentary analysis and reflective journals to collect and interpret data (Stake, 2006; Merriam, 2009).

The third category of philosophical paradigms proposed by Creswell (2014) includes the 'advocacy/participatory' or 'critical theory'. Researchers working within

these paradigms claim that both the postpositivist and the social constructivist paradigms neglect the political and ideological influences on knowledge and social reality (Giddens, 1976; Habermas, 1984). They further suggest that neither paradigm promotes the action agenda of marginalised or disenfranchised people in society. Advocates of critical theory argue that postpositivist and social constructivist studies “are essentially technicist, seeking to understand and render more efficient an existing situation, rather than to question or transform it” (Cohen, Manion and Morrison, 2007, p.27). Postpositivism seeks to explain social phenomena causally whilst social constructivism seeks to understand them. Critical theory research moves beyond the postpositivist explanations and the social constructivist understandings to challenge values and assumptions, and to change conventional social phenomena and social structures (Crotty, 1998). Critical theorists promote an action agenda to change and enhance the life of participants, the institutions where they work and the researcher’s life. Research studies within the critical theory tradition provide

...a voice for these participants, raising their consciousness or advancing an agenda for change to improve their lives. It becomes a united voice for reform and change. (Creswell, 2014, p.10).

Critical theory research therefore, tends to be intertwined with a political agenda; it promotes action to address social issues including inequality, poverty and domination. Critical research studies are typically of a qualitative nature involving close collaboration between the participants and the researcher. The participants act as co-investigators assisting in the design of the research questions, collection of data and its analysis.

‘Pragmatism’ does not distinguish between objective reality which is ‘out there’ in the world or the individual interpretations of the world. Pragmatists believe that the truth “is what works at the time” (Creswell, 2014, p.11). According to the pragmatic view, the truth is constantly debated and re-interpreted in light of its usefulness in new situations. Pragmatists use both objective and subjective perspectives to find the truth. They tend to study problems through an analysis of quantitative and qualitative data, that is, a mixed methods approach. Pragmatists claim that research studies adopting the mixed methods approach are more robust compared to either qualitative or quantitative studies, because they provide a broader understanding of a research problem that benefits from the strengths of both approaches. Researchers working within the pragmatic view agree that research occurs in social, historical, political, and other contexts.

After analysing the literature about the different philosophical underpinnings of the four paradigm categories, I concluded that the research questions will be answered through the social constructivist perspective. The reasons justifying the choice of the social constructivist paradigm are discussed in the next section.

3.3.1 A Social Constructivist Tradition

This research is based on the social constructivist assumption that “reality is constructed by individuals in interaction with the social worlds” (Merriam and Simpson, 2000, p.97). Human beings are initiators of their own actions; they create, modify and interpret the world. We take an active role in the construction of social reality and we view the world as a subjective reality. It is assumed that the personal experiences of academics help them develop their own meanings and interpretations of pedagogical practices at university. This study, therefore, does not subscribe to the postpositivist belief that reality is of an objective nature ‘out there’ in the world, implying that there is one ‘true’ description of university pedagogy. Instead there are multiple, subjective and varied meanings of pedagogy in HE.

This study is an investigative process where I immersed myself in the everyday teaching life of academics, seeing how they teach, and listening to their descriptions of teaching and learning. I entered the academics’ world, that is, in the lecture rooms and virtual classes (the study-unit areas in the VLE). These form part of the natural settings where academics operate their pedagogical practices. This approach is aligned to the social constructivist proposition that the individuals’ behaviour and interpretation of the world around them can be better understood by the researcher sharing the natural settings of the individuals involved in the study (Lincoln and Guba, 1985). A better understanding of the perspectives, meanings and experiences of teaching and learning at university was achieved through ongoing interactions and discussions with the participating academics. “The inquirer and the ‘object’ of inquiry interact to influence one another; knower and known are inseparable” (Lincoln and Guba, 1985, p.37).

The social constructivist researcher’s close interaction with participants in natural settings contrasts with the detached stance of the postpositivist researcher studying a controlled environment. While the postpositivist researcher is expected to conduct value-free investigations with specific procedures designed to isolate and remove all subjective elements and retain objective facts, this study subscribes to the

social constructivist claim that researchers bring in their personal values, assumptions and biases in their research (Lincoln and Guba, 1985). The researcher is expected to be explicit about the roles that personal values and biases play in the study. Personal values and biases play a role in the choice of the research problem, the choice of data collection instruments and the interpretation of data. These therefore, will be made explicit in Section 3.6.

The design of this study was also guided by the assumption that pedagogical practices must be understood as complex 'wholes' that are bound by context and time. This research is not an experimental study involving an isolated set of variables to determine whether these lead to changes in pedagogical practices of academics or not. Human behaviour is complex and in a constant state of mutual shaping, making it impossible to distinguish between cause and effect (Lincoln and Guba, 1985). An experimental approach would not provide a deep understanding of the actions of academics and their meanings of pedagogical practices because the teaching and learning environment is complex and inextricably bound to a specific context and time. Research within the social constructivist tradition seeks to understand rather than explain phenomena through cause and effect-oriented inquiries typical of postpositivist research.

Although part of this research involved a collaborative inquiry with academics to help them improve their pedagogical practices, there was no political agenda to bring about change in the professional practice of academics at an institutional level. The primary focus was on helping academics adopt informed pedagogical practices. This study cannot be viewed as participatory/advocacy research because it was not guided by a political agenda to examine the power relationships within the teaching and learning process to bring a broad social change at institutional level. However, it is acknowledged that individual changes and transformations may collectively lead to a broader social change. The wider implications of this research for policy and practice will be discussed in the final chapter of this thesis.

As indicated earlier, the social constructivist tradition typically uses a qualitative strategy of inquiry. This study involved predominantly qualitative data however the observational schedules involved quantitative data. The purpose and design of this study incorporated elements typical of qualitative research such as the researcher being a key instrument of data collection; most of the data collected was in the form of words; the research outcomes being viewed as process versus product;

and the research being focussed on participants' perspectives (Merriam and Simpson, 2000; Patton, 2002; Creswell 2007). There are distinct methodological traditions within qualitative research. The tradition that shaped this research will be described in the following section.

3.3.2 Case Study Research

The case study is a frequently used research methodology in the field of educational research. Various definitions, descriptions and designs of case study have been proposed. A review of literature shows that the case study is variously referred to as a methodology and/or method, a qualitative design, a qualitative case study, or an approach (Stake, 1995; Merriam, 2009; Simons, 2009; Creswell, 2014; Yin, 2014), making it important to clarify the sense in which this term is used here. This section therefore, starts with an overview of the different approaches to case study design proposed by three prominent methodologists in the field: Robert Yin, Robert Stake and Sharan Merriam. This overview is followed with a justification of the choice of the case study approach used to guide the design of this research inquiry.

Yin (2014) conceptualises case study research from a postpositivist perspective, defining it "as a form of empirical enquiry" (p.16). His definition focuses on the scope and the methodology of case study research, and the context of the case being studied. He defines the case study as "an empirical enquiry that investigates a contemporary phenomenon (the 'case') in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (Yin, 2014, p.18). He describes case study research as deterministic in nature with an emphasis on cause and effect, testing theories and hypothesis (deductively oriented), minimising subjectivity, using multiple methods, involving qualitative and quantitative data collection and analysis, and the search for generalisations (if required). This kind of case study can be viewed as quasi-experimental research, still guided by the principles of scientific research. According to Yin (2014), case study research differs from experimental studies, because the case is examined in context; in its "real world setting" (p.16). The purpose of the research and the relevance to the topic or issue of interest should determine the selection of the case or cases to be studied. He suggests that cases are selected to study similar findings (literal replication) or contrasting findings for predictable reasons (theoretical replication). Yin presents a highly structured and meticulous process for undertaking case study research where theories or formal propositions guide the

research process and are tested as part of the outcome. According to Yin (2014) the design of a case study should include five components: the study's questions; the study's propositions, if any; the study's unit/s of analysis; the logic linking the data to the propositions; and the criteria for interpreting the findings. He mentions six data collection tools: documentation, archival records, interviews, direct observations, and physical artefacts. Five main techniques are used to analyse data: (a) pattern matching; (b) explanation building; (c) time-series analysis; (d) programme logic models; and (e) cross-case synthesis. Yin (2014) acknowledges the limitations of objectivity in social science research and he therefore recognises the descriptive and interpretive elements in case study research. He acknowledges that the collection and analysis of data are influenced by the skills of the researcher. Yin (2014) also classifies variants of case study research as 'exploratory', 'descriptive', or 'explanatory'. The 'exploratory case study' is used to understand how a phenomenon occurs. Exploratory case study research aims to answer 'what' or 'who' questions and is often used as preliminary inquiry to 'explanatory case study' research. The 'descriptive case study' provides a detailed description or characterisation of the phenomenon in the context in which it occurs. The 'explanatory case study' seeks to explain causal links between the case and its context in a real-life situation; to prove or disprove a theory or hypothesis. Explanatory case study research aims to answer 'how' or 'why' questions. Yin (2014) notes however that a case study may have elements from two or more of these case study types.

Stake (1995) describes case study research from the constructivist and interpretivist philosophical perspectives. His definition of case study research focusses on what is studied (the case) rather than how it is studied (the methodology). Stake, similar to Yin, recommends that the selection of the case or cases is determined by the scope of the study and what the case/s can reveal about the topic of interest. A case may be selected because it is interesting in itself or it can provide a better understanding of an issue or phenomenon (Stake, 2006). As indicated in Section 3.3, the constructivist and interpretivist philosophers view reality as multiple and subjective, based on different interpretations. Although Stake (2006) acknowledges that case study research may have a quantitative element, he describes this research as generally qualitative in nature with an emphasis on meaning and understanding of experiences in context. He mentions four defining attributes of qualitative case study research: the case study is 'holistic', 'empirical', 'interpretive' and 'emphatic'. A 'holistic case study' provides an integrated understanding of the phenomenon and its context. Stake (2006) recommends thick

descriptions to describe the case and the findings of the study. 'Empirical' means that the researcher describes what is happening based on direct observation in the field. The researcher understands the case by experiencing "the activity of the case as it occurs in its context and in its particular situation" (Stake, 2006, p.2). The researcher uses multiple sources and methods of data collection, preferably observations, interviews and document reviews, to seek understandings and meanings (Stake, 1995). The 'interpretive' role of the researcher throughout the research process is essential in the discovery and generation of knowledge (Stake, 2006). The researchers' participation in the study and their interactions with the participants enable them to capture their interpreted reality of the case. The 'emphatic' dimension of case study research means that the researcher reflects on the vicarious experiences of the participants from their perspective. Stake, unlike Yin, proposes a flexible design of the case study, enabling the researcher to make changes as necessary throughout the research process. The data is analysed as this is being collected. Data analysis is "a matter of giving meaning to first impressions as well as to final compilations" (Stake, 1995, p.71). He proposes categorical aggregation and direct interpretation to analyse data. Stake (2003) also distinguishes between case studies according to their size and purpose. He classifies case studies as 'intrinsic', 'instrumental' or 'collective'. The 'intrinsic case study' focuses on describing and understanding the particularities of a specific case. The results or theories generated from the intrinsic case study may or may not necessarily be applied to society. The 'instrumental case study' is the study of the particular case "to provide insight into an issue or to redraw a generalisation" (Stake, 2003, p.137). The particular case is used as an instrument to develop a better understanding of an issue or phenomenon. The instrumental case study is used to generalise and extend findings of individual, discreet case studies. The 'collective case study' focuses on several cases of a similar type to establish some commonality and trend. The collective case study is an instrumental case study extended to multiple cases (Stake, 2003). Collective case studies are more likely to sacrifice the depth typical of individual case studies in favour of breadth.

Merriam's (1998) description of case study research is undergirded by the constructivist philosophy. As indicated earlier, researchers working within the constructivist paradigm assume that there are multiple and subjective realities that can be understood experientially and through social interactions. Merriam (2009) defines case study as "an in-depth description and analysis of a bounded system" (p.40). Similar to Stake, her definition focuses on the object of study (the case) and

on the products of research. Merriam (1998) describes case study research as 'particularistic', 'descriptive' and 'heuristic'. Case study research is 'particularistic' because every case study focuses on a specific situation, event, programme or phenomenon. Because of this particularistic attribute, the case study is appropriate to research practical problems. Case study research is also 'descriptive' because it provides a rich and thick description of the phenomenon under study. The end-product of the case study is a detailed description of the complexities of the phenomenon. The case study is also 'heuristic' because it brings new understandings of the phenomenon under study. The case study can also extend the researcher's experience of the phenomenon or confirm what is known about the phenomenon. Merriam (2009) describes case study research as being more qualitative than quantitative in nature. The methods used in qualitative case studies are aimed at generating inductive reasoning and interpretation rather than testing hypothesis. Merriam, like Yin and Stake, recommends that the selection of the case or cases is based on the research purpose and on what they can reveal about the topic of interest. The aim of case study research is to provide a rich holistic description to enable deep understanding of the topic of interest. Although Merriam's design of a case study is not as structured as Yin's, she recommends careful planning of the design and implementation of the case study. Merriam (1998) proposes five steps in the design of a case study: (a) conducting a literature review; (b) constructing a theoretical framework; (c) identifying the research problem; (d) developing the research questions; and (e) selecting the sample. She mentions three main data collection techniques used by case study researchers: (a) interviews; (b) observations; and (c) document analysis. For Merriam (1998), data analysis is the process of making meaning; it involves consolidation, reduction and interpretation of what people said and what the researcher has observed and read.

The diversity of definitions and understandings of case study research described above arise primarily due to the different philosophical orientations. Yin's case study design is underpinned by postpositivism whilst Stake's and Merriam's approaches are based on interpretivism and constructivism. Because of its ability to accommodate a range of philosophical traditions, case study research has been described as transparadigmatic (VanWynsberghe and Khan, 2007). Case study research "is not assigned to a fixed ontological, epistemological or methodological position" (Rosenberg and Yates, 2007, p.447). This ability to align with different philosophical positions is seen as an advantage because it enables researchers to use the case study to address research problems from different philosophical

positions. Despite these different perspectives however, all variants of case study share a number of common defining features. Researchers agree that the case study is an in-depth investigation from multiple perspectives of the complexity and uniqueness of a particular phenomenon in a real-life situation. The phenomenon can be a project, a policy, an institution, a programme, a system, an event or an individual (Simons, 2009). To capture the complexity and wholeness of the phenomenon, the researcher gathers the data from multiple sources. Case study research investigates a single case or a small number of cases intensively. When investigating multiple cases however, the researcher should still be able to investigate these intensively. The case-size should therefore be within those limits that permit the researcher to maintain an intensive focus on the case. When the case under investigation exceeds these limits, the research cannot be referred to as a case study.

Furthermore, the case/s should also have defined spatial and temporal boundaries. The areas included in the case being studied should be clearly defined; this is the spatial boundary. The case should also be delimited in terms of timing; it is necessary to define the beginning and end of the case study. Another defining characteristic of case study research is that it investigates the phenomenon in its natural setting; the phenomenon is context-dependent. This context-dependency requires a detailed description of the context. The spatial and temporal boundaries as well as the context-dependency of the case, implies that the case cannot be replicated as a whole. If the case study is replicated at another place or time, the context would change in some ways.

Another defining factor of case study research is that this may lead to theory generation. Some have argued against theorising from case study research because the case cannot be replicated given its context-dependency. Others have proposed different approaches of theorising from case study research. Ketokivi and Choi (2014) for example, proposed three theoretical contributions of case study research: (a) 'theory generation'; (b) 'theory testing'; and (c) 'theory elaboration'. 'Theory generation' case studies involve building inductive theories. 'Theory testing' case studies involve testing hypotheses derived from existing theories. 'Theory elaboration' case studies involve the development of existing theories.

After reviewing the defining characteristics and multiple perspectives of case study research, I will discuss the instrumentality of the case study for my research

enquiry. The discussion includes a justification for the choice of the case study approach used to guide the design of this research inquiry.

As indicated earlier in this chapter, the intent of this research inquiry is to explore the challenge of assisting academics to make pedagogically-informed uses of learning technologies. This research seeks to develop a better understanding of the issues surrounding this challenge through evidence obtained primarily from an online PD intervention on a small group of academics in a traditional campus-based university. Yin (2009), Stake (2005) and Merriam (1998) describe the case study as an in-depth investigation from multiple perspectives of the complexity and uniqueness of a particular phenomenon in a real-life context. The case study, therefore, provides an effective approach to investigate and develop a holistic understanding of the pedagogical practice of academics in relation to learning technologies within a real-life context from the perspective of the academics involved in this research. This research investigates how the pedagogical practices of academics can be affected by a PD course. The academics are observed in their natural settings; observing their class and online teaching, and observing their interactions during the PD course. This research is a holistic inquiry involving the collection of detailed data and multiple sources of data including direct observations, interviews and document analysis.

In this research, the case study was used to refer to what can be learnt about the PD course and the cohort of academics following this. The case study was used to provide a detailed account of (a) the pedagogical practices of the academics, (b) the design, development and delivery of the PD intervention, and (c) its effects on the academics' thinking about teaching. The PD course is a 'bounded system'; the course curriculum is unique and developed specifically by the researcher around the participants' needs; it is delivered at a particular university within a specific period of time and followed by a group of academics teaching undergraduate study-units. According to Stake's case study categorisation, this research is a single 'instrumental case study' because it involved an investigation of a specific PD intervention to understand its effects on the academics' thinking about teaching. Although this study provides a detailed description of the PD intervention it does not qualify as an 'intrinsic case study' because the PD intervention is used to learn about the academics' thinking about teaching.

As indicated in the previous section, epistemologically I am closely aligned to the social constructivist paradigm. I subscribe to the view that knowledge is

constructed through experience and social interactions resulting in multiple meanings and subjective realities. My philosophical stance is therefore aligned with the constructivist and interpretivist philosophies that inform Merriam's and Stake's case study research designs. This study does not follow the highly structured case study design proposed by Yin (2009) since this would impose limitations on innovations and flexibility throughout the research process.

After justifying this research study as an instrumental case study where the unit of analysis or case is the PD course, I shall present an overview of the context of this study and the researcher's background.

3.4 The Research Context and the Researcher's Background

The context of this research study is the researcher's workplace – a traditional campus-based university focussing on both teaching and research. This university has a population of 11,000 students and 2,000 academics (full-time and sessional staff). The recruitment of academics is based primarily on their subject-matter expertise – a discipline-based doctorate - rather than on their teaching experience. The career progression of academics in this institution is primarily based on research output in their subject disciplines. The institution does not have an academic development unit. The PD of academics in teaching and learning is implemented through a small team of academic developers external to the institution. In the past, the institution organised short seminars for academics on presentation skills, course design, assessment, academic integrity and plagiarism, etc. In-service PD days are also organised by academic departments. At the institutional level, the 'E-learning Unit' within the IT services department regularly organises technology-focussed training workshops.

As indicated in Section 3.3.1, the researcher is the primary instrument for both data collection and analysis in social constructivist research (Merriam and Tisdell, 2016). This requires the researcher to critically reflect on the choice of the research problem, the methods of data collection and analysis. Additionally, the researcher is also expected to be explicit about the roles that personal values and biases play in their research inquiry (Lincoln and Guba, 1985). In the remaining part of this section, I shall present my background, my role and personal values.

After finishing my first degree in teaching in 1995, I taught science subjects in a boys' secondary school for four years. In 2000, I resigned from being a teacher and took the post of a senior applications support officer at the IT services department of the university. I was promoted to deputy director and head of user services at the IT services department in 2007. My portfolio of duties includes the coordination of the 'E-Learning Unit'. This unit supports academics and students in using learning technologies including the institutional VLE, plagiarism detection software and classroom technologies. I regularly deliver workshops for academic staff related to the use of centrally supported learning technologies. In terms of my academic career, since 1996, I have delivered ICT in Education study-unit in the several programmes of study including: B.Ed (Hons.), Cert. (IT in Education) and Dip. (IT in Education). Between 2002 and 2005, I followed a masters by research programme in the area of ICTs in primary education. My dissertation involved an evaluation study of a 2-year diploma programme of study in ICT in education.

Although my present university duties are primarily of an administrative nature - leading and implementing technology projects, and managing technical staff and learning technologists - I am regularly involved in the delivery of technology-focused workshops attended by academics and support staff assisting in teaching and learning at university. I believe that university teaching and learning is informed by various theories of learning (instructionism, constructionism, socio-cultural learning and collaborative learning). All learning theories contribute in different ways and academics need to use these theories judiciously. It is my understanding that despite their preference for disciplinary research and lack of adequate PD, many academics are committed to provide quality teaching experiences to their students. I believe that academics can enhance the student learning experience through learning technologies. As indicated earlier, I have a central role in the promotion and uptake of learning technologies at my institution and I am always interested to learn about success stories of HEIs in this area. Although the university leadership expects me to promote learning technologies, however, I do take a take a critical view of the affordances of technology.

3.5 The Research Design

This section describes the study design: a qualitative case study approach. The design of this research, based in the social constructivist paradigm, is emergent

and flexible. Consequently, the research design described in this section was subject to modifications throughout the course of this study.

This research began in January 2012 and ended in August 2015. The initial stages of this study involved the identification and examination of the study setting. As indicated in the previous section, I coordinate the activities of the 'E-Learning Unit' including the organisation of workshops on the use of the institutional VLE. These workshops cover the use of basic features of the VLE such as posting study-unit descriptions and lecture notes, creating links to useful websites, embedding videos, communicating with students, etc. The primary focus of these workshops is the use of the VLE as a content repository for teaching material and for administrative purposes, which are intended to improve the 'efficiency' of the teaching and learning process. These workshops, however, do not cover any details of how the VLE can improve the 'effectiveness' of teaching and learning. Academics are therefore not being made aware of the potential of e-learning to improve the quality of the learning process and outcomes. Consequently, academics may not use e-learning technologies beyond improved access to teaching materials and enhanced communication with students. This provided an opportunity to address the research questions of this study. The purpose of this research was to explore how academic developers can assist academics in HE to make pedagogically-informed uses of learning technologies.

As described in Chapter 2, I conducted a literature review to learn about research in the area of learning technologies, teaching and learning in HE, and PD for TEL courses. The information gathered through this review was used to develop the research question addressed by this study. A review of literature was also conducted to inform myself about the methods of inquiry, data collection and analysis methods, and research ethics.

This study used three university teaching and learning frameworks: CF, CA and Col. These frameworks were discussed in Chapter 2. The CF was used to develop a classroom observation tool to analyse the teaching practices of the participating academics. The CF was also used to guide the design and the delivery of the different topics in the PD intervention. The principles of the CA theory were used to design and develop the learning resources/activities presented during the PD intervention. The Col was used to guide the delivery process of the PD intervention.

The initial stages of this study involved the review of literature to develop a methodology to research the problem area. The first stage of research involved the development and testing of a classroom observation schedule with one academic (Chapter 4). A checklist based on aspects of the CF was used to assist with the classroom observations of a study-unit taught by the academic. The study-unit description, the teaching and learning materials used in the study-unit and the use of learning technologies were analysed to understand the context of the pedagogical practices adopted by the academics.

The next stage of research involved the (a) recruitment of other academics in this study, (b) observations of their class-based teaching practices, (c) analysis of VLE usage and teaching-related documents, and (d) semi-structured interviews with the participants (Chapter 5). The main aim of this phase of research was to develop an understanding of the participants' pedagogical practices, their concerns about teaching including technology-enabled teaching to inform the design and delivery of an online PD course about teaching and learning technologies.

Desk-based research about the curriculum of TEL courses offered by educational institutions was carried out during the next research phase (Chapter 6). This, together with earlier literature findings about HE, models and frameworks for university teaching, TEL and academic development, and the description of the participants' teaching practices, informed the design and delivery of the first part of the PD intervention.

The next phase of this study involved individual interviews with the participants, and the design and delivery of the remaining part of the PD course (Chapter 7). The main aims of this stage were: (a) to understand better the participants' experience of the curriculum and format of the PD intervention and; (b) to identify their expectations for the remaining part of the PD course. This research phase provided evidence of the kinds of academic development activities that were helping the academics to change the way they think about their teaching.

3.6 Data Collection

The selection of participants and the data collection instruments used in this research study will be discussed in this section.

3.6.1 The Participants

In this research study, the bounded system or case investigated was a PD programme followed by academics in a traditional campus-based university. A purposeful sampling strategy was used to identify participant academics on this PD programme. Purposeful sampling (Patton, 2002) or criterion-based selection (LeCompte and Schensul, 2010) involves the selection of participants that richly inform the research inquiry. For this research, a purposeful sample of ten academics was recruited. Attendance records of past workshops that I delivered on the use of the institutional VLE and the plagiarism detection software, were consulted to identify potential participants that would be interested in participating in this research. A short-list of academics fulfilling the underlying criteria was drawn up:

- a) Academics who showed enthusiasm about technology and teaching during past workshops;
- b) Academics who have a full-time resident academic stream status;
- c) Academics in possession of a PhD; and
- d) Academics teaching undergraduate study-units.

There were no gender or departmental criteria for participant selection. Reference was made to the staff profiles on the university website to ensure that the short-listed academics fulfilled the selection criteria (b), (c) and (d).

During the planning stage of this research, it was determined that this study was going to involve participation over a prolonged period of time. The participants' motivation to improve their teaching with technology was therefore considered to be an essential selection criterion. Given that this study involved a PD intervention that required a significant commitment from participants, I avoided academics who were undertaking doctoral studies. Academics teaching undergraduate study-units were involved because the CF is mainly applicable to this level (Laurillard, 2002). The academics who met the above criteria were approached to participate in the study, and data collection began after receiving the approval letters from the research ethics committees of University College London Institute of Education and my institution. The protocol used to approach the participants is described in chapters 4 and 5.

3.6.2 Data Collection Methods

As indicated earlier, this research uses a qualitative case study methodology. Different types of qualitative data were collected through observations, interviews of participating academics and analysis of teaching-related documents.

Observations

Data obtained from class observations can be used productively for a variety of purposes, including professional development, assessment and evaluation of teaching, and research. Class observations in the HE sector are generally used to support the development of academics (O'Leary, 2012). For example, PD programmes may involve academic developers or senior lecturers observing the class teaching of academics. The primary purpose of these observations would be to determine and improve the teaching competencies of academics. In a less formal context, academics may also participate voluntarily in 'peer observation' or 'peer review'. The academics "agree to observe 'each other's teaching to enhance teaching quality through reflective practice, thereby aiding professional development" (Shortland, 2004, p.220). These observations promote critical reflection and professional dialogue about teaching practices among peers (O'Leary, 2012). Less commonly, there are also observations linked to quality assurance requirements for greater accountability. In some HEIs, observations of class teaching are used to identify underperformance, to confirm probation and to promote academics. In educational research, class teaching observations can serve multiple purposes. Observations enable the researchers: (a) to study the teaching practices in a naturalistic setting; (b) to provide more detailed and precise evidence of what happens in class than other sources of data permit (e.g. interviews, teaching and learning resources and module descriptions); (c) to stimulate change and verify that the change occurred; and (d) to contribute to the knowledge base about effective teaching (Zaare, 2013).

A variety of observation procedures (e.g. rating scales, teaching inventories and narrative descriptions) are used to learn about the teaching practices of academics. Some observation protocols and teaching inventories that have been used and researched extensively in HE include: Teaching Dimensions Observation Protocol (Osthoff *et al*, 2009), Reformed Teaching Observation Protocol (Piburn *et al*, 2000), Approaches to Teaching Inventory (Trigwell and Prosser, 2004), Teaching

Practices Inventory (Wieman and Gilbert, 2014) and Classroom Observation Protocol for Undergraduate STEM (Smith *et al*, 2013). This research study uses a new class observational schedule based on the CF – a widely used framework in terms of the design of technology-enabled teaching at undergraduate level. The other observational schedules were not used because these have not been used for the introduction of technology-based teaching which is the topic of this research study. Given that this research is advocating for pedagogically-informed uses of technology, in terms of consistency, a decision was made to develop an observational schedule based on a framework that supports technology-enabled learning.

This research study involved observations of teaching and learning activities in the classroom and in the online environment. These observations focussed on the pedagogical practices and the use of learning technologies by academics. I did not intervene in any way during the class observations. These non-participant observations were of a semi-structured type. A checklist based on aspects of the CF was prepared in advance to organise the observation sessions (Appendix N). Field notes were taken to record events and critical incidents that were thought to be relevant for the purpose of this research study (Appendix O). In addition to the checklist and field notes, these observations were also audio-recorded. Observing each academic in class over a semester required a significant amount of the researcher's time. This issue was addressed by looking for saturation, that is, the observation sessions were ended when these were not yielding new data or insights relevant to the research questions. The class observation protocol and the observational checklist will be discussed in detail in chapters 4 and 5.

The participants' interactions during the online PD intervention were also observed. During the PD course, I became part of a community of academics reflecting about their pedagogical practices and how these could be enhanced through the use of learning technologies. The topic forums of the PD course produced an automatic transcript of the interactions between the participants. The forum postings for each topic were copied in a text document for analysis purposes (Chapter 3.7). All identifiable information from these documents were removed and pseudonyms were used to preserve the participants' anonymity.

Compared to interviews, the observations enabled me to explore what academics actually did in class and the online environment rather than what they say they did in these environments. According to Robson (cited in Cohen, Manion and

Morrison, 2007, p.396), “observation provides a reality check”. Field observations also enabled me to capture rich, in-depth qualitative data consisting of both verbal and non-verbal interactions. It is acknowledged however, that there are issues with the credibility of observational data. The inter-rater reliability for example, was not a priority in this study because the observational schedule was not used to make strong claims about the teaching practices typical to the wider population of university lecturers. For the purpose of this research study, the observational schedule was used to inform the discussions with the participants during the interviews. The observational schedule was only providing a picture of the typical teaching practices of the academics participating in this research.

Interviews

Interviewing is a data collection technique that is commonly used in qualitative research studies. The research interview is “a process in which a researcher and participant engage in a conversation focused on questions related to a research study” (deMarrais, 2004, p.54). The participant is interviewed to collect data that cannot be directly observed such as feelings and past events. Interviewing is useful to understand a phenomenon from the participant’s perspective including how and why the participant has come to that perspective (Kvale, 1996).

Interviews vary in type and structure. There are different types of interviews: one-to-one, focus group and online interviews. Interviews are also distinguished by the amount of structure: highly structured, unstructured and semi-structured interviews (Merriam and Tisdell, 2016). In the highly structured or standardised interview the wording and order of questions are pre-determined. The unstructured or informal interview has a conversational format where the researcher asks open-ended questions. The researcher generally uses this type of interview to explore and learn about an unknown phenomenon. The unstructured interview may be used as a pilot interview to formulate questions for later interviews. The semi-structured interview includes a set of flexibly worded questions, or a mix of highly structured and less structured questions. Some questions in the semi-structured interview may be standard; to collect specific data required from the participants. The remaining questions would be used flexibly in terms of the wording and order. This interview format allows the researcher to probe further in a responsive and dynamic way, depending on the responses of the respondent.

In this research study the semi-structured interview format was used. Two sets of one-to-one interviews were organised. Each academic was interviewed after the class observations, that is, prior to the beginning of the PD intervention. The first set of interviews focussed on existing pedagogical practices, the teaching and learning material used etc. These interviews also served to clarify the questions that I had after undertaking the class observations and the document analysis. The second set of individual interviews was organised during the PD course to learn about the participants' experience of the first part of the course and their expectations of the remaining part of the PD course.

One-to-one interviews were conducted in preference to focus group interviews so that the participants feel less anxious discussing their teaching practices. Academics may feel uncomfortable discussing some aspects of their class practices in front of other academics during focus group sessions. Most of the interviews were conducted in the participants' offices at a time when the interviews would not be interrupted. Interview schedules listing the questions to be covered with each participant were used to guide the interviews (Appendix E and Appendix K). The participants were encouraged to speak freely about all the questions in the interview schedules. The interviews were audio-recorded. The recording of the interviews enabled me to concentrate on the participants' responses and to probe further data as necessary. A headset, the Express Scribe transcription software and a word processor were used to prepare an orthographic or verbatim transcription of all the interviews (Appendix P). Some interviews contained sections that required translation from Maltese to English. All interview transcripts were thoroughly checked with the audio files to ensure that these offer an accurate representation of what the participants said without omissions. I copied each transcription to a separate document file and removed all identifiable information. Pseudonyms were used to protect the anonymity of the participants. The non-anonymised transcript documents were password protected and stored for future reference. The transcriptions were generally done soon after each interview.

Document Review

Another source of data used in this study was document review. According to Bowen (2009), documentary material can serve different purposes in a research study. Documents can provide a broader understanding of the background and context within which research participants function. The information in documents

may suggest additional questions to be asked in interviews and situations that need to be observed. Information derived from documents will supplement the knowledge base of the research study. Reviewing documents can also enable the research to track changes and development. Documentary material can also be used to verify findings or corroborate evidence from other sources. Compared to other data collection methods, document review is an efficient and cost-effective way to obtain data; this involves data selection rather than data collection (Bowen, 2009). Moreover, documents are 'unobtrusive' and 'non-reactive', that is, the content of the documents is independent of the research study (Bowen, 2009).

For the purpose of this research inquiry the study-unit descriptions, the teaching, learning and assessment materials were analysed to develop a better understanding of the context of the pedagogical practices adopted by academics. These materials were available in print or electronic (computer-based and Internet-transmitted) format. The review of these documents supplemented the class observations and suggested questions when interviewing some participants. These materials were referred to in the interview sessions with the participants.

The next section describes the process that was followed to manage and analyse the participants' forum posts during the PD course and the data collected from the mid-course interviews.

3.7 Data Analysis

Before explaining the process followed to analyse the data, a brief overview of the main research activities of this study will be presented. This study involved five phases of research activity (Table 3.1). The first phase involved the development and testing of a class teaching observation schedule (Chapter 4). The second phase involved a set of class observations and individual interviews with ten participants (Chapter 5). The analysis undertaken during phase 1 and 2 involved consolidating, reducing, and interpreting the data collected from the observations of class teaching and VLE usage, teaching-related documents and interviews. The empirical work undertaken during phases 1 and 2 informed the specification and development of the curriculum of the PD course.

The remaining phases involved the delivery of the PD course and another set of individual interviews (Chapter 6 and 7). The participants' posts in the topic

forums of the PD course (Phase 3 and 5) and the mid-course interviews (Phase 4) were analysed following Braun and Clarke’s (2013) approach to thematic analysis. The analysis of data is presented in Chapter 6 and 7 and the interpretation of the analysis is presented in Chapter 8.

Table 3.1: Research activities

Phases	Activity	Chapter
1	Development and testing of class observation schedule	4
2	Class teaching observations and interviews	5
3	Design and delivery of PD course (Part A)	6
4	Interviews (mid-course)	7
5	Design and delivery of PD course (Part B)	7

Data analysis is the process of ‘making sense’ and ‘making meaning’ out of the collected data to find the answers to the research question/s (Merriam and Tisdell, 2016, p.202). Braun and Clarke (2013) describe thematic analysis as a process of identifying, analysing and reporting patterns of shared meaning or themes within qualitative data in relation to the research questions. They emphasise the theoretical flexibility of thematic analysis identifying this approach as an analytic method rather than a methodology. Thematic analysis does not prescribe data collection methods, theoretical positions, epistemological or ontological frameworks (Braun and Clarke, 2013). The thematic analysis approach has been used widely to address different kinds of research questions within a range of theoretical frameworks (Braun and Clarke, 2013, Nowell *et al*, 2017). It has been used also to analyse different types of data including documents, videos and interviews. The data analysis process was recursive and interactive; moving back and forward between the two datasets (the participants’ forum posts and the mid-course interviews) and the preliminary conclusions reached at different stages of this research. The data was analysed at both the ‘semantic level’ and the ‘latent level’ (Braun and Clarke, 2013). At the semantic level, the researcher describes the data (what the participants wrote in forums or said during the interviews) and organises this to show patterns. The theme development at the semantic level reflects the explicit content or surface meanings of the data. At the latent level, the researcher moves from describing and organising the data to interpreting and explaining the data. The analytic process here involves theorising the significance of patterns in the data and their implications to the research questions. Braun and Clarke (2013) propose seven stages of activity when undertaking a thematic analysis (Table 3.2).

Table 3.2: The stages of Thematic Analysis (Braun & Clarke, 2013)

Stage	
1	Transcription
2	Reading and familiarisation; taking note of items of potential interest
3	Coding – complete; across the entire dataset
4	Searching and identifying themes
5	Reviewing themes (producing a map of the provisional themes and subthemes, and relationships between them – aka the ‘thematic map’)
6	Defining and naming themes
7	Writing – finalising analysis

The first stage of the thematic analysis framework involved the transcription of the interviews held during the PD course to prepare the data for systematic coding and analysis. As explained in Section 3.6.2, the transcription process involved the conversion of the audio data to text by typing what the participants said. The participants’ forum posts did not require transcription since these were already in text format. As indicated earlier the forum posts were copied in a word processor document for analysis purposes.

The second stage involved familiarising myself with the data through repeated careful readings of the interview transcripts and the participants’ forum posts. The self-transcription of interviews facilitated my close reading and reflexive analysis of the interview data (Lapadat and Lindsay, 1999). As I read through the data I took note of overall impressions, conceptual ideas and issues that were potentially relevant to the research questions (Appendix P).

The next stage of thematic analysis involved the generation of the initial codes from the data. A 'complete coding' approach was adopted during this phase of data analysis. All forum posts and interview transcripts were examined, and concise phrases were assigned to all data items that were of interest to answer the research questions (Appendix Q). Repeated reading of the data was required to ensure inclusive and comprehensive coding of the data. This analysis phase generated semantic and latent codes. The semantic codes or ‘data-derived codes’ reflected what the participants wrote in forums or said during interviews. The latent codes or ‘researcher-derived codes’ move from the description of what the participants wrote and said to the implicit meanings within the data. “This separation between semantic and latent codes is not pure; in practice codes can and do have elements of both”

(Braun and Clarke, 2013 p. 207). Merriam and Tisdell (2016) describe this phase of analysis as 'open coding' or 'descriptive coding'.

The fourth stage involved the sorting of the different codes into potential themes that were relevant to answer the research questions. According to Braun and Clarke (2013), a theme "captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set" (p.82). This process of grouping codes is also referred to as 'axial coding' (Corbin and Strauss, 2015) or 'analytical coding' (Merriam and Tisdell, 2016). During this stage, some codes, for example those associated with feedback on specific learning resources or activities in the PD course, were discarded because these were not directly related to the research questions.

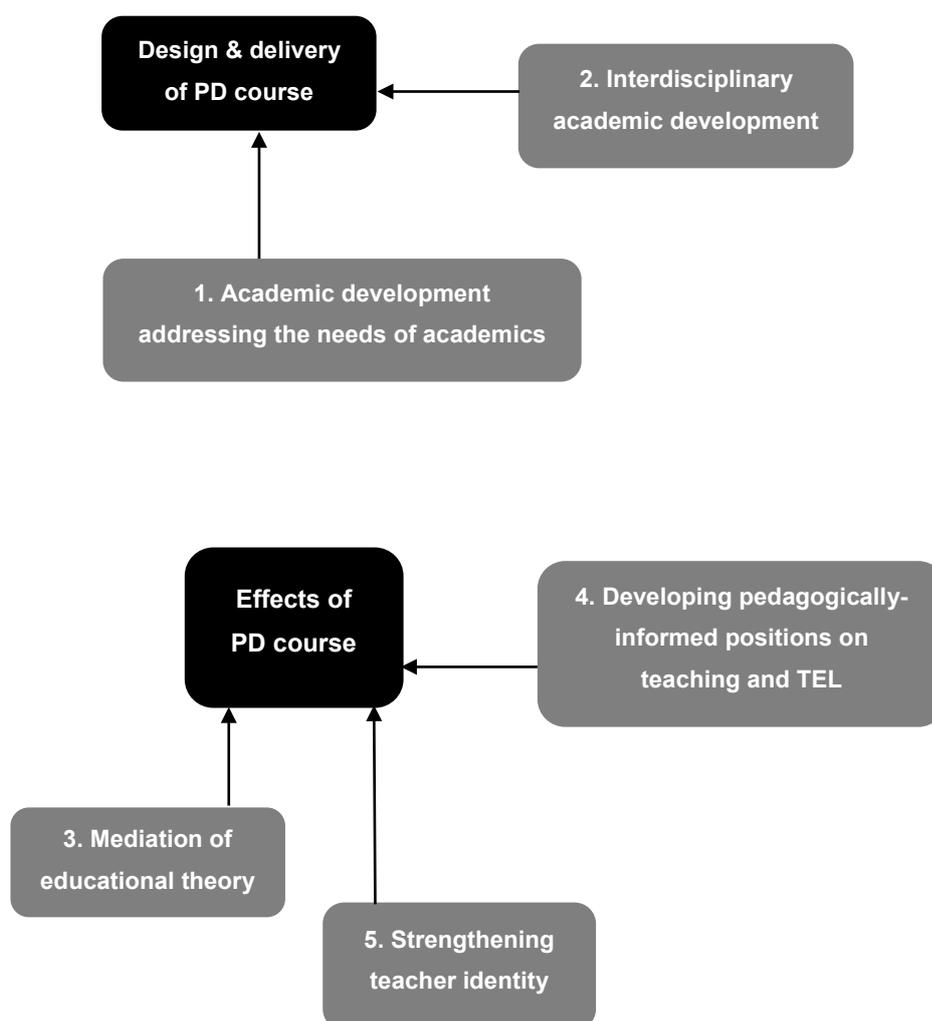
The fifth phase of the thematic analysis involved reviewing, modifying and developing the preliminary themes to confirm if these 'work' in relation to the coded data extracts from the forum posts and the mid-course interviews. Themes which did not have enough data to support them were discarded. Other themes with a substantial overlap were collapsed into a single theme. Broad themes were also split into separate themes. For example, one of the preliminary themes identified during the early stages of data analysis was 'barriers to changes in teaching' with these codes: (a) 'lack of time to follow training', (b) 'reasonable time-frames for completion of course activities', (c) 'increased workload associated with technology-based teaching'; (d) 'institutional policies and departmental cultures', (e) 'students' response to technology-based teaching' and (f) 'lack of technical skills'. The candidate theme 'barriers to changes in teaching' was discarded and its associated codes were integrated into other themes. 'Lack of time to follow training' and 'reasonable time-frames for completion of course activities' were merged into the code 'flexible academic development' under the theme 'academic development addressing the needs of academics'. The other codes (c) to (f) were merged into the code 'reflections on technology-based teaching' under the theme 'developing pedagogically-informed positions on teaching and TEL'. Therefore, this stage of data analysis essentially involved a quality check of the themes in my research study. It should be noted that the identification of themes is an active and interpretive process; themes do not emerge from the data fully formed (Braun and Clarke, 2013). This analytic process led to the identification of five themes (Table 3.3) that were relevant to the research questions. Two overarching themes - 'Design and delivery of the PD course' and

'Effects of the PD course' - were identified and presented in a visual thematic map, showing their relationship with individual themes (Figure 3.1).

Table 3.3: Table of themes showing selected associated codes

THEME 1: Academic development addressing the needs of academics
1.1 Flexible academic development.
1.2 Just-in-time academic development. <ul style="list-style-type: none">▪ <i>Learning needs addressed during the course.</i>▪ <i>Learning needs addressed during the interviews.</i>
1.3 Activities related to the teaching context. <ul style="list-style-type: none">▪ <i>Immediate change in teaching practice.</i>▪ <i>Valuing learning activities that are closely related to their teaching context.</i>
THEME 2: Interdisciplinary academic development
2.1 Sharing teaching practices from different disciplines. <ul style="list-style-type: none">▪ <i>Intention to adopt new teaching strategy in their subject.</i>▪ <i>Intention to engage in peer class observation.</i>▪ <i>Valuing interdisciplinary PD.</i>
THEME 3: Mediation of educational theory
3.1 Connecting educational theory to practice. <ul style="list-style-type: none">▪ <i>Activities supporting reflections on educational theories.</i>▪ <i>Applied educational theory to teaching practices.</i>▪ <i>Intention to adopt teaching practices based on newly acquired knowledge of educational theory.</i>▪ <i>Valuing educational theory.</i>
THEME 4: Developing pedagogically-informed positions on teaching and TEL
4.1 Student experience of technology-based teaching.
4.2 Peer Learning. <ul style="list-style-type: none">▪ <i>Learning through discussions.</i>▪ <i>Peer encouragement & support.</i>
4.3 Reflections on conventional teaching practices. <ul style="list-style-type: none">▪ <i>Intention to change teaching practices.</i>
4.4 Reflections on technology-based teaching. <ul style="list-style-type: none">▪ <i>Pedagogical benefits of technology-based teaching.</i>▪ <i>Barriers to change teaching.</i>
THEME 5: Strengthening teacher identity

Figure 3.1: Overarching themes and themes



During the sixth phase, further analysis was undertaken to refine each theme. All data extracts relevant to each theme were collated. The data extracts that were going to be quoted in the data analysis chapters (Chapter 6 and 7) were also identified. (Appendix R).

The final phase of the 7-step thematic analysis framework is the 'writing-up' (Braun and Clarke, 2013). This phase involved the writing of the data analysis (Chapter 6 and 7) and the interpretation of the analysis in the discussion and conclusion (Chapter 8 and 9) of this thesis. Representative quotations identified during the previous stage of thematic analysis were embedded within an analytic narrative to tell the reader a coherent and persuasive story about the data. The quotations were included in the narrative to evidence the analytic claims and to

support the readers of this thesis to judge the 'fit' between the data and my interpretation of the data. The analytic narrative was also contextualised in relation to the findings of the literature review.

3.8 Rigour of Research

A research study must be rigorously conducted so that other researchers will have confidence in the inquiry process and the findings of the study (Merriam and Tisdell, 2016). Rigour enhances the trustworthiness of a research study. The rigour and trustworthiness of this qualitative research will be discussed with reference to Merriam and Tisdell's (2016) criteria: (a) internal validity, (b) reliability and (c) external validity. The strategies used in this research to address the concerns related to these criteria will also be presented.

The 'internal validity' is the extent to which the findings of the research study match reality. Ensuring internal validity enhances the credibility of a study (Lincoln and Guba, 1985). The following strategies have been used to enhance the credibility of this case study research: (a) triangulation, (b) adequate engagement in data collection, (c) researcher's position or reflexivity and (d) professional review. According to Patton (2002), triangulation is a powerful strategy for increasing the credibility or internal validity of the research. In this research study, triangulation was achieved through the use of multiple methods of data collection and multiple sources of data. The data collected through the interviews were compared to what I observed in class and read in the documents relevant to the pedagogical practices. Three methods of data collection – interviews, observations and documents - were used to achieve triangulation. Furthermore, I compared and cross-checked data collected through multiple class observations of each academic and follow-up interviews with each academic. Therefore, triangulation was also achieved through the comparison of multiple sources of data. Another strategy used to increase the internal validity of my research findings involved prolonged engagement in data collection. I invested time observing the teaching and learning activities to achieve a deeper understanding of what is happening in the classroom and online environments. As indicated in Section 3.6.2, the observations ended when the data became 'saturated'. Prolonged engagement in the research setting also enabled me to establish good rapport and trust with participants, and therefore gain greater access to insider knowledge. The third strategy used to address the concern of internal validity involved documenting my philosophical orientation, experiences, biases and assumptions regarding my

research study (refer to Section 3.3, 3.4 and 3.5). Being explicit about my assumptions, biases and background, would help the readers of this research study to understand better my interpretation of data and how I arrived to the research findings. Throughout the course of this research, I engaged into many professional discussions with my thesis supervisor 'regarding the process of the study, the congruency of the emerging findings with the raw data and the tentative interpretations' (Merriam and Tisdell, 2016). The doctoral research process involved continuous review and feedback on the methodology and the analysis and interpretation of the collected data.

The 'reliability' of a research study refers to the extent to which the research findings can be replicated (Merriam and Tisdell, 2016). In qualitative research, it is almost impossible to end up with the same findings when repeating a study, even when this involves the same researcher, the same research process, the same context and the same participants. Tracy (2013) claims that "socially constructed understandings are always in process and necessary partial" (p.229) because the context evolves and the life experiences change the participants. Throughout this research, I was constructing my meaning and interpretations of the data collected through observations, interviews and documents reviewed. As a social constructivist researcher, I acknowledge that replicating this case study may not necessarily lead to the same interpretations of data and the same results. In qualitative research, different findings do not necessarily imply that the studies are unreliable. Reliability claims can be made when the research findings are consistent with the data collected, that is, the claimed findings make sense given the data presented. Merriam and Tisdell (2016) propose the following strategies to enhance the reliability of qualitative research: (a) triangulation, (b) investigator's position (c) peer examination / professional review, and (d) audit trail. As explained earlier, triangulation, the investigator's position and professional review have been used to address concerns related to the internal validity of my research.

The 'external validity' is the extent to which the findings of one study can be applied to other situations Merriam and Tisdell (2016). Transferability or generalisability of a research inquiry has to do with the possibility of applying the research outcomes to other contexts. Qualitative researchers cannot generalise the outcomes of their research to groups or contexts beyond those involved in their study. The outcomes of this case study research at a specific university cannot be assumed to be representative of other HEIs elsewhere. Nevertheless, readers of this research

can transfer aspects of this study to their own settings. Academic developers, administrators and academics at other universities may find aspects of this research useful to their context. To facilitate the transferability of research knowledge, I provided rich, thick descriptions of the research context, the participants, the data collection methods and the thematic analysis of the data. Adequate evidence was also presented in the form of quotes from participants' interviews (Appendix P), participants' activities and postings in the VLE (Appendix S), class observation schedules (Appendix N) and field notes (Appendix O).

The next section discusses the limitations of this research study.

3.9 Limitations of the Research

As indicated earlier, it is acknowledged that there are credibility issues with observational data. It is impossible to capture data about all classroom events and interactions. Moreover, the captured data is filtered and interpreted according to the researcher's biases, perspectives and experiences. These interpretations are then recorded in the research study. The issue of credible observational data was addressed through the systematic planning of observations and audio recording of observations. Furthermore, the data collected during observation sessions was confirmed through the use of interviews and document analysis.

Due to ethical implications, the participants were provided with detailed information about the nature of this research and the significance of class observations in this study. This approach however, does raise an issue with the behaviour of academics when they are aware about the purpose of the classroom observations. Academics may feel anxious when they are observed, behaving better or worse than they normally do. They may also behave in ways that match the expectations of the researcher. Similarly, during interviews, some participants may tailor responses that align neatly with the objectives of research. Efforts were made to build a relationship of mutual trust with all participating academics so that they act naturally during class observations and interviews.

The voluntary involvement of the academics in the study implies that the participants are motivated to learn about the use of learning technologies in teaching. It is therefore acknowledged that the outcomes of this research are based on academics that are intrinsically motivated to improve their pedagogical practices.

Other limitations of this research study will be discussed in the Chapter 9.

3.10 Ethical Considerations

Reference was made to the British Educational Research Association (BERA, 2011) guidelines to address the ethical issues in this study. The Association sets out guidelines in terms of the researcher's responsibilities to: (a) participants; (b) sponsors of research; and (c) the community of educational researchers.

As indicated earlier, the context of this study is my workplace. The participants of this study were academics who make use of the e-learning service that I coordinate. This study is therefore classified as 'insider research'. I had a professional role and a student researcher role during this study. During the course of this research, the two roles may conflict, leading to ethical implications. The ethical considerations pertaining to insider research are discussed below.

There were no power relationships between the participants and my professional role. The participants were users of the e-learning service that I coordinate. Conducting research with service users can present a threat to voluntary participation. The participating academics were assured that their voluntary involvement and withdrawal from this study will have no bearing on the quality of e-learning service that they will receive in the future. Participants were also informed that they can withdraw their participation from the study at any time and for whatever reason without explanation or penalty.

The data collected during this study was kept confidential and measures were taken to store this securely. Pseudonyms were used throughout this study to protect the participants' identity. However, the participants were informed that the institutional anonymity could not be fully guaranteed. Readers of this thesis would be able to identify the institution through a simple Internet search using my name. The participants were also informed that the data was being collected for the purpose of this research study and future publications in this field.

By virtue of my role as an e-learning coordinator, I have access to the teaching and learning material on the institutional VLE. However, this role does not mean that this data can be accessed without due consideration of the ethical implications. Throughout this research study I distinguished between my professional

role and my student researcher role. Clearance to proceed with the study was sought from the research ethics committees of University College London Institute of Education and my institution. Moreover, the Chairman of IT Services Management Committee, and the Chief Information Officer and Executive Director of IT Services were informed about the use of the VLE for the purpose of this research study.

Prospective participants were provided with a participant information sheet and a consent form containing details about the purpose of the study, participant selection criteria, participation commitments, benefits and discomforts for participants, and details about privacy and confidentiality (Appendix A). It was ensured that participants fully understood the content of the information sheet and signed the consent form.

3.11 Summary

This chapter presented a rationale for placing the study within the qualitative research paradigm specifically the social constructivist tradition. The justification for adopting the case study as the methodology of investigation was also presented. Techniques for conducting the study were outlined. These included: (a) observations of the participants' class teaching and their engagement with an online PD course; (b) interviews and; (c) a review of teaching and learning documents. The criteria used to select participants were also described in this chapter. The thematic analysis approach used to analyse the data was also documented. The data analysis section ended with the presentation of five themes that were relevant to the research questions (Table 3.3). This chapter ended with a discussion of the limitations and ethical considerations of this study.

Chapters 4 and 5 will present the process that was followed to understand the teaching practices and the learning needs of the participating academics to inform the curriculum of the online PD course. Chapters 6 and 7 document the delivery of the PD course and the analysis of the participants' engagement with the course. The thematic analysis of the participants' forum posts and mid-course interviews is presented in Chapters 6 and 7. The interpretation of the thematic analysis is presented in Chapter 8.

Chapter 4: Developing a Methodology for Observing Teaching

4.1 Introduction

Chapter 3 described the exploratory case study methodology adopted for this study. This chapter presents the design and testing of a methodological approach to learn about the pedagogical practices of academics. The experience and reflections from this research phase (January to May 2012) were used to guide the classroom observations documented in Chapter 5. This research phase also provided initial insights into the research context.

4.2 Designing the Class Teaching Observation Schedule

The review of literature about the aims of HE, the models and frameworks for university teaching, TEL in HE and academic development for TEL (Chapter 2) contributed to the initial planning phase of this research. The purpose of this desk research was to find out what is already understood about these themes and to develop the questions (refer to Section 3.2) that would be addressed by this research study. The next planning phase involved devising a methodological approach to collect and analyse data about the teaching practices of academics. This approach was piloted with one academic.

Direct (class teaching observations) and indirect (interviews and document review) methods of collecting this data were considered. Getting academics to talk about their classroom teaching practices may not always provide a faithful picture of what really happens in class. Argyris, Putnam and McLain Smith (1985) claimed that academics may express attitudes and beliefs about teaching ('espoused theories' or 'theories of action') that may not be necessarily coherent with their actual classroom practices ('theories-in-use'). Analysis of documents and artefacts (e.g. study-unit descriptions, learning resources and assessments) may provide evidence of the intended teaching practices. These documents however, do not always reveal details about the lecturer's teaching strategies. The study-unit descriptions for example, may have little detail beyond the list of topics covered during the lectures and the mode of assessment. There may also be inconsistencies between what is stated in these documents and what actually takes place in class.

Any serious attempt to characterise a teacher's conception of the discipline he or she teaches should not be limited to an analysis of the teacher's professed views. It should also include an examination of the instruction setting, the practices characteristic of that teacher, and the relationship between the teacher's professed views and actual practice. (Thompson, 1992, p.134)

A decision was therefore taken to collect data about academics' pedagogical practices directly through classroom observations.

At an early stage, I ruled out an open observation method where I will record everything that happened during the lecture on a blank sheet of paper and then analyse this data after class. Instead, I opted for a systematic observation method that involved the use of a checklist to help me collect information about the lecturers' teaching practices. As indicated in Chapter 2, the CF offers a comprehensive account of the kinds of teaching that should lead to an enhancement in the student's learning experience (Laurillard, 1996). The CF is particularly useful for undergraduate education and applicable to all disciplines (Laurillard, 2002). This framework can be used to evaluate both conventional classroom-based learning and technology-based learning (Laurillard, 2002). It has been particularly influential on thinking about the choice and use of digital technologies for learning. Given these claims about the CF and its potential to describe university teaching and learning, I decided to use this framework to guide my classroom observations. A checklist of the elements of the CF was drawn up to help me record those elements that featured during each teaching session. This checklist was a valuable tool that helped me retain focus during classroom observations.

The next section presents a description of the classroom observations and the piloting of the CF checklist. It should be noted that the interpretation of data and the ethical considerations related to this phase of research followed the processes reported in Chapter 3.

4.3 Piloting the Class Teaching Observation Schedule

In January 2012, I contacted an academic, Nathan¹, to assist me in my research study. In the past Nathan followed workshops that I delivered on the basic

¹ Pseudonyms are used throughout this research study to preserve the confidentiality and anonymity of the participants.

use of the VLE and the plagiarism detection software. I organised a meeting with him to explain my research study and proposal to observe one of his classes. He agreed without any hesitation to have his teaching observed. We organised the signing of the consent form (Appendix A), which had been approved by the research ethics committees of University College London Institute of Education and my institution (Chapter 3). The classroom observations took place between February and May 2012.

Prior to the first classroom observation, Nathan provided me with background information about the study-unit and gave me permission to access the learning resources of the study-unit on the VLE. This provided a context to the teaching sessions that I was going to observe. We agreed that at the beginning of the first classroom observation, Nathan would introduce me to the students and inform them that I will be observing his teaching and interactions in class.

I attended classes as a passive participant and tried to be as unobtrusive as possible during observations. I usually arrived 5 minutes before the start of each teaching session and sat quietly at the back of the classroom. I never participated in any way - the focus was exclusively on observing the lecturer's and the students' interactions. I sat in class for the entire duration of each lecture, which was 1-hour long. There were no indications that my presence in class created any discomfort to either Nathan or his students.

The main purpose of the classroom observations was to evaluate how well the checklist would capture the pedagogical practices of this academic. The first draft (Appendix B) of this checklist featured (a) a list of interactions at the discursive and experiential levels and, (b) a list of adaptive and reflective processes as depicted in the CF. During the first two classroom observations, I added relevant notes in the appropriate sections of the checklist. These notes were a description of what was observed in class. After these initial observations, I noticed that at the end of each lecture the CF checklists contained notes in the discursive and experiential sections but they lacked notes in the sections related to the lecturer's and students' adaptive and reflective processes. The pilot observations showed that the CF checklist cannot be used to capture the lecturer's and students' adaptive and reflective processes. These internal processes cannot be observed in a social setting. Consequently, after the first two class observations, I amended the checklist by removing the sections related to the adaptive and reflective processes. The checklist (Appendix B) was also

amended to include a table of timings spanning over 1 hour with 2-minute intervals. This time log was introduced in the checklist to capture some quantitative data related to the different interactions during each teaching session. Additional notes (Appendix B) were included in the observational schedule to help me record details about the class layout, the lecturer's organisation and instructional aids, the lecturer's rapport with students, questioning and discussions. These notes provided me with a richer description of each lecture.

In addition, to the use of the observational checklist, each lecture was also audio-recorded. Initially the plan was to use these recordings to analyse the class interactions however, I hardly referred to these recordings – effectively I could have done without these recordings for the purpose of this study. During and after each observation session, I wrote notes about those events that were considered relevant for my research study. Notes were generally completed promptly after each observation session to ensure that details were not forgotten.

I never engaged in any lengthy discussions with Nathan about the class observations. My interactions with him were limited to short chats at the end of observation sessions. During these informal chats we usually talked about some material covered during the lecture. Nathan would clarify some aspect of the lecture content. Occasionally he commented about the behaviour of particular students. I never discussed the details of what I was observing in class.

I observed 6 out of 14 lectures of this study-unit. By the fifth lecture, sufficient data had been collected to make claims about the typical pedagogical practices of this lecturer for the observed study-unit. Observing the sixth lecture confirmed that I had correctly identified the point of saturation, and did not lead to any new interpretations. Table 4.1 summarises the class observations displaying: the number of students following the study-unit; the total class observation time; the percentage of observation time used for teacher's explanations (D1), student-teacher interaction (D2 & D3) and student-student interactions (D13 & D14). During most classroom observations, Nathan engaged in interactions depicted at the top left of the CF; that is, teaching and learning at the discursive level. The teaching sessions typically involved a significant amount of time (82%) where the lecturer was presenting and less time (16%) where the lecturer and the students interacted. There were only two occasions (2%) during the 6 lectures where a discussion ensued between students.

Table 4.1: Pilot observations of class teaching

Participant alias	Nº of students	Total class observation time	Teacher presents theory (D1)*	Student-Teacher interactions (D2 & D3)#	Student-Student interactions (D13 & D14)^
Nathan	37	5hrs 58min	82%	16%	2%

* D1 - Teacher describes/presents theory, concept or idea.

D2 - Student asks questions/comments/clarifies/critiques the teacher's theory, concept or idea.

D3 - Teacher redescribes/clarifies theory, concept or idea. The teacher answers the learner's questions. The teacher provides hints and comments.

^ D13 - Student asks questions/comments/clarifies/critiques the theory, concept or idea with peers.

D14 - Other students discuss questions/comments and offer alternative ideas to the student. The process assists the student to refine his/her understanding of theory, concept or idea.

This study-unit also involved a visit to an archaeological site. Prior to the visit, Nathan indicated that this visit would be different from the class lectures because it was going to involve experiential learning. This visit however, was more of a guided walking tour where the lecturer talked about features and remains of the prehistoric cave. Based on the lecturer's indications, I thought that this fieldtrip would show learning at the experiential level as understood by the CF, where students will learn by doing, practising, analysing, etc. The students, however, were not required to do anything beyond listening to the tutor's explanations and asking questions. Consequently, the fieldtrip was also characterised by learning at the discursive level. The observational checklist therefore, revealed discrepancies between espoused theories and theories-in-use (Argyris, Putnam and McLain Smith, 1985).

Nathan's participation continued throughout the remaining phases of this research study. His teaching practices were analysed and compared to those of the other participant academics in the next chapter.

4.4 Analytical Reflection

The checklist based on the CF was useful to document the range of pedagogical practices used in class: the lecturer presenting information to the students, the lecturer questioning the students, the students seeking clarification, etc. Following the pilot class observations, I concluded that the CF checklist was a useful instrument for collecting evidence of teaching taking place specifically at the

discursive level. Although the pilot observations did not show evidence of learning at the experiential level, I think that there could be situations in class where this kind of learning happen. However, collecting data about the lecturer's and students' adaptive and reflective processes was not something that could be done through observations. I also considered the use of interviews to collect such data; for example, after each lecture I could interview the academic to discuss the original plan of the lecture, the way this developed, the thinking behind any unplanned changes during the lecture, etc. However, the lecturer's accounts of their teaching practices may not necessarily be more informative than the class observations. As indicated earlier, the evidence collected through the observational schedule during the fieldtrip contradicted the lecturer's indications that this activity involved experiential learning. Given that the pilot class observations generated sufficient evidence to draw interesting conclusions about the academic's teaching practices, I decided to avoid weekly interviews, which may also be too invasive for the academic. At this stage, I also decided that this study will only focus on the teaching practices rather than the students' learning.

4.5 Summary

This initial phase of research was useful to design and test a tool for collecting data about the pedagogical practices of academics. This involved taking the elements of the CF theory and turning these into a class teaching observation schedule that was used to understand the teaching practices of the participants (Chapter 5). This checklist featured the lecturer's and students' behaviours related to teaching and learning at the discursive and experiential levels. The pilot observations did not yield data related to the lecturer's and students' adaptive and reflective processes. Consequently, I decided to drop the elements of the adaptive and reflective processes from the study, and from the CF checklist.

The review of literature did not yield any examples of other observational studies of teaching making use of a checklist based on the CF. This instrument forms a contribution to research, as it can be used by: (a) researchers involved in classroom observations; (b) academics involved in peer observations of teaching; (c) staff involved in formal appraisals of academics or quality assurance processes related to classroom teaching and; (d) researchers to gather data about the predominant type of teaching in university departments.

The activities of this initial phase of research were essential because these provided initial insights into the research context and an opportunity to test and refine an instrument to collect data about the teaching practices of university teachers. The observations and reflections of this research phase were used to guide the class teaching observations held during the next phase of research.

Chapter 5: Understanding the Teaching Practices

5.1 Introduction

Chapter 4 described the design and development of a methodology to learn about the pedagogical practices of academics. A class observation checklist based on the CF was developed and piloted with one academic. This chapter presents the activities of the second phase of this research which included: (a) the recruitment of other academics in this study; (b) the observations of their class teaching practices; (c) the analysis of the VLE usage and teaching-related documents; and (d) the semi-structured interviews with participants. The purpose of this research phase was to understand the teaching practices and learning needs of the participating academics to inform the design, development and delivery of an online PD course about teaching and learning technologies, to be followed by the participants. The empirical work undertaken during this research phase informed the development of the curriculum of the PD intervention. The chapter ends with a summary of the main themes that were addressed during the PD intervention described in Chapter 6.

5.2 Planning

Multiple data collection methods were used, over a period of nineteen months from September 2012 to May 2014, to develop an understanding of the pedagogical practices of the participating academics. The data collection methods included class observations, analysis of the usage of the VLE and teaching-related documents (including study-unit descriptions, teaching, learning and assessment material), and semi-structured interviews.

A purposeful sample of nine academics was recruited during this phase of this study. Nathan, the academic who was involved in the pilot of the class observation schedule, continued with his participation in this research study. Therefore, in total 10 academics were involved in this study. The criteria used to select the participants were discussed in Section 3.6.1.

The recruitment of participants was done during two periods: in September 2012 and in September 2013. The short-listed academics were contacted by email (Appendix C). One-on-one meetings were organised to explain their contribution and

expected commitment to the study. I explained that this research involved class observations during the following semester and, at a later stage, participation in a PD course about TEL. I explained that the main aim of this PD course was to help them reflect on their teaching practices and how these could be enhanced through the use of learning technologies. The PD course was expected to help them adopt pedagogical practices that make more efficient and effective use of learning technologies. The academics that agreed to participate in this study signed the ethics consent form (Appendix A).

In September 2012, one-on-one meetings were organised with four academics: Neville, Omar, Peter and Nathan. Neville indicated that it would be difficult for him to dedicate time to follow the PD course because of teaching and research commitments. We agreed that he should not participate in the study. Omar and Peter accepted to participate and were observed teaching between October 2012 and January 2013. Nathan agreed to continue with his participation in this study; as indicated earlier, his class teaching was observed during the pilot of the observation schedule (Chapter 4). In September 2013, meetings were organised with another seven academics: Darlene, David, Edward, Giselle, Lillian, Steve and Sam. They accepted to participate in the study and were observed teaching between October 2013 and January 2014. The class teaching observations were therefore organised during two periods: (a) October 2012 to January 2013 and (b) October 2013 to January 2014 (Table 5.1). The recruitment and class observations were done over two phases due to practical constraints: observing a number of teaching sessions for each academic required a considerable amount of time, and it was only possible to schedule a limited number of class observations at a time. It should be noted that the class observation procedures were identical in both phases.

Prior to the first class teaching observation, the participants provided me with background information about their study-units including class schedules and venues. They granted me permission to access the VLE areas of the observed study-units. Reviewing these areas provided a context to the class teaching sessions that were going to be observed.

The class observation procedures and checklist were identical to those adopted during the pilot of the observation schedule (Chapter 4). At the beginning of the first class teaching observation, the academics informed their students that I will be observing the lecturer's teaching and interactions in class. The students were

asked to indicate whether there were any concerns about my presence in class. None of the students expressed concerns about this. I attended classes as a passive participant and tried to be as unobtrusive as possible during observations. I sat in class for the entire duration of each lecture. I never engaged in discussions with the lecturers about the class observations. It should be noted that one of the observed study-units involved a visit to an archive museum. I attended this visit and used the same checklist that I used during class teaching observations.

Table 5.1: Timeline of research activities

Participant alias	Analysis of study-unit area on VLE, analysis of documents & class teaching observations	Semi-structured interview
Nathan*	February 2012 to May 2012	April 2014
Omar & Peter	October 2012 to January 2013	March 2014
Sam, Edward, Giselle, David, Lillian, Darlene & Steve	October 2013 to January 2014	March to April 2014

*The analysis of the study-unit area on the VLE and documents, and class teaching observations of this participant were undertaken during the piloting of the class observation schedule (February to May 2012), but are reported in this chapter to facilitate comparisons with the other participants' data.

Between March and April 2014 (Table 5.1), semi-structured interviews were scheduled with each participant (Appendix D). During these interviews the academics provided details about the design process behind their teaching sessions. Each participant was asked to bring along the teaching resources used during a typical lecture and talk about their preparation and use during the lecture. Through these interviews, I also gathered data about the context, motivations, and assumptions that led each academic to take up a teaching and research career at university. I asked about their experiences of any PD courses related to teaching and/or use of learning technologies at university. Towards the end of the interview, the participants were prompted to talk about their concerns about teaching and their expectations of a PD course about learning technologies. I wanted to get an insight about the topics that would interest them. A set of starter questions was used during the interviews (Appendix E) each of which lasted about one hour.

The data was collected in this order: analysis of the study-unit areas on VLE, analysis of teaching-related documents (including study-unit descriptions, teaching, learning and assessment material), class teaching observations and semi-structured

interviews (Table 5.1). The data collected will be displayed in the ensuing sections. It should be noted that Darlene withdrew her participation after the class observations. Lillian and Steve withdrew their participation during the PD course. These academics gave me permission to use the data that had already been collected for the purpose of this study.

5.3 Profiles of Participants

This section introduces the ten participants of this research study. The profile information was gathered through the individual interviews (Appendix E) and staff profiles available on the university website. The participants were prompted to talk about the context, motivations and assumptions that led them to take up a teaching and research career at university. They also talked about the various influences on their teaching practices.

The research participants were full-time resident academics teaching undergraduate study-units; some of the participants were also involved in postgraduate teaching. Their university teaching experience at the start of this research study ranged between one and fourteen years. A variety of disciplinary areas are represented in this study (Table 5.2). The participants' background prior to taking up their university appointment, and information about the type of PD activities that they engaged with, will be presented next.

Table 5.2: Participants' title, disciplinary area & teaching experience

Participant alias	Title	Disciplinary Area	University teaching experience
Darlene*	Lecturer	Health Sciences	10 years
David	Lecturer	Arts & Humanities	4 years
Edward	Lecturer	Arts & Humanities	5 years
Giselle	Lecturer	Arts & Humanities	1 year
Lillian#	Assistant Lecturer	Business & Applied Social Sciences	5 years
Nathan	Senior Lecturer	Arts & Humanities	13 years
Omar	Lecturer	Science, Technology & Engineering	5 years
Peter	Lecturer	Arts & Humanities	10 years
Sam	Senior Lecturer	Business & Applied Social Sciences	14 years
Steve#	Senior Lecturer	Business & Applied Social Sciences	13 years

* The academic withdrew participation after the classroom observations.

The academic withdrew participation during the PD course.

Darlene

Darlene is a lecturer at the Faculty of Health Sciences. After completing her undergraduate studies, she worked as a speech-language pathologist in community clinics, special schools and a geriatric hospital. Prior to joining university, she was more inclined to research rather than teaching; however, with experience, she started appreciating that teaching complements research. Darlene mentioned that she enjoyed her contact with students. She was following a short PD programme about university teaching when she started participating in this research study. This PD programme is one of the requirements for an academic to be promoted to a senior lecturer. She also followed a short course in public speaking and attended workshops on the use of the VLE and plagiarism detection software.

David

David is a lecturer at the Faculty of Arts. He joined university after completing his doctoral studies. He mentioned that he took the university post to pursue a research career; however, he soon realised that this post involved also teaching duties. He spoke positively about the teaching duties and mentioned that teaching helped him become more thorough in his subject area. He mentioned that teaching gives lecturers the opportunity to explain their research and brings new ideas for research. He finds the class interactions enlightening and he learns a lot with students. David followed a short PD programme about teaching between 2012 and 2013 at university. He found this programme useful, citing how he became more sensitive to the diversity of student learning styles. The programme provided him with ideas about organising and facilitating in-class discussions. He has also adopted a system of rubrics for marking student assignments as a result of following this programme. During his doctoral studies he has followed workshops on running tutorial sessions.

Edward

Edward is a lecturer at the Faculty of Arts. He had an administrative job before he pursued full-time doctoral studies. After completing his doctorate, he taught at a pre-university college and later he took up his post at the university. During the interview he said that he enjoys both research and teaching at university but he would prefer having more time which he can dedicate for research. Edward has also followed a short PD programme about teaching between 2012 and 2013 at university. He has adopted the mid-course review as a result of following this programme. During his

doctoral studies, he attended seminars about delivering presentations, and facilitating small group teaching and tutorials. He mentioned that he is usually sceptic about pedagogically-focussed courses because these tend to be more oriented towards theory rather than the practical aspect of teaching. Nonetheless, he expressed satisfaction with the PD programme mentioned earlier and the workshops that he attended during his doctoral studies.

Giselle

Giselle is a lecturer at the Faculty of Arts. She worked in the health sector before taking up her appointment at university. Whilst pursuing her doctoral studies, she had a brief stint as a primary school teacher. She claims that this teaching experience helped her with university teaching. During the interview, she indicated that her initial inclinations were towards a research career at university; however, she realised that her post at university involves both research and teaching. She mentioned that she finds teaching enjoyable even though its preparation takes a lot of her time. Giselle followed a short PD programme about teaching between 2013 and 2014 at university. During her doctoral studies, she followed a workshop about inquiry-based learning which inspired her teaching at university. In recent years, she attended workshops on the use of the VLE and plagiarism detection software.

Lillian

Lillian is a lecturer in the discipline of business studies. Prior to joining the university, she worked in her family business. Although she was always keen on studying and research, she never imagined herself as a university academic. Initially she was mainly interested in research rather than teaching. During her master's studies she was invited to teach in an undergraduate study-unit at university. She enjoyed this experience and started delivering other study-units. She was eventually appointed as an assistant lecturer at university. Lillian has not followed any formal pedagogical training except for short workshops during her doctoral studies. She said that her teaching is based on her experience as a university student and reflections on her present teaching at university. The feedback that she received from students has also shaped her teaching. She has attended training on the use of the VLE.

Nathan

Nathan is a senior lecturer at the Faculty of Arts. He mentioned that from a young age he wanted a teaching career. After completing his undergraduate studies,

his lecturers encouraged him to pursue master's and doctoral studies and then he joined the university. He indicated that teaching and research are intertwined; teaching facilitates the dissemination of research. He spoke about the importance of academics being able to communicate their research. Nathan has not followed any formal pedagogical training. During his early years of teaching, he was inspired by a book about university teaching. Between 1999 and 2000, he followed one-off presentations about: (a) designing and developing study-unit descriptions and handbooks; (b) using instructional media to support teaching and; (c) mentoring students. In recent years, he attended workshops on the use of the VLE and the plagiarism detection software. He emphasised the importance of continuous PD for all academics.

Omar

Omar is a lecturer at the Faculty of ICT. After completing his undergraduate studies, he worked as an engineer in industry for a short period and then he joined the university and pursued his master's and doctoral studies. Omar was always keen on studying and research; during his undergraduate studies he regularly assisted his classmates with queries they had about their studies and assignments. He said that this experience helped him to analyse the subject from different perspectives and develop a better understanding of the subject. Omar mentioned that he felt an inclination towards a teaching career during his undergraduate studies. He has also taught engineering subjects at a vocational college whilst pursuing his master's studies. This teaching experience taught him how to explain concepts using simple language and practical examples. Omar followed a short PD programme about teaching between 2012 and 2013 at university. He found this programme useful, in particular, the discussions during the microteaching sessions. In recent years, he attended workshops on the use of the VLE and the plagiarism detection software.

Peter

Peter is a lecturer at the Faculty of Theology. He comes from a family with a tradition of teachers; this was a significant influence on him, and on his choice of a teaching career. Moreover, since he is a priest, he was required to follow the directions of the Church authorities who have specified the teaching and research area that Peter took up at the Faculty of Theology. Peter did not follow any formal university teacher development training. Every year he attends conferences to update himself about his disciplinary area. Occasionally, some conferences include

pedagogically-focussed sessions which he follows with interest. In recent years, Peter attended workshops on the use of the VLE and the plagiarism detection software.

Steve

Steve is a senior lecturer at the Faculty for Social Wellbeing. After completing his undergraduate studies, he held administrative posts in environmental planning and started lecturing on a part-time basis at university. After completing his doctoral studies, he took up a full-time appointment at university. He mentioned that teaching allows him to disseminate research and knowledge and this motivates him. He claimed that research and knowledge would be “shelved” if it was not for teaching. Steve has not followed any formal training in university teaching. He followed workshops on the use of the VLE and plagiarism detection software. He attends conferences to update himself about his disciplinary area.

Sam

Sam is a senior lecturer at the Faculty of Economics, Management and Accountancy. He started teaching at university whilst pursuing his master’s studies. He worked in the aviation industry before joining university. He said that compared to working in industry, university teaching is more fulfilling in terms of self-development. He said that he was always keen on studying and research. Sam mentioned that he has never followed any courses that impacted his teaching practices in a significant way. His present teaching skills are the result of his past teaching experience. He mentioned that occasionally he picked up pedagogical tips from other senior academics. Sam attended one-off presentations related to university teaching, and workshops on the use of the VLE and plagiarism detection software.

Summary

Four participants were in jobs unrelated to teaching before they took up employment at university (Table 5.3). These academics began their career at university as specialists within their chosen professions, not as professional educators. Five participants reported that they were attracted to academia because they were more interested in pursuing research than teaching. All participants however, viewed university teaching as being closely related to research. David’s comment illustrates this:

So originally, what attracted me to this sort of job is the research aspect but along the way, I've realised that the two [*referring to teaching*] go hand in hand, and if you only do research, I think you'll be missing out something very important.

Table 5.3: Participants' jobs prior to joining university and PD

Participant alias	Jobs prior to joining university	One-off workshops & presentations	Short PD course about university teaching
Darlene	Health & education sectors	✓	✓
David	None	✓	✓
Edward	Public administration sector & teaching at a pre-university college	✓	✓
Giselle	Health sector & at a primary school	✓	✓
Lillian	Family business	✓	-
Nathan	None	✓	-
Omar	Industrial sector & teaching at a vocational college	✓	✓
Peter	None	✓	-
Sam	Aviation sector	✓	-
Steve	Environmental sector	✓	-

Several participants indicated that teaching played an important role in communicating research. One participant claimed that teaching also made lecturers more thorough about their subject. Another participant said that research ideas originated from teaching. It was evident that the academics participating in this research espoused the value of the 'teaching-research nexus' even though this term was not specifically mentioned during the interviews. The teaching-research nexus is considered to be a fundamental characteristic of academic work (Boyer, 1990), in which teaching and research are mutually reinforcing endeavours, despite the ongoing debate about how these can be combined.

Several participants reported that their teaching development is mainly based on their experience of teaching and learning, and on student feedback. The review of literature (Chapter 2.6.1) has shown that academics often rely on their personal class experiences as students and teachers when teaching (Moses, 1993; Halpern and Hakel, 2002; Donnelly, 2008).

The participants engaged mostly in short PD activities rather than courses that extended over long periods of time. These PD activities were generally workshops or presentations about different themes including: syllabus and course handbook design, public speaking, small group teaching and tutorials, inquiry-based learning, use of the VLE and plagiarism detection software etc. (Table 5.3). Several participants indicated that they followed workshops during their doctoral studies or when they started teaching at university.

Many HEIs, particularly those in the UK, organise postgraduate or master's programmes about teaching in HE (Chapter 2.6.1). In some universities, successful completion of these programmes secures the tenure track of academics. The participants' institution does not organise accredited courses about university teaching. However, it organises a short PD course about university teaching that academics are required to complete to be eligible for the post of a senior lecturer. David, Edward, Giselle and Omar completed this PD course prior to their involvement in this research study, whilst Darlene was following this PD when she started participating in this research.

Analytical Reflection

During the interviews all participants spoke about their interest in enhancing teaching practices and in making sound use of learning technologies. Their voluntary engagement with PD activities, corroborates their interest in pedagogical development. This also explains their motivation to participate in this research study and to commit time to a course aimed at helping them enhance their teaching with the use of learning technologies. Given their enthusiasm about teaching, it was expected that these academics will benefit from following the PD course delivered later on in this research study.

One of the participants expressed scepticism about teaching development courses claiming that these are usually more oriented towards theory rather than the practical aspects of teaching.

I tend to be a bit sceptical of teaching training courses for academics, because I have the impression that, perhaps partly justified partly not... that sometimes they might be too theoretical and air fairy too. (Edward)

Educational theory, however, is an essential component of any course aimed at preparing academics to teach. Learning theories, in particular, provide academics with the knowledge base required to make sound decisions regarding the design, delivery and assessment of their study-units (Ramsden, 2003). The PD course, described in chapters 6 and 7, will featured activities aimed at helping academics connect educational theory and teaching practice. The participants will be assisted to reflect on the rationale behind each learning theory and how this helps them in their class teaching practices.

5.4 Study-Unit Descriptions

This section displays the data about the official descriptions of the observed study-units. The institution where the research study took place, publishes the study-unit descriptions on the student records system and on the website. The presentation format of study-unit descriptions consists of a standard set of fields (Table 5.4).

Table 5.4: Presentation format of a study-unit description

Field	Description	Fictitious example
Code	Study-unit code	EDU1011
Title	Study-unit name	Philosophy of Education I
Level	Level the study-unit is being offered	Yr1 Modular Undergraduate Course
ECTS	Credit value of study-unit	4 ECTS
Department	Department offering the study-unit	Educational Studies
Description	Contains: (a) aims; (b) learning outcomes (knowledge & understanding and skills (including transferable); (c) overview & list of topics/themes; (e) reading list.	
Type	Type of study-unit	Lecture and Tutorial
Assessment	Assessment components, resit availability & weighting	Examination (2hrs) - 100%

An analysis of the study-unit descriptions showed that there were variations in terms of the level of detail in the 'description' field (Table 5.5). Five (5) study-units (those of Edward, Giselle, Nathan, Lillian and Steve) had all the required content in the 'description' field, including well documented learning outcomes. The skills subset of the learning outcomes in two study-units (described as 'Can be improved' in Table 5.5) were either open-ended or else could not be classified as skills. For example:

Apply the knowledge gained in the study-unit to various study-units (both cultural and language study-units), including units offered in Hebrew, archaeology, theology etc. (David)

Outline the implications of the International Classification of Functioning, Disability and Health for individuals with communication disorders. (Darlene)

Table 5.5: Content in the ‘Description’ field of study-unit descriptions

Content	Edward, Giselle, Nathan, Lillian & Steve	Darlene & David	Omar, Peter & Sam
Study-unit aims	✓	✓	✓
Learning Outcomes			
- Knowledge & understanding	✓	✓	None
- Skills (including transferable skills)	✓	Can be improved	None
Overview & list of topics/themes	✓	✓	✓
Reading List	✓	✓	✓

The published study-units of Omar, Peter and Sam did not contain any learning outcomes. During the interviews, these academics explained that they need to dedicate time to update the published study-unit descriptions so that these would include learning outcomes. One participant, Sam, specifically mentioned that he required assistance to document learning outcomes with the correct verbs according to the institutional guidelines.

Analytical Reflection

Responding to the issues identified here, the PD course will feature an example of a course description with documented learning outcomes. The course will offer participants the opportunity to discuss the value of documenting learning outcomes related to knowledge and understanding, and skills. The participants will be assisted to reflect on the learning outcomes of one of their study-units and revise these as necessary.

5.5 Use of VLE

This section presents data about the use of the VLE by the participants to augment their class teaching. It should be noted that the institution where the research took place does not mandate the use of the VLE. Academics can populate their study-

unit areas on the VLE and make these available to their students. At the beginning of each semester, the institution sends a notification to all academics reminding them about the recommended content in the study-unit areas on the VLE (Table 5.6).

Table 5.6: Recommended content of study-unit areas on the VLE

Content	Description
VLE profile	Lecturer's details including photo, availability and contact information.
Study-unit description	A study-unit description matching that available on the students' records system.
Class announcements forum	This forum (available by default in all VLE areas) is used by academics to communicate important information about the study-unit.
General Q&A forum	This is a standard forum which students use to post questions about the study-unit.
Reading list	The lecturer can organise direct links to readings available through the library e-journals and other websites. Alternatively, the students can use this list to search for the journal articles themselves.
Other learning resources	Links to electronic copies of course notes & handouts, presentations displayed in class, and links to electronic resources available on the Internet (e.g. YouTube videos etc.).
Assessment	<p>An outline of the assessment for the study-unit. This should include clear instructions, submission dates, marking criteria and weightings for multiple assessments (where applicable).</p> <ul style="list-style-type: none"> - For study-units assessed through an end of semester test, a past paper or sample test questions is included. - For study-units that are partly or fully assessed through an assignment, draft and final Turnitin assignment activities are included.

The participants used different features of the VLE (Table 5.7 and 5.8). Edward and Lillian populated their staff profile with a photo. Nathan, Peter and Sam uploaded the study-unit description. Giselle used regularly the class announcements and the Q&A forum to communicate with students. The majority of participants uploaded their class presentations, notes and handouts, and provided links to readings and online resources. All study-units that are assessed through coursework (except David's and Steve's study-units) contained assignment questions and instructions. Only Nathan uploaded the assignment marking rubric in the VLE. Giselle uploaded a collection of marked assignments from a previous cohort to assist her students whilst preparing their assignments. Nathan and Giselle set assignment dropboxes in their VLE areas, allowing students to submit their papers through the plagiarism detection software. Although seven study-units were assessed through an

end of term test, only two VLE areas featured sample past papers. Edward uploaded the criteria that he used when marking examination essays.

Table 5.7: Participants' use of the VLE

Participant alias	VLE profile	Study-unit description	Use of Class Announcements	Use of Q&A forum	Presentations & handouts
Darlene	x	x	x	x	✓
David	Does not use the VLE				
Edward	Uploaded photo	x	x	x	✓
Giselle	x	x	Regularly	Regularly	✓
Lillian	Uploaded photo	x	x	x	✓
Nathan	x	✓	x	x	✓
Omar	x	x	x	x	✓
Peter	x	✓	x	x	✓
Sam	x	✓	Used once	x	x
Steve	Does not use the VLE				

Table 5.8: Participants' use of the VLE

Participant alias	Links to readings & websites	Assignment questions & instructions	Assignment marking criteria	Assignment dropboxes	Past papers
Darlene	x	N/A	N/A	N/A	x
David	Does not use the VLE				
Edward	✓	N/A	N/A	N/A	x
Giselle	✓	✓	x	✓	x
Lillian	✓	✓	x	x	N/A
Nathan	✓	✓	✓	✓	x
Omar	x	✓	x	x	✓
Peter	✓	N/A	N/A	N/A	x
Sam	✓	✓	x	x	✓
Steve	Does not use the VLE				

N/A – The study-unit does not involve assignments. It is assessed by end of semester test.

David and Steve did not use the VLE for the observed study-unit. During the interview, David indicated that he used the VLE for other study-units; however, with small student groups he preferred to provide each student with printed versions of the study-unit handbook and notes, rather than uploading these on the VLE. Steve did

not explain why he did not use the VLE but he mentioned that he will use this in the future. Sam used the VLE; however, he expressed concerns that the students do not make the required effort to follow the class explanations when the presentations are available on the VLE:

I think that, when you have a PowerPoint, you may have uploaded this on the VLE, sort of, they rely on the PowerPoint presentation and they don't pay attention...

Analytical Reflection

Analysis of the VLE areas revealed that the participants are using this technology to support their teaching by facilitating the students' access to learning resources and their submission of papers (Chapter 2.5.2). None of the participants followed all the institutional guidelines regarding the content of the study-unit areas on the VLE. The PD course organised during the next research phase will, as a consequence, make use of the VLE, so as to showcase the expected content of a VLE area. The class announcements and Q&A discussion forums will be used to communicate with participants and to clarify their queries. Participants will experience exemplary use of these communication tools from the learner's perspective. The PD course will also assist academics to reflect on assessment activities and the value of marking rubrics from the lecturer's and students' perspectives. The course will include a discussion about the value of assignment dropboxes in the VLE and a set of instructions to prepare dropboxes in the VLE.

5.6 Preparation for Teaching Sessions

Data about the participants' preparation work for a typical teaching session was also collected through the semi-structured interviews. Some of the participants' answers were confirmed during class observations.

All participants, except Edward, Lillian, and Steve, specifically mentioned that the preparation work for each teaching session was extremely time-consuming. Giselle and Nathan, for example, stated that a 2-hour lecture required between two and four days of preparation.

[I]t took me... four days I think, if I have to put all the hours together, four full working days to prepare well for a subject [referring to the 2-hour lecture], which I thought could be easy. (Nathan)

All participants mentioned that this preparation typically entailed research and compiling teaching resources from books, journals and online sources. Several participants mentioned that when time permits they try to design activities to engage students. Giselle, Nathan and Steve mentioned that they strive to prepare an element of surprise or novelty in order to engage students in class. Darlene mentioned that she used case studies to engage students. Darlene, David, Omar and Nathan linked each topic to the students' prior knowledge and skills. David and Nathan mentioned that the process of lecture preparation is a learning experience for them.

All participants prepared tutor's notes to assist them in class (Table 5.9). Edward, Lillian and Peter, prepared student handouts and uploaded these on the VLE. Edward's handouts contained the lesson plan and a list of readings related to the theme/s tackled during the lecture. Peter's and Lillian's handouts consisted of concise notes about the topics covered during the lecture. David prepared student notes; however, as indicated in Section 5.5, with small groups he prefers providing students with a printed version of notes.

Table 5.9: Participants' preparation for teaching sessions

Participant alias	Electronic presentations	Tutor's notes	Student handouts	Books
Darlene	✓	✓	x	x
David	✓	✓	✓	x
Edward	x	✓	✓	x
Giselle	✓	✓	x	x
Lillian	✓	✓	✓	x
Nathan	✓	✓	x	✓
Omar	✓	✓	x	x
Peter	x	✓	✓	✓
Sam	x	✓	x	✓
Steve	✓	✓	x	x

Every participant, except Edward, Peter and Sam, prepared electronic presentations for in-class teaching. Some participants spoke about the usefulness of these presentations to structure their teaching sessions. Edward however, mentioned that he preferred using his notes and the student's handouts rather than electronic presentations. Peter's concern about the use of electronic presentations was that these limit the delivery of subject content in a personal way. He mentioned that presentations shift the students' focus from the lecturer to the screen. He claimed that presentations are more appropriate for natural sciences rather than social sciences.

Sam does not prepare electronic presentations because he feels that these restrict him during teaching. By contrast, Nathan, Giselle and David mentioned that they do not always follow the content of each slide in class. David for example, said that he skipped slides when the content has been anticipated by the students or covered during an unplanned discussion.

Nathan and David mentioned that they review the teaching notes and the content of the electronic presentations just before delivering their lectures. Nathan and Peter read from books during lectures. Their preparation for a teaching session, therefore, involved identifying the text excerpt/s that will be read in class.

During interviews, the participants were prompted to talk about the learning objectives of the teaching sessions. Half of the participants said that they defined learning objectives for each teaching session. Nathan and Omar stated or wrote these on the board at the beginning of each teaching session. Giselle, Peter, Steve and Sam said that although they think about learning objectives for each teaching session, they did not make these explicit either verbally or in writing. Giselle expressed reservations about documenting objectives for each teaching session:

It's more study-unit based learning outcomes. I kind of resist this sort of... we did this kind of really breaking the teaching process, really breaking it down into aims and... I tend to resist that. For me it is a process and I don't want it to be broken up too much because I feel, you lose the magic somehow.

Omar and Peter were probed to explain why they defined learning objectives for each session but their published study-unit descriptions did not feature learning outcomes. They admitted that the published study-unit descriptions required updates. The other participants said that they defined learning outcomes at the study-unit level only. Lillian claimed that the study-unit learning outcomes spanned across several teaching sessions.

Analytical Reflection

The interviews, class observations and the study-unit areas on the VLE showed that the participants dedicated considerable time to prepare for class teaching. The PD intervention delivered during the next phase of research will cover time-saving strategies related to the preparation of teaching resources.

During the PD course, the participants will be assisted to reflect on the value of documenting and communicating learning outcomes for each teaching session. The PD course will also include documented learning outcomes for each teaching session. The academics will also practice how to write learning outcomes for a teaching session or an activity. The course will introduce the participants to CA theory (Chapter 2.4.1). During the PD course, Sam and Peter will be assisted to reflect deeply on their views about the use of electronic presentations and other learning technologies.

5.7 Observations of Class Teaching

All teaching spaces were equipped with whiteboards and data projection facilities. Darlene's lectures were held in a room with movable desks and chairs; Sam's lectures were held in an auditorium; and Omar's lectures were held in hall with fixed benches and seating. The rest of the participants taught in classes equipped with movable chairs with writing arms.

The participants generally arrived in class on time and well prepared to deliver the lecture. The participants were observed using a variety of instructional aids (Table 5.10). All academics referred to the tutor's notes and used the whiteboard to write key terms or concepts during lectures. In Lillian's classes, the students were asked to use the whiteboard to write summary notes about their group discussions. All academics, except Edward, Peter and Sam, used electronic presentations in class. Students were observed using handouts during David's, Edward's and Lillian's sessions. Nathan and Peter read excerpts from books in class.

The majority of participants were explicit about the purpose of their lectures and in-class activities. Omar started each lecture with a slide displaying the learning objectives of the session. The remaining participants conveyed the purpose of the lecture at the beginning or sometime during the session.

I used the checklist based on the CF for class teaching observations (Appendix B). Table 5.11 summarises the class observations for each academic displaying: the number of students following the study-unit; the teaching mode; the total class observation time; the percentage of observation time used for teacher's explanations (D1, where D refers to the discursive dimension of the CF), student-

teacher interaction (D2 & D3) and student-student interactions (D13 & D14). The pedagogical practices of the participating academics will be described in detail below.

Table 5.10: Instructional aids used in class

Participant alias	Whiteboard	Electronic presentations	Tutor notes	Student handouts	Book
Darlene	✓	✓	✓	×	×
David	✓	✓	✓	✓	×
Edward	✓	×	✓	✓	×
Giselle	✓	✓	✓	×	×
Lillian	✓	✓	✓	✓	×
Nathan	✓	✓	✓	×	✓
Omar	✓	✓	✓	×	×
Peter	✓	×	✓	×	✓
Sam	✓	×	✓	×	×
Steve	✓	✓	✓	×	×

Table 5.11: Observations of class teaching

Participant alias	Nº of students	Teaching mode	Total class observation time	Teacher presents theory (D1)*	Student-Teacher interactions (D2 & D3)#	Student-Student interactions (D13 & D14)^
David	5	Lecture	8hrs 24min	40%	43%	17%
Lillian	25	Seminar	5hrs 26min	45%	25%	30%
Giselle	28	Seminar	5hrs 46min	49%	45%	6%
Darlene	17	Lecture	8hrs 4min	62%	33%	5%
Omar	17	Lecture	6hrs 12min	69%	31%	0%
Peter	28	Lecture	5hrs 16min	72%	28%	0%
Edward	32	Lecture	4hrs 10min	79%	16%	5%
Steve	23	Lecture	6hrs 38min	79%	21%	0%
Nathan**	37	Lecture	5hrs 58min	82%	16%	2%
Sam	104	Lecture	4hrs 38min	92%	8%	0%

The data is organised by 'Teacher presents theory (D1)' in ascending order.

*D1 - Teacher describes/presents theory, concept or idea.

#D2 - Student asks questions/comments/clarifies/critiques the teacher's theory, concept or idea

D3 - Teacher redescribes/clarifies theory, concept or idea. The teacher answers the learner's questions. The teacher provides hints and comments.

^D13 - Student asks questions/comments/clarifies/critiques the theory, concept or idea with peers.

D14 - Other students discuss questions/comments and offer alternative ideas to the student. The process assists the student to refine his/her understanding of theory, concept or idea.

** The class observations of this participant were done during the piloting of the class observation schedule.

The published study-unit descriptions of all observed classes stated that the mode of teaching is 'lecture'. However, Lillian's and Giselle's classes may well be considered as 'seminar' type teaching sessions involving a significant amount of time dedicated for dialogic teaching.

David, Lillian, and Giselle used less than half of the class time (40% to 49%) for one-way teacher explanations (D1).

David's typical class teaching consisted of:

- a) teacher explanations (D1);
- b) student-teacher question/answer sessions (D2 & D3); and
- c) discussions/debates between students (D13 & D14).

During one class session, David divided the students in two groups. The first group presented arguments for the hypothesis that the Dead Sea scrolls were identical or somehow related to the Essenes; and the second group presented counter arguments to this hypothesis. David wrote notes about the ongoing debate on the whiteboard and facilitated the debate when this went off topic.

Lillian's typical class session was divided in four parts:

- a) lecturer introduced the themes and activity (D1);
- b) students discussed the questions or handouts in small groups (D13 & D14);
- c) each group reported the outcomes of the discussions (D2, D3, D13 & D14); and
- d) lecturer summarised the salient themes that emerged from the student discussions (D1).

Giselle's typical session was divided in two parts:

- a) the first hour involved a student activity e.g. discussing a visual/s, video-clip, a blog etc. (D2, D3, D13 & D14); and
- b) the second hour involved the lecturer's explanation of the sociological theories relevant to the earlier student activity (D1).

Darlene, Omar, Peter, Edward, Steve, Nathan and Sam dedicated between 62% and 92% of their class time for lecture-style teaching (D1). The remaining time was used mostly for student-teacher interactions (D2 & D3). Generally, the same

students (4 to 6 in the observed classes) engaged in student-teacher interactions. It was only in Peter's class that all students were engaged in student-teacher interactions. Peter knew his students by name and directed questions to individual students ensuring that all students participated actively in class. Darlene, Edward and Nathan organised a discussion activity between the students (D12 & D13) during one of the observed sessions. Student-student interactions (D13 & D14) were not observed in Omar's, Peter's, Steve's or Sam's classes.

In terms of the teacher's explanations, Darlene, Edward, Peter and Sam explained concepts and theories at a pace that enabled students to write notes comfortably. These academics were often observed dictating notes. Darlene, Giselle and Omar summarised periodically throughout and at the end of each class. It should be noted that all participants, including those with a predominantly lecture-based teaching style, regularly invited students to ask questions about the teacher's explanations.

The questioning approach varied between participants. Darlene, Edward, Omar, Peter and Sam asked questions that were mostly of the recall type. In contrast, David, Giselle, Nathan, Lillian and Steve asked also higher-order thinking questions that challenged their students to think more deeply. After asking questions, Nathan, Omar and Steve did not always allow adequate time for students to think and come up with answers. These academics generally gave the answer away soon after they asked the question. The other academics generally followed up on short or inadequate answers by rephrasing questions and probing responses that required students to extend or improve their answers. During observations, the academics provided detailed answers to all student questions.

Analytical Reflection

The class observations showed that the pedagogical practice adopted by the majority of participants (7) in this research study was lecture-style teaching (62% to 92% of class time). Some participants were also observed dictating notes. There may be different reasons explaining why academics adopt this 'teaching-centred' approach including: (a) they prefer the lecture-method because it gives them direct class control in terms of aims, content, organisation, pace of explanations and student learning; (b) they feel that this is the best teaching method to expose students to unpublished or not readily available material; (c) they regard the lecture method as the best teaching

approach because this is how they learnt; and (d) it is the most efficient approach to teach large student groups. These reasons, however, were not confirmable simply from the class observations.

Student-teacher (D2 & D3) interactions were observed during the teaching sessions of all participants and these varied between 8% and 45% of class time. Student-student interactions (D13 & D14) were observed in the classes of six participants and these involved between 2% and 30% of class time. The teaching style adopted by Lillian, David and Giselle was predominantly student-centred, dedicating a substantial amount of time for discussions and groupwork activities. Their teaching style encouraged students to assume more responsibility for their learning in class.

Academics may be challenged by large classes when they need to encourage student participation and groupwork activities. Sam's teaching in the lecture theatre with 104 students (Table 5.11) involved the lowest student participation (8%) and this participation was limited to student-teacher interactions only (D2 & D3). Small student groups, however, did not necessarily lead to student-student interactions (D13 & D14). Omar (17 students), Steve (21 students) and Peter (28 students) did not organise any groupwork activities during class observations. The fixed benches and seating may have restricted Omar and Sam from organising groupwork activities. The desks and seating arrangements in learning spaces can enable or inhibit different pedagogical practices (Oblinger, 2005).

The class observations showed that all teaching sessions featured student interactions in the form of questioning or discussing. None of the observed sessions involved only one-way lecturer to student teaching. This evidence contradicts the popular assumption that the majority of teaching practice at university is only transmissive (Twigg, 1999; Bligh, 2002). As indicated in Chapter 2, there is no single pedagogical approach appropriate for all university teaching. The academic may need to adopt different pedagogical practices during the course of a study-unit. As mentioned in Section 5.3, the PD course organised later on during this research study will expose the participants to the different learning theories and their implications for the participants' subject disciplines and pedagogical practices. The course will help participants reflect on different teaching strategies including lecturing, discussion-based teaching, flipped classroom teaching, blended and online teaching.

Contrasting claims, as indicated in Chapter 2, were made about the engagement of students during lectures. Some students, particularly those in Omar's (D1=69%), Steve's (D1=79%) and Sam's (D1=92%) classes were regularly distracted during the lectures. By contrast, the class observations showed that all students in Nathan's (D1=82%) and Peter's (D1=72%) classes were generally attentive to the lecturer's explanations. Nathan was very passionate about his subject and delivered his explanations with enthusiasm; this behaviour may have motivated students to pay attention in class. Peter was less enthusiastic in class; however, his students were also motivated during the lectures presumably because the majority were mature and interested to learn the subject. The PD course organised during the next phase of research will include discussions around the theme of student engagement during lectures.

Nathan and Omar stated or wrote the learning objectives of the session on the board at the beginning of each lecture. These observations confirmed what they said during the interviews (Chapter 5.6). During interviews, the other participants reported that they did not define learning objectives for each session in class; however, the classroom observations revealed that they did mention the purpose of their lectures and in-class activities. The participants seem to be unaware of the fact that they had been explicit about what they are trying to do in class. The class observations, therefore, revealed a good pedagogical practice that was not reported by academics during the interviews.

The class teaching observations showed that some academics asked questions that were predominantly of a recall type and/or did not allow time after questioning for students to think and formulate an answer. During the PD course, which will be delivered online, the participants will engage in online discussions around higher-order thinking questions. The participants will also experience facilitation skills in the context of asynchronous discussions, where the facilitator allows time for contributions and replies to questions. It is expected that this online experience will enhance the participants' questioning techniques in class.

The class observations also showed that teaching occurred specifically at the discursive level of the CF. These findings are similar to the findings of the pilot class observations (Chapter 4). As indicated earlier in this chapter, one of the observed study-units involved a visit at an archive museum. There was an expectation that experiential teaching and learning would be observed during this visit. The format

of this visit however, was similar to a guided tour, with lecturer-student interactions taking place at the discursive level of the CF. The CF checklist proved useful for observing teaching from a variety of disciplines. Although experiential teaching and learning were not observed during any of the observed classes, there could be scenarios where this kind of teaching and learning happen.

5.8 Revision of Study-Units

Data about the processes followed by participants to revise their study-units was collected through the semi-structured interviews.

The participants were not planning any significant changes to their teaching approach in their study-units. They indicated that revisions are typically related to the content of the study-units. Darlene and Peter mentioned that the content of foundational study-units is less likely to change compared to study-units held towards the end of the programme of studies.

...because these are basic study-units, so there is really not much room to change, you know, these are foundations. (Peter)

The participants reported that these revisions are generally triggered by new research published in academic journals, societal events and the lecturer's research experiences. Sam, for example, implemented revisions to the observed study-unit following the introduction of new banking regulations after the financial crisis in 2012. Lillian has introduced new content in one of her study-units after attending a discipline-based conference. Edward reduced the content and introduced more focussed readings with subsequent iterations of the study-unit.

Formal student feedback at the end of the study-unit, casual conversations with students, and the marking of assignments/examination scripts trigger Edward, Lillian, Nathan, Omar and Sam to revise the content or make minor changes to teaching approaches in their study-units. Giselle, Lillian, Omar, Peter and Sam mentioned that after lectures they reflect on their delivery and how the students received the content of the lecture. Sam, for example, said that this reflection helped him refine minor aspects of his teaching approach: he slowed down the pace of explanations or changed the order of topics in a study-unit.

The issue of high workload featured again (Chapter 5.6) when the participants talked about changes to study-units. Several participants indicated that the implementation of revisions is dependent on the availability of time. The changes are usually implemented incrementally with subsequent iterations of the study-unit. Nathan mentioned that his administrative duties precluded him from keeping up to date with research related to his study-units. He solved this problem in part by tasking students to locate and summarise research published during the last 5 years.

Therefore, what I am doing in some courses is I create a, erm, a forum where students upload and I give the students themes, and they check on each team, erm, the main articles and journals that they are finding for the last five years. (Nathan)

Nathan then used the students' research to revise the content of the study-units. This suggests that the students unknowingly acted as partners in designing his study-units.

David, Peter and Sam described the revision process of the tutor's notes; they wrote brief comments in their notes during or immediately after the lecture. The notes were then updated shortly before the next iteration of the study-unit.

Analytical Reflection

Revisions to study-units are mainly triggered by new research within disciplines, student feedback and lecturers' self-reflections. Some participants refined their teaching approaches as a result of the student feedback and lecturers' self-reflections. The PD course delivered later on in this research study will encourage participants to reflect on and discuss how they can improve their pedagogical practices.

The PD course will include activities where academics try out new approaches or enhance their pedagogical practices. Participants will be encouraged to try small scale changes to their current pedagogy. This will be consistent with the participants' view that changes to study-units are incremental. Radical changes to teaching practices may be too disruptive for academics and may adversely impact the students' learning.

The high workload concerns mentioned by academics made it necessary to consider the time commitment required to complete the PD course. The content and activities that will be presented in the course need to be both manageable and

relevant to the participants. The academics will be assisted to manage their commitment to the course by documenting the time required to complete each learning activity.

5.9 Discussing Teaching Practices

During the interviews the participants were also asked if they discuss their lectures with colleagues and if they follow trends in teaching methodologies in their disciplinary areas.

All participants indicated that their discussions are generally focussed on disciplinary research rather than on class teaching. Omar and Sam mentioned that their high workloads did not allow time for discussions about teaching. Omar also claimed that academics do not usually discuss teaching because they fear criticism. Peter claimed that academics are unable to discuss teaching systematically because they were trained as researchers in their disciplinary fields rather than as educators. Giselle's professional discussions with her colleagues were mostly related to administrative aspects of teaching, for example attendance, assessment and plagiarism policies. Lillian reported that once she had asked colleagues about their student groupings procedures. Darlene mentioned that she discussed the students' classroom behaviours and their approach to learning. Steve discussed teaching with his wife who is a secondary school teacher. Edward and Omar mentioned that their participation in a PD programme that they followed in the past enabled them to discuss concerns related to teaching with academics from different departments. Edward, interestingly, said that the discussions around teaching continued beyond the PD programme:

I think we discuss more research rather than teaching. However, um, from time to time, I still meet people who were with me for that teaching course accidentally or sometimes, we've organised little reunions and invariably the group talk is about teaching. So, when I do meet these particular individuals, I think it is natural that we also talk about teaching.

Only Edward reported that he followed trends in teaching methodologies in his disciplinary field. He followed the teaching styles adopted by academics teaching history at other universities. During conferences, he usually tries to share experiences about teaching with other participants. In recent years, he became particularly

interested in debates regarding the effectiveness of face-to-face and online teaching of history courses. Amongst the other participants, David and Peter had attended conferences that included sessions focused on teaching methodologies in their subjects. Giselle argued that the institution did not encourage academics to follow trends in teaching methodologies in HE. She said that in academia there is a 'snobbish perception that teaching is less important than research'. Darlene said that she was not aware of ways to improve teaching in health science subjects.

Analytical Reflection

The participants engaged in professional discussions around disciplinary research and they reported that they found these useful; however, they hardly discussed their teaching. This finding confirms claims made elsewhere that academics discuss research and administrative matters, and course curricula, but they do not really talk about teaching and learning (Romano *et al*, 2004). In general, they treated their classroom practice as a private affair. In doing so, they may be missing on opportunities to enhance their pedagogical practices through inputs and ideas of their colleagues (Haigh, 2005). Pedagogically-focussed PD courses provide a formal setting where academics discuss concerns and successes about their teaching practices. As indicated by Edward and Omar, including academics from different disciplines in these courses, brings in a diversity of perspectives on teaching methodologies. Such courses are also a stepping stone for them to establish relationships that last beyond the course. They can continue discussing teaching issues after the course. It is envisaged that the PD intervention will lead to the formation of a community of learners. After following this online course, the academics will be encouraged to continue using the online discussion boards to share their teaching successes and concerns.

Academics may be less likely to change their teaching practices if they do not follow trends in subject teaching methodologies. The PD course will encourage participants to locate resources related to the scholarship of teaching and learning in their subject areas.

5.10 Teaching Concerns & Future Use of Learning Technologies

During the interviews the academics were prompted to share their concerns about teaching and their plans for future use of learning technologies.

Six participants expressed concerns about their high workload and the time required to update the study-units and innovate teaching. They claimed that they lacked the time: (a) to learn how to use technology; (b) to develop digital learning resources; and (c) to use the VLE during term time (Table 5.12). Giselle mentioned that she is constantly struggling to balance the competing demands of teaching and research.

Six participants expressed concerns about students who are passive in class and lack the motivation necessary to achieve high grades in assignments and examinations. Steve, for example, complained about students who did not take notes during lectures and paid attention only to explanations relevant to their assessment. Omar said he cannot understand why students do not make the necessary effort to work through problems presented during tutorials that will help them get a higher grade in the examination. These academics spoke about their interest in adopting teaching strategies that would challenge and inspire these students. Edward and Nathan voiced their concerns about teaching that does not engage student groups they described as the 'Net generation' or 'digital natives'; both expressed an interest in learning about teaching strategies that can better engage these students.

Table 5.12: Participants' concerns about teaching

Concern	Participant/s
Lack of time & high workload	Darlene, Giselle, Nathan, Omar, Peter & Sam
Engaging students	
- Passive students	Darlene, Giselle, Omar & Steve
- Net generation	Edward & Nathan
Large group teaching	Giselle & Lillian
Managing groupwork activities	Steve
Content of study-units	Darlene & David

Giselle and Lillian spoke about their anxieties when they are required to teach large groups.

So, having a class, I don't know of 120, 150 students to me, it becomes quite daunting because automatically that makes, that puts me in the position of having to do more traditional teaching, you know, more kind of lecturer talking in the class. (Lillian)

As indicated earlier, Giselle and Lillian were observed teaching small student groups and their classes were highly interactive. They wanted to learn about pedagogical strategies that promote student interactions when teaching large groups. Steve was interested in learning how to manage groupwork activities and encourage contributions by all students.

Darlene and David articulated concerns about the content of their study-units. Darlene, for example, is challenged by the vast amount of material that needs to be covered in study-units. David is often unsure about the level of content detail required to maintain the balance between student interest and academic rigour.

In terms of future use of learning technologies, the majority of participants mentioned that they wanted to move beyond the use of the VLE as a repository of learning resources and learn about the intermediate and advanced features of the VLE (Table 5.13). Edward, Lillian and Sam mentioned that in the future they were going to teach in an online programme of study and they wanted to learn how to use the VLE effectively to deliver online study-units. Sam and David spoke about their negative experiences of online learning. Sam was involved in an online course where lecture recordings were uploaded on the VLE and there was minimal communication between the lecturers and the students. He mentioned that several students ended up not completing the online course. David experienced low student participation when he organised an online discussion in a study-unit. He wanted to learn about discussion boards in the VLE and how to encourage student participation in online discussions.

Six participants mentioned that they wanted to learn how to record lectures and add voice-overs to electronic presentations, and make these available in the VLE. Sam wanted to know how to embed videos from video-sharing sites in the VLE so that his students can view talks by industry experts. He also wanted to set up multiple-choice quizzes in the VLE. Omar mentioned that he wanted to learn how to deliver explanations using the document camera and transmit these virtually in real-time to students. Giselle was planning to increase the use of social media in her study-units whilst Steve wanted to introduce simulations and games software in his study-units.

Table 5.13: Future use of learning technologies

Learning Technology	Participant/s
Use of intermediate & advanced features of the VLE	Darlene, David, Edward, Giselle, Lillian, Nathan, Omar, Peter, Sam & Steve
Develop digital learning objects e.g.:	
- Recording lectures or adding voice-overs to electronic presentations	Edward, Giselle, Lillian, Omar, Peter & Sam
- Automated multiple-choice quizzes	Sam
Use of VLE for fully online study-units	Edward, Lillian & Sam
Use of online discussion boards	David, Giselle
Use of document camera to assist students remotely	Omar
Use of social media for teaching	Giselle
Use of life-based studies & games software	Steve

Analytical Reflection

Some of the teaching concerns mentioned by participants (such as lack of time to innovate and how to engage students in class) and how these will be addressed through the PD intervention have already been covered in earlier sections. The PD course will cover teaching strategies that can help the participants to introduce student interaction in large classes. The academics will also be assisted to reflect on the detail and quantity of content covered in their study-units. The course will also include use of the various technologies and features of the VLE mentioned by academics (Table 5.13). Additionally, academics will be provided with opportunities to learn, think about, and discuss the use of these technologies and the VLE features.

5.11 Summary

This chapter documented the findings and reflections on data collected through semi-structured interviews, analysis of teaching-related documents and the VLE, and class teaching observations. The aim of this research phase was to develop an understanding of the teaching practices of the participants. The activities undertaken during this stage generated a list of participants' needs used to inform the design, development and delivery of the PD course about teaching and learning technologies. Some of these needs were articulated by the academics during the interviews. Other needs were generated through inference, that is, through an analysis of the collected data (Table 5.14).

Table 5.14: Participants' learning needs

Learning needs articulated by participants	Learning needs inferred through analysis
Time to revise the content of study-units and teaching practices.	Time-efficient PD course.
Pedagogical strategies to engage passive and digitally-savvy students.	A collegial environment that supports sharing and reflections about teaching and learning.
Strategies for effective teaching of large groups.	A practice-oriented PD. Avoid too much educational theory. Connect the learning theories to pedagogical practices.
Strategies to facilitate groupwork activities.	Showcase baseline use of the VLE for class-based study-units.
Identifying content of study-units (quantity vs rigour).	Activities that support the design and development of study-unit descriptions including documenting LOs.
Skills to use the intermediate and advanced features of the VLE for class-based, blended and online study-units.	Encourage academics to identify online resources related to discipline-based teaching.
Skills to develop digital learning objects e.g.: recording lectures or adding voice-overs to electronic presentations, automated multiple-choice quizzes.	Activities that enhance questioning techniques.
Skills to use visualisers to assist students remotely.	Activities that encourage academics to reflect on assessment.
Ideas how to use social media, life-based studies and games software for teaching.	Opportunity to try out a small-scale technology-enabled teaching innovation. Changes in teaching practices are incremental otherwise these may disrupt student learning.

The class observations showed that with this group of participants teaching occurred specifically at the discursive level of the CF. The CF checklist proved useful for observing teaching from a variety of disciplines. Although experiential teaching and learning were not observed during any of the observed classes, there could be scenarios where this kind of teaching and learning happen.

The teaching style adopted by the majority of participants in this study was lecture-based teaching. Student-teacher interactions were observed during the teaching sessions of all participants. Student-student interactions were less common; these were observed in the classes of six participants. None of the observed sessions involved only one-way lecturer to student teaching. All teaching sessions featured student interactions in the form of questioning or discussing. This evidence

contradicts the widely held assumption that the transmissive lecture is a common teaching approach in many HEIs (Twigg, 1999; Bligh, 2002).

Class teaching observations, although time-consuming for the researcher, revealed aspects of teaching practices which were not revealed by other data collection methods. During the interviews, for example, several participants reported that, in class, they are not explicit about the learning outcomes of a session or activity. This was contradicted by evidence collected during class observations. Academics' self-reports about their teaching practices should be treated with caution; they may not always be able to claim good teaching practices.

The implications arising from (a) the detailed description of the teaching practices of these academics (reported in this chapter), and (b) the research literature about academic development (Chapter 2) informed the decisions about the design, development and delivery of the PD course described in the next two chapters. This PD intervention was based on a detailed understanding of the teaching practices of these academics following an analysis of data collected during class observations, interviews and of teaching-related documents. The value of this PD, therefore, is its relevancy to the needs of the research participants. Some of the themes that will be addressed during the PD course include:

- a) Learning theories and classroom practices.
- b) Designing and developing study-unit descriptions.
- c) Content of study-unit areas on VLE.
- d) Use of communication tools in the VLE.
- e) Assessment activities and marking rubrics.
- f) Time-saving strategies to revise or develop content of study-units and enhance teaching practices.
- g) Reflecting about the potential of the available learning technologies to enhance teaching and learning.
- h) Engaging passive and digital native students.
- i) Strategies to foster reflections on and discussions around teaching.
- j) Enhancing questioning techniques.
- k) Large group teaching.

- l) Use of intermediate and advanced features of the VLE.
- m) Recording lectures or and voice-overs to electronic presentations.

The next chapter describes the activities undertaken to design, develop and deliver the first part of the PD course.

Chapter 6: Designing and Delivering the Professional Development Course (Part A)

6.1 Introduction

Chapter 5 documented the findings and analysis of data collected through class observations, interviews, and the analysis of both teaching-related documents and use of the VLE to develop a better understanding of the teaching practices of the participants. The implications arising from (a) the detailed description of the teaching practices of these academics (Chapter 5), (b) the research literature about academic development (Chapter 2) and (c) the desk research about the curriculum of TEL courses offered by educational institutions (reported in this chapter), informed the design, development and delivery of the first part of the PD course. This chapter presents the analysis of the participants' posts in the online discussions of the first part of the PD course. Further interpretation of this analysis, linking it directly to the research questions, will be presented in Chapter 8. A summary that leads to the final phase of this research concludes this chapter.

6.2 The Professional Development Course (Part A)

This phase of research, running over a period of eight months, involved the design of the content and the delivery of the first part of the PD course about teaching and learning technologies (Table 6.1).

Table 6.1: Timeline of research activities

Activity	Timeline
Design & development of PD course (Part A – Topics 1, 2, 3 & 4)	June 2014 to February 2015
Delivery of PD (Part A - Topics 1, 2, 3 & 4)	November 2014 to February 2015

The design, content and delivery of the PD course were based on: (a) the needs identified during the earlier phase of research (Chapter 5); (b) the findings of the literature review about HE, models and frameworks for university teaching, TEL and academic development (Chapter 2); and (c) desk research about the curriculum of TEL courses offered by educational institutions/organisations. The next section presents the main principles which guided the design of the PD course.

6.2.1 Design of the Professional Development Course

The PD course was designed with a primary emphasis on pedagogy rather than technical training in the use of specific learning technologies. As discussed in Chapter 2, the teaching practices of academics are mostly influenced by their beliefs and conceptions of teaching (Kember and Kwan, 2000) and their foci of attention about teaching (Åkerlind, 2007). Their teaching practices range along a continuum from 'teacher-focussed' or 'content-oriented' transmission models of teaching (Entwistle and Walker, 2000), to 'student-focussed' or 'learning-oriented' transformation models of teaching (Kember, 1997). Academics adopting a 'teacher-focussed' approach often use technology as a means of delivering information. In 'learner-focussed' teaching, academics make more use of the interactive, communicative and collaborative capabilities of technology (Laurillard, 2010). The primary aim of the PD course in this research study was to help participants increase their awareness of the different teaching orientations in HE such that their future use of technology can contribute to better student learning. Exposing the academics to different theories of learning and encouraging them to reflect on how these theories can be connected to their class practices will initiate the process of changing their teaching practices (Romano *et al*, 2004). The intent of the PD course however, was not to persuade academics to change their teaching practices to a preferred pedagogical practice. As discussed in Chapter 2, there is no single pedagogical approach appropriate for all university teaching. Instead, the aim of the PD course was to help academics think about different pedagogical practices and how they can adopt these for better student learning outcomes. The change in teaching practices envisaged through this PD intervention was to initiate a shift from teaching designs based on a few pedagogical practices, that often follow disciplinary teaching traditions, to teaching designs informed by a wider repertoire of pedagogical practices. Therefore, although the PD course addressed skills training on the use of various technologies, the main emphasis was on initiating change in the pedagogical practices of academics. This pedagogical focus guided the design, content and delivery of the PD course.

The 'teach as you preach' principle also guided the design, content and delivery of the PD course. This principle urges teacher educators to be good models of the kind of teaching they are trying to promote (Swennen, Lunenberg and Korthagen, 2008). Consequently, 'teach as you preach' is about modelling good teaching practices that academics could adopt in their teaching. The PD intervention

showcased for example, how course material can be organised in the VLE. Participants were presented with a course syllabus with aims and learning outcomes. Different teaching approaches were demonstrated during the PD course in conformity with the belief that there is no single pedagogical approach appropriate for all university teaching. A mixed-pedagogy approach would better serve the needs of the participants and today's diverse student body. The course featured both transmissive teaching and learner-centred teaching done well in an online context. The participants were presented with, for example, literature about educational theory, which they had to read and understand – this is transmissive teaching. Another example involved the presentation of step-by-step instructions to use the student grouping features in the VLE. The PD course also featured activities where participants, for example, engaged in a peer discussion about the learning theories informing their teaching practices – this is learner-centred teaching. The design, content and delivery of the PD course did not overemphasise any specific pedagogical practice, otherwise I would be signalling to participants that there is a right and a wrong way of doing university teaching (Price and Kirkwood, 2008). The course provided a learning environment where the academics could experience first-hand and value student-centred pedagogical approaches. Rather than delivering information about teaching practices and technologies that can better engage students, I modelled teaching practices and used technologies to engage the participants with the course material. Consistent with the 'teach as you preach' principle, academics who experience a diversity of teaching practices and reflect on their educational value, should be better equipped to choose and adopt pedagogical practices that are appropriate for their teaching context.

The design of the PD course was also guided by Lawler and King's strategies (2001) for adult learning (Chapter 2.6.2).

- a) The PD course provided a climate of respect towards the participants' conceptions of teaching and learning, their disciplinary areas, their teaching experiences and their attitudes towards change.
- b) The design of the PD course included activities that encouraged the active participation of academics. The design, content and delivery addressed the participants' needs and concerns that emerged during the earlier phase of this study.

- c) The PD course encouraged the academics to share their positive and negative teaching experiences with their colleagues. These shared experiences provided an additional resource for learning and may have encouraged academics to consider pedagogical changes.
- d) The PD course included a collaborative inquiry activity where participants documented a technology enhanced teaching activity that they were planning to include in one of their study-units. The participants were required to present their activities to their peers for critique and suggestions.
- e) The PD course provided the academics with opportunities to design and develop teaching and learning activities that they could use in their study-units.
- f) The PD course encouraged the academics to reflect on those factors which enabled or hindered them from implementing teaching innovations. This approach helps to empower academics to put their learning into action.

The design of the PD course was also based on the CA theory (Biggs and Tang, 2007), which is a widely accepted principle of pedagogically sound course design. As indicated in Chapter 2, the CA theory advances the principle of aligning the intended learning outcomes, the teaching and learning processes and assessments in a course. The CA theory, in particular its emphasis on aligning assessments with the intended learning outcomes, has its limitations for the design of non-award bearing courses such as the PD course in this research study, since this did not involve any formal assessments. The 'backwash effect' concept, where assessments determine what and how students learn (Watkins, Dahlin and Ekholm, 2005), which is a key element of the CA theory, is therefore not applicable to the PD course. The participants' learning during the PD intervention was driven by the course learning resources and activities rather than formal assessments. Nonetheless, the design of the PD course was guided by the CA principle of aligning learning outcomes and teaching learning activities. The findings presented in Chapter 5 and the literature-based work about TEL and academic development, assisted me to determine what participants should achieve (knowledge, skills, etc.) from engaging with this PD intervention. Due consideration was given to the teaching approaches, learning resources and activities that could be included in the PD course to demonstrate that participants achieved the learning objectives. The participants were

provided with clearly specified learning outcomes for each topic presented in the PD intervention. The purpose of each learning activity was also stated. The course did not feature any formal assessment tasks; however, the participants' activities were monitored closely and feedback was provided.

The design and delivery of the PD course were also guided by the CF (Laurillard, 2012). As discussed in Chapter 2, the CF represents the undergraduate learning experience as a process of interactions between the lecturer, the learner and peer learners occurring at the discursive and the experiential levels. Learning takes place when these two levels are connected by the processes of adaptation and reflection. Several influential learning theories, including instructionism, constructionism, socio-cultural learning and collaborative learning, can be represented on the CF giving a detailed description of the process of academic learning. Laurillard (2002) argues that each digital technology has the potential to deliver one or more of the interactions described in the CF. During the design and delivery of the PD course, I adopted a combination of teaching methods and technology to cover several of the iterative processes described in the CF. As indicated earlier, I adopted teaching practices that showed how technology could support both the presentational and interactive aspects of learning which in turn may assist participants with the reflective and adaptive aspects of learning.

The CoI theoretical framework (Garrison, Anderson and Archer, 2001) was used to guide the delivery process of the PD course. In recent years, innovative approaches to university teaching and learning are informed by a learning paradigm based on the constructivist and social constructivist theories. As indicated in Chapter 2, learners construct meaning through a combination of personal reflection and collaborative processes. They refine their personal knowledge when they discuss and debate a diversity of perspectives within a community of learners. The interactions within a community of learners encourage critical and creative inquiry. Garrison and Vaughan (2008) believe that the ideal educational experience is this collaborative constructivist process that has inquiry at its core. They claim that university educational experiences are best conceived as communities of inquiry. Therefore, the PD course, with its delivery process based on the CoI framework, was designed to enable the participants to experience learning in a community of inquiry. This learning experience is coherent with claims made in Chapter 2 that quality university education involves the students being actively engaged in the learning process. This was also relevant since the PD course was offered in a fully online mode; the CoI framework is

a widely accepted theoretical model of online learning (Bogle *et al*, 2014). As discussed in Chapter 2, the Col framework represents the online experience as a function of the interactions among three presences (cognitive, social and teaching presences) and suggests that these presences together are necessary for student learning. The PD intervention, therefore, was designed to help participants think about the elements that should be considered when they design and teach their own blended and online study-units.

The high workload concerns mentioned by academics during the earlier phase of the study (Chapter 5.10) necessitated due consideration of the time commitment required to complete the PD course. PD programmes of a long duration tend to have more impact and result in positive changes to the teaching practice of academics (Slavit, Sawyer and Curley, 2003; Hinson and LaPraire, 2005; Postareff, Lindblom-Ylänne and Nevgi 2007). However, given that the participants of my research study were voluntarily following the PD course over and above their normal teaching, research and administrative commitments, a decision was made to limit the duration of this course to six weeks. The content and activities presented in the course needed to be both manageable and relevant to the participants. The course was designed such that the participants would need to dedicate between three to four hours per week to read the literature, view the learning resources and work through the activities. The academics were assisted to manage their time and effort in the course by documenting the time required to complete each learning activity (Figure 6.1). The reading or viewing of learning resources were timed and indicative times for weekly online discussions were included.

During the design stage, due consideration was also given to the mode of delivery of the PD course. Research shows that PD courses delivered in a blended mode are welcomed by academics who are accustomed to class-based teaching, because the mix of in-class and online teaching reassures academics that F2F contact with students is preserved (Sharpe *et al*, 2006). Notwithstanding this research however, a decision was made to deliver the PD course completely online. This decision was based on three main reasons. Firstly, it would have been difficult to identify time slots during term time when all participants could meet in a physical class. In addition to this logistical issue, the participants would also struggle to keep up with the course when they are unable to attend an in-class session. A fully online course would make it easier for participants to schedule time around their university and personal commitments to follow the course. Secondly, an online course would give

the academics the same experience that students will have when they participate in a fully online study-unit (Salmon, 2000; Donnelly and O'Farrell, 2006). In addition to understanding the student perspective in an online course, the participants would be able to reflect on this delivery mode from the perspective of a tutor and a course designer. The PD course would therefore give the participants a vicarious experience of online teaching and learning. Thirdly, the majority of participants were already using the basic features of the VLE for their study-units, and during interviews they mentioned that they wanted to learn about the intermediate and advanced features of the VLE (Chapter 5.10). Several participants also mentioned that they wanted to experience online teaching and learning. Given the participants' interest in the VLE and their interest in experiencing online learning, I concluded that the participants would benefit from following a fully online PD course online.

Figure 6.1: Screenshot showing Topic 2

2. UNDERSTANDING LEARNING & LEARNERS

LEARNING OUTCOMES

This week's activities will help you:

- Explain the concepts: deep learning and surface learning.
- Identify strategies to encourage students to adopt a deep learning in your study-unit.
- Review the main theories of learning: associative, constructive and situative.
- Reflect on the theory (or theories) of learning informing your teaching practice.

 Week 2 - Facilitator's Presentation (13 mins)

REQUIRED READINGS & VIEWING VIDEO

 Videos: 'Teaching Teaching & Understanding Understanding' (20 mins)

 Required Reading: Approaches to Learning (10 mins)

 Required Reading: The Higher Education Academy: Deep & Surface Approaches to Learning (15 mins)

 Required Reading: Theories of Learning (35 mins)

DISCUSSION

 Discussion: Approaches to Learning & Theories of Learning (90 mins)

Optional Activity

 Video: Memorisation or understanding: are we teaching the right thing? (45 mins)

The design of the PD intervention also took into consideration the teaching context of the participants. A decision was made to integrate those technologies which were available at the participants' institution. The course was delivered through the institutional VLE so that the participants would learn through the same technologies

that they could then use with their students. The design and delivery of the course were coherent with the guidelines and policies of the participants' institution. The content in the VLE area dedicated for the PD course, for example, reflected the institutional guidelines regarding the content of the study-unit areas on the VLE. The instructions regarding the setup of assignment dropboxes and the use of the plagiarism detection software followed the institutional policies.

Consideration was also given to the quantity and quality of learning resources used in the course. The quantity of learning resources presented in the course was limited in order to minimise the risk of participant withdrawal from the course and to send a signal to the participants that a small number of carefully selected learning resources could engage students in deep learning. Related to this, I also wanted to demonstrate that online learning is not simply publishing existing F2F course content online. The learning resources were selected on the basis of their potential to address the participants' needs identified during the earlier phase of this study (Chapter 5). Primary sources which were deemed as highly relevant and essential to the course aims were included. Literature containing complex and lengthy educational discourse was avoided. I compiled extracts from primary literature and research studies to introduce participants to the main ideas of educational theory and frameworks for university teaching. These summaries included references to primary sources for those participants who wanted to pursue further reading. The materials presented in the PD course also included digital resources found in online repositories of OERs, video-sharing websites and educational/organization websites. This approach conveyed the message that before developing learning resources and activities, the participants should try to locate content that is already available and that can be used for their study-units.

The next section presents the content of the first part of the PD course.

6.2.2 Content of the Professional Development Course (Part A)

The content of the PD course was informed mostly by desk research about the curriculum of TEL courses offered by educational institutions/organisations and the identified needs of the participants.

During the course of this research study, in particular between June 2014 and February 2015, I searched through the Internet to identify the typical content of

TEL courses aimed at university academics. This research was done in five stages. The first stage involved visiting the websites of universities in Australia (Appendix F: Table F.1), United Kingdom (Appendix F: Table F.2) and United States (Appendix F: Table F.3) which ranked highly on the 'Centre for World University Rankings' website. This research showed that almost all universities offered short workshops focussed on the use of technologies. These workshops were usually offered through TEL units which were typically attached to a central IT department or an academic development unit. As indicated earlier, the main emphasis of the PD course in this research study was going to be on pedagogy rather than skills training on learning technologies. The scope of the desk research was therefore broadened to include courses about university teaching and learning. The second stage of research involved re-visiting the websites of the universities visited during the first stage to identify such courses. This research showed that many universities offered postgraduate certificates in HE teaching and learning. The third stage of research involved searching through the online course finders and course handbooks to determine the curriculum of these programmes of study. Several universities offered TEL modules as part of their certificate programme of study (Appendix F). These modules were offered as electives and delivered in a variety of modes: F2F, blended and fully online. Although several universities did not offer stand-alone TEL modules in their teaching and learning certificate courses, there was evidence that TEL was covered in the other modules. For example, one of the learning outcomes of the module 'Developing and Enhancing Academic and Professional Practice' offered by Bangor University was: 'Critically reflect on the use and value of recent technology-enhanced learning developments in higher education'. The fourth stage of the desk research involved analysing the module descriptions to determine the typical content of TEL courses. Some universities did not publish details beyond the general overview of the course. Where full module descriptions were published, there was clear evidence that the TEL courses had a pedagogical orientation. The desk research also involved visiting websites of non-university institutions which offered TEL courses aimed at academics (Appendix F: Table F.4). The fifth and final stage involved listing the topics mentioned in the TEL module descriptions offered by universities and other institutions and organising these topics in four themes (Table 6.2).

Table 6.2: Themes in TEL courses

Theme	Topics
Organisational elements	<ul style="list-style-type: none"> ▪ Drivers for change in HE ▪ Rationale for TEL ▪ Affordances of technology ▪ Quality of blended and online courses
Understanding learning	<ul style="list-style-type: none"> ▪ Understanding learners ▪ Deep & surface learning ▪ Learning paradigm; Transforming teaching ▪ Theories of learning ▪ Collaborative learning
Course design	<ul style="list-style-type: none"> ▪ Constructive Alignment theory ▪ Bloom's taxonomy for defining learning outcomes ▪ Frameworks for TEL ▪ Community of Inquiry framework ▪ Designing a teaching activity using learning technologies ▪ Designing & developing digital content ▪ Sourcing free e-learning resources – Open Educational Resources ▪ Assessment using learning technologies ▪ Facilitating online learning
Identity of academics	<ul style="list-style-type: none"> ▪ Changing role of academics ▪ Reflective practitioner ▪ Portfolio of work

All topics listed in Table 6.2, except for 'Portfolio of work', were included in the PD course. Given that this was a voluntary non-certified course, requiring academics to submit a portfolio of work would have added a substantial workload to their busy schedule. The content and activities presented during the PD course were developed as follows: the rationale for each theme included in the course was documented followed by the design and development of learning resources and activities related to the theme. As indicated earlier, the PD intervention needed to be relevant to the participants. Therefore, the inclusion of each theme was informed by desk research evidence as well as the identified participants' needs (Chapter 5.11). Table 6.3 shows the rationale and content/activities for one of the themes (Understanding learners) included in the PD course. Appendix G shows this information for all the themes covered during the first part of the PD course.

Table 6.3: Content and activities for the theme ‘Understanding learners’

Theme	Rationale	Content & Activities
Understanding learners	<p>During the first interview, academics expressed concerns about students who are passive in class and lack the motivation necessary to achieve high grades in assignments and examinations.</p> <p>Understanding the learners’ motivations to study can help academics better engage with students.</p> <p>Academics should reflect on how their teaching influences the students’ approaches to learning. This will help academics identify teaching strategies that encourage students adopt deep learning approach in their study-units.</p> <p>The themes ‘understanding learners’ and ‘deep/surface learning’ featured in the curriculum of many TEL courses.</p>	<ul style="list-style-type: none"> ▪ Video: ‘Teaching Teaching & Understanding Understanding.’ ▪ Reading: ‘The Higher Education Academy: Deep & Surface Approaches to Learning.’ ▪ Reading: ‘Approaches to Learning’ (compiled notes) ▪ Discussion: ‘Approaches to learning and theories of learning’. The first part of this discussion will focus on approaches to learning. The participants will be invited to reflect on their undergraduate student experience and identify examples where they engaged in rote learning. They were required to discuss if such rote learning was useful for understanding the subject. They will also be invited to reflect on their least favourite study-unit and discuss the learning approaches adopted by students. ▪ Video: Memorisation or understanding: are we teaching the right thing? (Eric Mazur, 2014).

The content of the first part of the PD course (Topics 1, 2, 3 and 4) was organised as shown in Appendix H. The first part of the PD course addressed all needs identified by participants except for: (a) engaging digital native students; (b) large group teaching; (c) time-saving strategies to revise or develop content of study-units and to enhance teaching practices; and (d) recording lectures and voice-overs to electronic presentations. These needs were addressed in the second part of the PD course (Chapter 7).

The PD course was titled ‘Technology Enhanced Learning, Teaching & Assessment’. All topics followed the same format in terms of organisation of learning resources, discussions and activities in the VLE (Appendix H). This consistency does not imply that there is a single ideal approach of presenting topics in online courses. Various teaching approaches were represented within the different sections of the PD course. Each topic included:

- a list of 3 to 5 learning outcomes;
- a short (8 to 16 minutes) presentation with voice-over to introduce the main themes and activities;
- required readings or viewing of videos; and
- a discussion forum where participants submitted postings about the topic. This forum was also used to post my commentary at the end of each topic to summarise the main themes and issues discussed by the participants and to highlight areas for further reflection.

The course structure distinguished clearly between ‘required readings/activities’ and ‘optional readings/activities’. The latter were included so that participants can further their knowledge beyond the ‘required activities’ and to send a signal that they can take a step further in their learning.

The VLE of the PD course included a header block (Appendix H) containing:

- *Classroom Announcements* – This forum was used regularly to introduce the participants to the learning resources and activities of each topic and to communicate important information and reminders about the course.
- *Help Forum* – This forum was used by participants to post questions about the course and technology. The participants were encouraged to reply to the posted questions. I also used this forum to post technology tips and step-by-step instructions to use particular features of the VLE.
- *Course Syllabus & Schedule*
- *Netiquette for Online Discussions* - Given that many course activities revolved around online discussions, a set of guidelines on acceptable social interaction was provided.
- *VLE Training & User Guides* – A link to the help documentation available on the IT Services department website and the contact details of the technical helpdesk were also provided. The participants of the PD course were already familiar with the basic features of the VLE because in the past they attended the VLE Getting Started workshop.

- *Glossary* – This was used to post definitions of terms used in TEL. The participants were encouraged to add terms that could be useful to share.

The next section presents an overview of the delivery of the PD course.

6.2.3 Delivery of the Professional Development Course

In October 2014, I sent an email (Appendix I) to the participating academics (10) to inform them about the continuation of the research study. The email contained information about the PD course: (a) the syllabus; (b) the course schedule; and (c) the time commitment to follow this online course. The academics were invited to indicate whether they were able to participate in the PD course. All academics except Darlene responded in the affirmative. Darlene informed me that she was unable to continue with her participation in this research study because she needed time to fulfil her editorial role in an academic journal. She expressed her interest in following the PD course if this was offered again in the future. She gave me permission to use the data collected for the purposes of this research study.

The PD course commenced during the last week of October 2014. The original plan was to deliver the course over a period of six weeks. In January 2015, the participants would be assisted to design a technology-enabled teaching activity for one of their study-units. They would then try this activity with students during the following semester, that is, between February and May 2015, and report back about their experiences to the participants of the PD course. Significant adjustments were made to this plan. By the third week of the course, it was evident that the planned schedule of the course required modifications. Several participants did not manage to work through all the activities of Topic 3 (Pedagogical Models & Frameworks for TEL – Part A) by the end of the third week. To minimise participant drop-outs from the PD course, the duration of this topic was extended by another week to allow more time for the completion of the activities. The participants welcomed this extension and completed Topic 3 activities by the end of November. At the same time, several participants indicated that it was going to be difficult for them to commit time to the PD course during December. A consensual decision was taken to take a break from the course and continue in mid-January 2015.

This break was also convenient for me because the demands of the course delivery and the preparation of learning resources proved much higher than anticipated. Although a significant amount of learning resources and activities was prepared prior to the beginning of the PD intervention, several of these were revised during the course. For example, some readings about key learning theories and frameworks for TEL were replaced with concise summaries. The wording of online discussion prompts was also improved before making these available in the VLE. The time required to facilitate this online course and manage its content was underestimated. In mid-January 2015, the PD course commenced with the Topic 4 (Pedagogical Models & Frameworks for TEL – Part B). The main activity of this topic required academics to design an online discussion for one of their study-units and present this to the course participants for feedback. The timing of this topic coincided with the end of semester examinations. Topic 4 was covered in three weeks ending in February 2015. The delivery of topics 5 and 6 of the PD course and the findings from another set of semi-structured interviews, are reported in Chapter 7.

The original plan included a F2F session prior to the start of the online course to introduce the participants to one another and provide an overview of the content and process of the PD course. This plan was abandoned because it proved impossible to identify a time when all participants could make it. However, I was not concerned that this meeting could not take place because I was aware that most of the participants already knew each other.

Six academic staff completed all the activities of the course. Lillian did not start the course, whilst Steve withdrew his participation from the PD course after the first two topics. Both participants indicated that their commitments precluded them from following the course. They gave me permission to use the data that was collected for the purposes of this research study. Nathan's participation in the PD course was irregular because of his family commitments.

After discussing the principles guiding the design of the PD intervention and presenting the content of the first part of course and an overview of its delivery, I will present the observations and reflections made during the first part of the PD course.

6.3 Analysis of the Forum Posts (PD Course - Part A)

6.3.1 Topic 1 - Introduction

The PD course commenced with a welcome message posted to all participants via the 'Class Announcements' forum on the VLE. This post contained information about the activities of the first topic. I recorded a presentation to introduce the participants to the structure and requirements of the course (Appendix H). The participants were required to set up their profile, upload a profile photo and post some information (their subject area, the technologies they used in teaching, their personal goals for the course and any other information they wanted to share) in the 'Introductions Forum'. This activity was intended to establish connections between participants and increase their sense of social presence online. All participants set up their profiles and submitted postings to the 'Introductions Forum'. Lillian has set up her profile and posted to this forum after the course has started. The participants' activity in this forum was high: the participants greeted each other and commented on postings. This forum revealed information about the participants' teaching practices and their views about TEL. Some of this information was already known through the individual interviews and the class observations described in Chapter 5. David for example, wrote about his experience of the VLE in cultural courses (Chapter 5.10):

In these classes, I have experimented with VLE, but the results have not been satisfactory so far.

The 'Introductions Forum', however, also revealed new information about some participants. Giselle, for example, mentioned that sometimes she used background music in class during group discussions:

I like to use music videos as background music during group discussion sessions - I find that students seem happier to discuss in small groups when there is music in the background.

During the interview (Chapter 5.6), Sam indicated that he did not use electronic presentations because these restrict him during teaching. His post in the 'Introductions Forum' revealed that he also lacked confidence with presentation technology:

It's true that during a PowerPoint presentation you need not go through every slide. However, I tend to "panic" a bit if I had to skip through slides or look for a particular slide during the presentation... so there is definitely room for improving my skills!

The participants' postings were therefore an echo of the earlier research findings as well as a source of additional information.

Giselle's post about her use of background music prompted Edward to express his intention to try this out in class:

I like your idea of background music videos; that could work really well for a history discussion with so many good pieces available of historical music scripts. Will try it out. (Edward)

Sharing pedagogical practices therefore, encourages academics to reflect on and consider changes to their teaching practices. Here, an academic from the Arts discipline is expressing his intention of adopting a teaching practice shared by an academic from the social sciences discipline. This is evidence related to the research question on the kinds of academic development activities that can assist academics to change the way they think about teaching and consider changes to their pedagogical practices. Focused learning conversations provide academics with new insights that may lead to intentional change to enhance their pedagogical practice.

Another activity in Topic 1 required the participants to read an account of an academic (Tim Bourner) reflecting on how his concept of 'what is higher education for?' has changed during his teaching career. The journal reading concluded with six learning aims that the author claims to be of central importance in university education. A set of discussion prompts were presented to help the participants to reflect on these aims in relation to one of their study-units and share their reflections in the discussion forum. The participants' activity in this forum was high. There were forty-two posts in this forum; an average of five posts per participant including myself as a facilitator. The posts revealed that the reading and online discussion served their purpose of promoting participants' reflections on the aims of HE and their conventional teaching practices.

Aim 4: facilitate character building/personal development, I must admit that this has never been a conscious aim of mine as a lecturer, however, on reflection, I realize that when I emphasise the importance of sticking to deadlines, of sharing opinions and ideas within

discussions... these are all done with the aim of showing the students the importance of following expected norms within academia... (Giselle)

In addition to reflections about their teaching, the learning activities helped the academics to articulate their reflections about the pedagogical benefits of learning technologies. In this post, for example, David shared his reflections about the benefits of online discussions:

In our case, if classes are very interactive, online methods may be useful to help shy students express their opinions/ideas. So online methods of teaching may actually complement what we already do.

The forum postings also helped some participants to advance their thinking about teaching and learning. This post, for example, shows how academics can learn from discussions with their peers:

Interesting insight Giselle - which implies that through virtual interaction we can encourage more participation on part of students, who are usually silent in class. (Sam)

Peer observation of teaching was highlighted in one of the discussion threads. Edward and David posted that they would like to sit in each other's classes to observe the teaching practices.

David this is a fascinating subject and one day I might just join the study-unit. Since our two fields are kindred it is fascinating for me to see how you go about it and how you have reflected upon Bourner's aims. (Edward)

Indeed, Edward - our subjects are closer than we think, although the methods we use are probably very different (owing to the nature of our sources). But it would be an interesting exercise to sit in each other's classes. (David)

The sharing of practice between David and Edward has prompted them to think about observing each other's class teaching. Peer observation of teaching is a form of PD that helps academics to reflect and gain insight on their teaching skills (Millis, 2006; Cannell and Gilmour, 2013). The online discussion was not planned to encourage participants to try peer observation of teaching. However, the discussion between David and Edward led to this positive unanticipated outcome. This is evidence related to the wider research aim of understanding the effects of this PD intervention; the PD

course is not a simple causal intervention. As indicated earlier, the learning resources and activities served their purpose of promoting participants' reflections on the aims of HE. Additionally, there were also unintended outcomes of the peer contributions which helped participants to think about their teaching practices. The diversity of the participants' experiences is another pedagogic resource in this PD course.

The participants were also required to view a video about the characteristics of today's students (how they learn, what they need to learn, their aspirations, what their lives will be like, and what kinds of changes they will experience in their lifetime) and the implications to teaching. A reading summarising the main drivers for TEL was also provided. There were hardly any references to this reading and the video in the discussion forum.

The participants' experience of following the PD course as learners may serve the purpose of providing academics with pedagogical strategies that they can implement with their students. Giselle for example, wrote that the learning resources and the discussion activity engaged her into critical thinking:

I can see that this exercise James has set is a great way of getting me to think critically about the text - a good one to adopt, I reckon.

Exposing academics to models of technology-based instruction can support them to take pedagogically-informed positions on TEL.

6.3.2 Topic 2 - Understanding Learning and Learners

Topic 2 focussed on the students' approaches to learning and the theories of learning (Appendix H). The 'Class Announcements' forum was used to notify participants about the availability of learning resources and activities related to this topic. The recorded presentation introduced participants to: (a) the study motivations of university students; (b) changes in the students' conception of knowledge during their undergraduate course; (c) the students' approaches to learning; (d) the theories of learning; and (e) the learning resources and activities for the second topic. The participants were required to view a short video about university teaching and students' approaches to learning. The aim of this video was to help participants understand how the CA theory can enhance their teaching practices for better student learning. A document summarising the characteristics of different approaches to

learning (deep, surface and strategic) and strategies to encourage a deep learning approach, was presented. Another document summarising the different theories of learning (associative, constructive and situative) and their implications for teaching was also presented. After viewing the video and reading these documents, the participants were asked to reflect on their experiences of rote learning when they were students and if this type of learning facilitated better subject understanding. They were also asked to reflect on their least favourite study-unit and determine whether their students adopted a deep or surface approach to learning in this study-unit. The participants were also prompted to think about the questions they have set in one of their examinations and establish if students were able to get a good grade through rote learning. They were also encouraged to identify the learning theory or theories informing their teaching practices. The participants shared their reflections in the discussion forum generating thirty-two substantial posts including my final commentary post.

All participants recalled experiences of rote learning when they were following their undergraduate course. Interestingly, none of the participants commented negatively about rote learning; many of them explained how they managed to turn surface learning into deep learning. The forum posts revealed that the participants were intrinsically motivated by the subjects they were studying. The majority of participants reported that many students adopted a surface approach to learning in their study-units. Peter, Sam and Steve wrote that deep learning was more common amongst final year students, evening course students and mature students. Although the participants acknowledged that there is some foundational knowledge in every discipline which is often tackled through rote learning, they also mentioned that this type of learning should be discouraged through appropriate teaching strategies. The participants reflected on the teaching strategies they can introduce to help students engage in deep learning as exemplified in these posts:

The main change I would effect would be to distribute more work to them in terms of finding out what exists out there and bring two opposing-view (alternative) groups to debate and another group would serve as facilitators or reviewers. (Steve)

I occasionally adopt such approach, when asking students to solve problems in groups during the lecture, and then providing class feedback after all groups have attempted the problem/s. Having said this, I only organise such activities when time permits this. Given that now I understand better how such tasks make sense in a theoretical context as well, I shall make it a point to grant more importance towards these activities. (Sam)

The above posts show the participants' intention to adapt their teaching practices based on the newly acquired knowledge about educational theory.

The forum posts about surface and deep learning triggered a discussion on assessments that promote deep learning. The participants reported that the design of their examinations did not allow students to get a good grade unless there was substantial evidence of critical engagement with the content covered during the study-unit. Sam wrote that his exams contained both information recall questions and discussion questions. There was also a discussion around take-home assignments and examinations. Sam agreed with David that assignments were better at promoting deep learning than examinations; however, he argued that examinations are better at measuring the student's potential. David expressed his dissatisfaction with examinations and explained how he would ensure that the assignments were indeed the students' work. Nathan wrote that assessments for deep learning attracted negative critique from his colleagues:

...where I often ask students to discuss, to evaluate or to express an opinion after reviewing evidence. But this has often been criticized by fellow examiners as they feel that the student is not showing what knowledge (of the *mentions subject*) has actually been gained, especially in final synoptic examinations.

Peter posted that the nature of student groups varied from one year to the next and that some assessment modes may be more appropriate for particular student groups. He expressed his concern that the institutional regulations did not allow academics to make *ad hoc* changes to the assessment mode stated in the published study-unit descriptor:

What I really find a stumbling block is assessing students. Each group of students is different. After the first couple of lectures, we lecturers would know what best assessment mode to use with the particular group we are lecturing to. But university administration requests that assessment mode is indicated well in advance. I can't decide to change mode according to the particular group.

Nathan's experience of his colleagues' critique of assessments for deep learning and Peter's post about the rigid process of changing the assessment mode, reaffirmed claims that departmental cultures and institutional policies may act as barriers to changes in pedagogical practices (Knight and Trowler, 2000; Norton *et al*, 2005;

Lindblom-Ylänne *et al*, 2006). The PD course supported participants to reflect on barriers to changes in teaching practices.

The reading about learning theories and the online discussion helped the participants to connect educational theory to their teaching practices. The postings showed that the academics reflected on how the learning theories informed their pedagogical practices.

The teaching/learning techniques in the discussion and workshop session would therefore fall into the social constructionist learning theory... This is in contrast with the teaching/learning techniques in the formal lecture sessions which sit clearly within the Cognitivist Theory of Learning, rooted in the processes of thinking, memory and retrieval. (Giselle)

Sticking with the study-unit... I think that my teaching is informed by the Cognitivist Learning Theory as well as by the Social Constructivist Learning Theory... Situative Learning Theory informs my teaching when I'm on fieldwork with students. (David)

The participants have posted that their teaching practice was informed by at least two learning theories. The postings showed that the participants generally felt that there was not a single learning theory that adequately explained the complexity of their teaching practices. The academics' use of multiple learning theories aligns with claims made elsewhere that educators should adopt an eclectic approach when they design learning experiences (Honebein and Sink, 2012).

Sam posted that it is difficult to promote active learning in classes with a large number of students. Steve agreed with Sam but he also mentioned that small groups may also be too self-conscious to participate actively in class discussions. Sam's concern about large group teaching and active learning was addressed during the final part of the PD course (Chapter 7).

One of the "don'ts" cited in the table of the Higher Education Academy reading is "Allowing students to be passive". This is one aspect which I should work upon! But then it is hard to encourage students to take a more active role, especially when lecturing to larger audiences, as we at *Faculty X* are usually expected to do. Any feedback from other participants regarding this last paragraph, is particularly appreciated. (Sam)

David was also interested in the teaching approach that Peter adopted in his study-unit.

Hi Peter...thanks for your insights. I am particularly intrigued by how you build a study-unit together with your students. Can you elaborate on that? Thanks! (David)

The above posts are examples of posts where participants sought feedback from their peers about their teaching practices. The online PD course provided a formal environment that supported peer learning. The online discussions supported academics to develop pedagogically-informed positions on teaching.

In general, the learning resources and activities presented in the second topic served their purpose of encouraging participants to reflect on their teaching beliefs and practices. Some posts also revealed evidence of change in participants' thinking about their teaching practices, for example:

But, thinking about it now ... it is usually me asking the questions... they do engage and answer... but there are not many questions posed by the students ... so, critical engagement is weak. (Giselle)

Throughout the various discussion threads, several participants (David, Giselle, Omar, Sam and Steve) reflected on their conventional teaching practices and expressed intentions to change their teaching practices.

However, I have never asked or encouraged students to reflect on what they're doing and on how their understanding is developing, maturing, or changing. That might be worth a try in the future. (David)

I would consider to periodically assign them with small design projects/assignments which are not part of the final assessment, in order to allow the students to make mistakes without penalty and rewarding their effort along the course of the study unit. (Omar)

The virtual discussion environment provided participants with an opportunity to share their teaching concerns and ask how their peers addressed these concerns. For example, here is an exchange about the students' participation in class:

...in some of my classes I do not even get one question (except "Could you repeat..."). Could it also be the case that us lecturers may at times discourage students from raising questions in class, for example if we try to cram the lecture with material? (Sam)

The issue of students not asking questions is complex. Certainly, there is the element of them not wanting to seem 'foolish', by asking a lame question. I counter this by playing up my own Achilles heel - spelling! I am slightly dyslexic and often have problems sorting out vowels on the whiteboard - so I tell them this right at the start, and, you know, Sam - it impacts positively on the classroom dynamics - they always pipe in to correct any errors :) ... and I think it helps put them at ease about not being perfect the whole time. (Giselle)

As indicated in Section 6.2.1, the delivery of the PD course was guided by the 'teach as you preach' principle. During the PD course, the participants experienced how students could be encouraged to participate actively in online discussions. Thought provoking questions and instructor facilitation are critical factors for active participation in online discussions (Maurino, Federman and Greenwald, 2007; De Smet, Van Keer and Valcke, 2008). Due consideration was given to my participation frequency and facilitation style during online discussions (Dennen, 2005; Mazzolini and Maddison, 2007). I deliberately avoided responding to all participants' posts whilst maintaining an online teaching presence throughout the PD course. My interventions were generally limited to: (a) posts where participants directed questions to me; (b) occasional posts which did not attract any response; (c) posts which necessitated correction of misconceptions or prompting further detail; and (d) the end of topic commentary. According to Garrison (2011), too many facilitator interventions could adversely affect the discourse and the process of building participant's understanding during online discussions. The discussion prompts informed participants about my participation role in online discussions:

This is a facilitator guided discussion. I will be participating in this discussion as a 'master learner' and skilled online facilitator. This does not mean that I will respond to every post. It does mean that I will engage in discussions with participants and, if necessary, provide feedback to those whose posts do not adequately respond to all the discussion questions.

The participants welcomed my final commentary post summarising the main themes discussed during the previous week and implications for teaching practices. This is an example of a participant's response to the end of topic commentary.

Thanks James... this reinforces the concepts we have encountered during the past weeks. And your explanation of the implications of the

learning theories for our teaching methods is much appreciated. I recommend the above post to all other course participants! (Sam)

6.3.3 Topic 3 - Pedagogical Models and Frameworks for TEL - Part A

Topic 3 focussed on the CA theory (Appendix H). The recorded facilitator's presentation included: (a) an introduction to the CA theory; and (b) an overview of the learning resources and activities of the topic. The participants were required to dedicate a considerable amount of time to work through the activities of the topic. The participants were presented with documents about the CA theory and Bloom's taxonomy for defining LOs. After reading these documents, the participants were required to review the LOs of one of their study-units and revise these as necessary using the appropriate verbs. They were also asked to explain the rationale behind each LO. They were then required to explain the teaching and learning activities to help students achieve one or more of the LOs of the selected study-unit. The participants were also required to describe the assessment method/s for one or two of the LOs. For this activity, four separate discussion groups were set up; each group having two participants. These discussions did not work according to plan because the majority of participants were very busy during that week. As indicated in section 6.1.3, the duration of this topic was extended by another week to allow more time for the completion of this activity. Only Giselle and Sam engaged in one-to-one discussion about the LOs, teaching and learning activities and assessment methods of their study-units. The other participants posted their responses to the discussion questions but they did not engage in one-to-one discussions. To address this problem, I decided to provide individual feedback to the responses of these participants.

The learning resources and online discussion of topic 3 served their purpose of encouraging participants to reflect on the LOs, the teaching and learning activities, and the assessment methods of their study-units. Although the one-to-one discussion activities did not work as planned, the posts indicated that the participants were deeply engaged in reviewing their study-units. Some participants revised one or two study-unit LOs; others wrote a new set of LOs. Peter for example, adopted a clinical approach whilst revising the LOs of his study-unit:

I have substituted here the verb "trace" (which is not observable) with "summarize" in the actual study-unit description, where this LO would aim towards the deep end of the levels of learning.

Sam for example, wrote a new structured list of LOs for his study-unit:

When I looked at the course outline, I was actually surprised that I did not include any LOs in it!... The LOs which I have now set out below are thus new ones; they are not a revision of a prior set.

The participants provided a detailed rationale behind the LOs and the teaching, learning and assessment activities of one or two LOs.

The first two LOs are necessary because they act as foundations for the subsequent LOs; basically, without having some basic knowledge ('facts') of the subject, it would be impossible to reach that deeper level of learning. LO 3 is crucial because it fulfils an important aim of this study-unit, namely to train students to read ancient texts. To this end, it is important that students do not just learn how to read the (*mentions topic*); rather, I want them to learn the various methodologies of reading since these could then be applied to other ancient texts. (David)

Setting activities which were closely related to the participants' context - in this case, encouraging them to revise the LOs of their study-units - led to changes in their professional practice. The learning activities supported the participants to apply the knowledge of educational theory to their teaching practices. This is evidence related to the kinds of academic development activities that can assist academics to adapt their pedagogical practices.

Throughout the PD programme, the participants praised the contributions of their peers. In the following posts, for example, Giselle recognised Sam's approach to define the LOs for one of his study-units and Peter's discussion activity. These affirmations also revealed that she was learning from her peers:

I like the way you have thought carefully about surface and deep learning when you designed your learning outcomes. This is something I should do to mine, and maybe improve them.

I particularly like the way you encourage students to 'take on a role' and comment on the Charlie Hebdo from different viewpoints - might borrow that one :)

The negative impact of high workload allocations and time constraints on the development of teaching were raised again in one of the posts.

The tasks given to students but for which no marks are given relate essentially to reading key literature and familiarize themselves with an

(mentions subject) report – but I hardly have the time to engage with that reading because the syllabus is vast. Am I happy about this? NO. Do I have the time to change it? NO. My teaching academic effort *(an institutional measure of the teaching contribution of each academic)* is currently 54 and increasing! (Nathan)

In the end of topic commentary, I shared my reflections about the lack of participation in the one-to-one discussions. The participants were invited to read through the exemplary one-to-one discussion between Giselle and Sam. I also posted a set of questions to help academics reflect on the lack of student participation in discussions of this type. Several participants expressed concerns that their teaching workload and family commitments were preventing them from engaging fully with the activities of the PD course. As indicated earlier, a decision was taken to take a break from the course and resume in mid-January 2015.

6.3.4 Topic 4 - Pedagogical Models and Frameworks for TEL - Part B

Topic 4 focussed on the Col framework and online discussions (Appendix H). The recorded facilitator's presentation included: (a) an introduction to the teaching, cognitive and social presences of the Col framework; (b) an overview of the purposes and challenges of online discussions; and (c) an overview of the learning resources and activities of the topic. The learning resources consisted of four documents: (a) notes about the Col framework; (b) an article about synchronous and asynchronous e-learning methods; (c) notes about online discussions; and (d) samples of assessment rubrics for online discussions. After reading the learning resources, the participants were required to design an online discussion for one of their study-units. This activity involved: (a) the preparation of a discussion prompt to stimulate engaging and substantive online discussions; and (b) the identification of a rubric to assess the online discussion. The participants shared their prompts and rubrics in the topic discussion forum generating thirty-nine posts including my final commentary post. Topic 4 also featured links to resources about: (a) facilitating online discussions; (b) pitfalls in online discussions; and (c) rubrics for different types of learning activities.

Topic 4 served its purpose of helping the participants think about, plan and develop a technology-enhanced teaching and learning activity for one of their study-units. Their initial posts (which were two to four A4 pages long) and subsequent responses in the topic forum showed that the participants reflected deeply on the

design of the online discussions. They gave due consideration to both the pedagogical and technological facets of their planned online discussions. The participants documented the learning outcome/s, the pre-requisites, the questions, the expectations in terms of number, quality and timing of student postings, the assessment rubric and the facilitator's role during the online discussion.

Peer feedback helped participants in two ways. Firstly, peer feedback helped participants improve their planned activities with some of the participants committing themselves to revise the discussion prompt based on this feedback.

Still, perhaps some revisions in my text could improve the original prompt - and this is the advantage of discussing our work in this forum.
(Sam)

During this activity the participants helped each other to clarify some aspects of their online discussion plans as exemplified in the following post:

I have a question about your last sentence, where you encourage student to post more than the minimum requirement of posts and tell them that the best two will be selected for marking purposes. How would you deal with a situation where a lot of students (and you did say you have large groups) opted to post a lot of comments? And more importantly, how would you make it easier (i.e. more time-efficient for you as the marker) to decide on which would be the best posts in a way that balances subjective and objective criteria?" (Edward)

Secondly, the peer feedback provided participants with ideas to help them change their future teaching practices.

Thanks for this Sam - I especially like your bulleted list of characteristics of responses which will be credited - very useful, I may well borrow that.
(Giselle)

Sharing designs of technology-enhanced teaching and learning activities for peer feedback, encouraged academics to reflect on both their pedagogical practices and the use of technology. The following post shows Sam's reflections about online discussions and their impact on the student learning load:

In some of the material that James has supplied, it was suggested that students would be expected to engage in multiple postings throughout the week. I'm not sure whether this is reasonable. Students are typically

following other modules (some of them are even employed on a part time basis)...

Edward wrote about the potential use of synchronous communication technologies for his online discussion:

With regards to the technology for the chats, I don't know to be honest. I expect I would ask IT Services for advice on what is available within the VLE framework. I'm a great believer in the University having a good centrally-designed platform that we can use for our teaching purposes. I suppose there could be the option of introducing a wiki somewhere.

During the PD course, some participants requested guidance related to online teaching or how to use specific learning technologies. In the above post, for example, Edward articulated his need to learn about the chat and wiki. After reading the post, I uploaded step-by-step instructions on how to use the chat and wiki tools available in the VLE. At various points during the PD course, as a result of reflection, I identified other learning needs that academics may have. For example, after reading Giselle's post about the way she was planning to organise students in groups, I thought that she would benefit from learning about the students' grouping features in the VLE:

I have created a short video about assigning students into separate groups. Please visit the Help Forum (below the Class Announcements) in the course area. Hope you will find this useful. Let me know if you have queries on this. We can set up a short face-to-face meeting to help you.

New learning resources were developed as a result of the participants' needs identified during the delivery of the PD course. This is just-in-time academic development, where the facilitator identifies the learning needs of the academics and addresses these in a timely manner. This evidence relates to the wider research aim about understanding how academics can be assisted to adapt their pedagogical practices.

Engaging academics in redesigning activities of their study-unit encourages them to try these with their students. Giselle and Edward for example, indicated their commitment to try out the online discussions that they developed during the PD course with their students.

I used to ask students to write a 1-page critical synopsis of the text, answering particular questions like: What is the main point? How can it

be of use to understanding society? Ask one question to the author...
etc. - so this year I'll alternate the old plan with this new online activity.
(Giselle)

With regards to the amount of work being asked for, perhaps you are
right. I suppose one needs to try out things and see how and then they
work or not. (Edward)

As reported in Section 6.3.3, setting activities that were closely related to the participants' context - in this case encouraging participants to design an online discussion activity for their F2F study-units - led some participants to express intentions to change their teaching practice. This is evidence related to the kinds of academic development activities that can help academics change their thinking about teaching leading to changes in pedagogical practices to include learning technologies.

6.4 Summary

This chapter described the design, development and delivery of the first part of the PD course in TEL. My observations and analysis of the participants' experience of this part of the course were also documented in this chapter.

This research phase assisted me to understand the processes involved in the design, development and delivery of an online PD course. The earlier sections of the chapter focused on the pedagogical principles that guided the design of the PD course. The content presented during the course was based on: (a) the participants' needs identified during the first interview (Chapter 5); (b) the literature review findings about HE, models and frameworks for university teaching, TEL and academic development (Chapter 2); and (c) desk-based research about the curriculum of TEL courses offered by educational institutions/organisations. As the PD course progressed, the participants experienced difficulties in keeping up with the pace of the course. Adjustments were made to the original course schedule to minimise participants' drop-outs from the PD course. This phase of research showed that academic developers may need to approach voluntary non-accredited PD interventions with some degree of flexibility according to the circumstances of the academics. This chapter, therefore, presented a methodology that academic developers can use to identify, organise and deliver the content/activities of voluntary PD courses in TEL.

The learning resources and activities presented during the first part of the PD course served their purpose of encouraging participants to reflect on their teaching beliefs and practices. The participants were engaged in focused learning conversations that helped them develop new insights about teaching and learning, and express intentions to introduce changes in their pedagogical practices. This is evidence related to the research aim of understanding the kinds of academic development activities that help academics change the way they think about teaching.

The sharing of academic practices through online discussions also led to unanticipated outcomes; for example, when David and Edward expressed their intention to observe each other's class teaching to learn about each other's pedagogical strategies. This is further evidence related to the research aim of understanding the effects of this PD intervention; the PD course is not a simple causal intervention. The curriculum of PD courses is not always the direct cause of changes in the pedagogical practices of academics. Exposure to other teaching practices may also encourage academics to adapt their pedagogical practices. The diversity of the participants' experiences, therefore, is another pedagogic resource in PD interventions.

Setting activities that were closely related to the participants' context; for example, when participants designed an online discussion activity for their F2F study-units, led participants to express intentions to change their teaching practice. This is evidence related to the wider research aims of (a) understanding how academics can be assisted to adapt their pedagogical practices; and (b) studying the effect of a PD intervention to help academics adapt their pedagogical practices to include learning technologies.

The learning resources and activities have also supported academics to reflect on the barriers to change and innovate teaching practices. Nathan for example, posted that his assessments for deep learning were critiqued by his colleagues. Peter and Emmanuel have expressed concerns about the institutional policies related to changes in the assessments of study-units. These posts confirm claims made elsewhere that departmental cultures and institutional policies or guidelines can inhibit academics from changing their pedagogical practices (Knight and Trowler, 2000; Norton *et al*, 2005; Lindblom-Ylänne *et al*, 2006).

The curriculum of the PD course was enhanced throughout the delivery of the course. New learning resources were developed as a result of the participants' learning needs identified during the online discussions. These learning resources were posted on the VLE to address these participants' needs. Therefore, this academic development programme was addressing the participants' learning needs identified before and during the course.

This phase of research also showed that a fully online PD course is one type of intervention that can make a difference to the pedagogical practice of academics. Exposure to online learning resources and engagement with online discussions led to participants' commitment to change their teaching practices.

The next chapter describes the final phase of this study, which involved another set of participants' interviews, and the design and delivery of the remaining part of the PD course.

Chapter 7: Designing and Delivering the Professional Development Course (Part B)

7.1 Introduction

Chapter 6 described the design, development and delivery of the first part of the PD course in TEL (Topic 1, 2, 3 and 4). This chapter presents the second set of individual interviews with the participants held after running the first part of the PD course, and the design and delivery of the remaining part of the PD course. The main aims of this research phase were: (a) to understand better the participants' experience of the curriculum and format of the first part of the PD intervention; and (b) to identify their expectations for the remaining part of the PD course. This chapter therefore, presents an analysis of (a) the mid-course interviews and (b) the participants' forum posts in the remaining part of the PD course. Further interpretation of this analysis, linking it directly to the research questions, is presented in Chapter 8.

7.2 Planning

As indicated in the previous chapter, the content and delivery of the PD course were informed by: (a) the needs of the academics (Chapter 5); (b) the findings of the literature review about HE, models and frameworks for university teaching, TEL and academic development (Chapter 2); and (c) desk-based research about the curriculum of TEL courses offered by educational institutions/organisations (Chapter 6). The first part of the PD course did not address all the needs identified by participants. These needs included: (a) engaging with 'digital native' students; (b) large group teaching strategies; (c) time-saving strategies to revise or develop the content of study-units and enhance teaching practices; and (d) recording lectures and voice-overs to electronic presentations. These needs were addressed in the second part of the course, described in this chapter.

This research phase also provided an opportunity to pursue the research questions further. At the mid-point of the PD course, the participants' experiences could be reviewed, in order to see whether the approaches adopted during the first half of the course had worked as expected. It also provided an opportunity to explore whether any consequences of participation were apparent yet, and whether any

unanticipated issues had arisen. This opportunity for reflection allowed the focus for research and practice in the final part of the programme to be refined.

After completing the activities of the first part of the PD course, the academics were invited to participate in individual interviews (Appendix J). During these interviews the academics provided feedback about their experience of the first part of the PD course, held between October 2014 and January 2015. The participants were prompted to talk about their expectations of the remaining part of the PD course. A set of starter questions was used during these interviews (Appendix K) each of which lasted about one hour. The participants' feedback on the content and delivery of the first part of the PD course and their needs regarding learning technologies were used to inform the design and delivery of the remaining part of the PD course. During the interview the participants were also informed about the themes that were going to be presented in the remaining part of the PD course. These interviews also provided an opportunity to encourage some participants to catch up with any pending activities of the PD course. The learning resources and activities of the last two topics (Appendix M) were prepared after the interviews. These topics were delivered between April and August 2015. This phase of research was completed over a period of six months (Table 7.1).

Table 7.1: Timeline of research activities

Activity	Time-line
Semi-structured interviews	February 2015
Design & development of PD course (Part B – Topics 5 & 6)	February 2015 to June 2015
Delivery of PD (Part B - Topics 5 & 6)	April 2014 to August 2015

The ensuing sections present the observations and reflections on the interviews held with the seven academics who had participated in the first part of the PD course.

7.3 Analysis of the Interviews

7.3.1 Content and Organisation of the PD Course

The participants shared their opinions about the quality and quantity of learning resources and activities presented during the first part of the PD course. They reported that they found the course to be interesting and enriching. Some participants

mentioned specific learning resources and activities that they found particularly useful. David, for example, said that the CA theory and LOs were extremely useful. Edward enjoyed reading about the Col framework and the task of designing an online discussion.

The participants provided positive feedback about the presentation and organisation of the learning resources/activities on the VLE. They mentioned that the recorded facilitator's presentations introducing each topic and the facilitator's end of topic commentary were extremely useful. Edward also said that the concise readings saved him time and facilitated his engagement with the PD course:

And usefully you gave us notes as well... That was useful, to have those notes because that saves time from a lot of readings... I think I am like students... to have one reading sort of... I empathise. (Edward)

David spoke positively about the facilitator's continuous contact with the participants. The interviews showed that the participants appreciated the experience of following the PD course because this showed them a model of online teaching and learning. David for example, has learnt how academics can use the VLE beyond the provision of learning resources. At the start of the course, David posted that his experience of the use of the VLE was not positive (Chapter 6.3.1). Giselle said that her experience of the PD course taught her how she can teach online. Omar welcomed his first experience of participating in online discussions.

My burning question was always, but how can I use VLE in a meaningful? ...sort of like... and I think through this course I started to discover, sort of, ahh, okay, this is really sort of, a good way of how you could use in a more sort of, it's not just you can access the material but sort of, like to integrate. ... when you look at VLE and see all those features, you say: I don't have time for this... with this course it really facilitated that process. (David)

I think it is very well presented and the... the thing is that we're always learning... learning through the process. So rather than you sitting down and you telling us... and then you can use this technique, you're doing it. So, we're learning by how you are doing it. (Giselle – Interview 2)

The above posts are evidence that the 'teach as you preach' principle that was used to guide the design, content and delivery of the PD course (Chapter 6.2.1) was

successful in providing a model of teaching and an experience of learning for participants to reflect on.

The participants spoke positively about the balance of theory and practical activities during the PD course. Edward, Peter, Nathan, and Sam said that the educational theory was particularly useful because they had never followed any formal preparation for their teaching role.

Many things were new to me. We were trained as researchers, not teachers. (Peter)

It was very useful for me... you had the first part focussed on theory. That was very useful. That was a lacuna in my case. I have not met many of the things that you mentioned. I have not followed a B.Ed or a PGCE... so for me that was important. ...I found these at the right level for me to be able to do the tasks that you required us to do. (Sam)

As indicated in Chapter 2, exposing academics to different theories of learning and encouraging them to reflect on how these theories can be connected to their class practices will initiate the process of changing their teaching practices (Romano *et al*, 2004). However, claims have also been made that scholarly approaches to teaching may lead academics to withdraw from a formal PD programme (Quinn, 2012). The two participants (Lillian and Steve) who withdrew their participation during the first part of the PD course did not mention the educational theory or course content as a reason for their withdrawal from the PD course (Chapter 6.2.3). These participants indicated that their other commitments precluded them from following the course. The other participants engaged positively with the educational theory presented in this online PD course.

During the first interview Edward claimed that pedagogically-focussed courses were usually more oriented towards theory rather than the practical aspects of teaching (Chapter 5.3). During the second interview, he mentioned that the PD course presented a good balance between educational theory and pedagogical practice:

I found the theory useful as well as its application in the activities you gave us.

This is evidence that Edward's experience of the first part of the PD course initiated a change in his belief about teaching development courses. For academic developers,

this is evidence that a good balance of educational theory and pedagogical practice in PD programmes can address negative discourse about these programmes being too scholarly or theoretical.

Some participants specifically mentioned that the PD course provided them with the theoretical foundations to improve the quality of their teaching. For example, Nathan said:

I entered the teaching profession without knowing anything about... how this should be done. ...So, all of sudden... you say... ahh okay... this is it? This I do... this I don't do... crucial no? ... this is like you want to become a chef but you don't know anything about the chemistry of food. No? If there is... some solid base... okay, you say... this is not a question of taste? But if you know something else, you will be even more geared to provide something better...So, I think it's crucial... the theoretical underpinning of something that you do... (Nathan)

Giselle mentioned that the PD course helped her develop a strong theoretical underpinning of teaching that would add more credibility to her arguments about teaching in her department. The educational theory helps the academics to justify their teaching practices and make them more confident as teachers (van Lankveld *et al*, 2017)

I do not like unpacking my teaching... I am spontaneous. However, I found the theory parts which are normally considered tedious useful. The theoretical underpinning also, when talking to other academics gives you more standing. (Giselle)

Nathan's and Giselle's comments indicate that the PD course had a positive impact on the development of the teaching identity of the participants. As indicated earlier, academics are trained as researchers not teachers. The undervaluing of teaching is a problem because academics may not be supporting sound teaching and learning experiences, or developing good learning resources and assessment activities. The teacher identity of academics determines their teaching practices and the quality of their teaching (Hemer, 2013).

The participants, unsurprisingly, spoke positively about specific activities that were closely related to their teaching context. For example, Edward appreciated the hands-on practice and learning about the features of learning technology:

An element of trying to do something practical and understand what the VLE can offer.

Giselle said that the PD course provided her with the required pedagogical guidance to engage her students in discussions and to grade their participation in discussions:

The last one that you did, which was more kind of hands on... that was very much more... what I was particularly looking for... Cause you've already covered how to engage the students and that's probably one of the most important and you also covered how to mark their participation.

David, Edward, Giselle, Nathan, Omar and Peter expressed concerns about the time commitment required to engage fully with the PD course. Nathan, for example, expressed his frustration about his workload and family commitments which prevented him from sustaining commitment to all activities of the PD course. At various points in the PD course, particularly after the second topic, several participants experienced difficulties in completing the course activities on time (Chapter 6.2.3). I sent emails that gently reminded participants about approaching deadlines. They often replied back that their workload (e.g. marking student assignments or attending conferences) or family commitments have kept them away from the PD course. On numerous occasions, the due dates of online activities were extended to allow participants to complete their activities. Edward appreciated this flexibility:

Your course compares well. Yours was more reasonable with time-frames...even because you were more flexible with us.

David, however, fairly commented on the implication of not sticking to the original due dates of online activities:

...when there were people who posted late, sort of, in your mind... that's behind me. I wouldn't like to go back to it. When you work on activities late, it will be less engaging. When we did not keep to the deadlines, it may have helped others to relax.

David, Giselle and Peter suggested that the duration of each topic in future offerings of this PD course, should be two weeks: (a) during the first week the participants would read and reflect on the learning resources and submit their initial posting and; (b) during the second week they will submit responses to posts submitted by other participants. Peter mentioned that extending the duration of each topic to two weeks

would give participants more time to engage deeply with the course. Nathan was not in favour of extending the duration of the course; instead he suggested that academics should take a short sabbatical:

I was frustrated that I did not have enough time... I don't know the others... how they're coping? But I am not coping. Which means... there needs to be part of a sabbatical that focusses on this... not research. On this!

Time is a restraining factor for academics to engage fully with PD (McKee *et al*, 2013; Gregory and Lodge, 2015; Paskevicius and Bortolin, 2016). The participants in my research study continued following the PD course for the following reasons: (a) they had a genuine interest in improving their teaching and enhancing their effectiveness with their students; (b) the online modality of the course provided an accessible and flexible learning environment; (c) there was some degree of flexibility regarding due dates of course activities; and (d) they found the course useful for their professional practice. This experience supports the proposal that academic developers should approach non-mandatory PD interventions with some degree of flexibility and adapt to the academics' time constraints.

The participants commented positively about the interdisciplinary connections made during the PD course. Edward and Omar, for example said:

I mean, that's useful that sometimes you have time, with peers from different faculties, you compare notes and you get another perspective... so that was useful. In fact, that was one of the useful aspects of the course... that you hear the ideas of others... what others are doing on what I will be doing. (Edward)

...even the fact that you are discussing with people from different fields, there will be commonality... there will be things which are totally different because of the different discipline... because we work in silos sort of, we don't usually talk with lecturers from different faculties. (Omar)

Apart from facilitating the social interaction between academics from different departments, the PD intervention provided a virtual environment where participants shared good practices and concerns about teaching. The virtual discussions helped participants develop a greater insight into the shared issues of university teaching and learning. These comments support the conclusions drawn elsewhere about the

benefits of developing interdisciplinary relationships in PD courses (Knight, 2006; Gale, 2011; Paskevicius and Bortolin, 2016).

7.3.2 Changes in Beliefs about Teaching and Learning

The interviews provided evidence of changes in the academics' beliefs and attitudes about teaching and learning as a result of their participation in the PD course. Giselle, for example, said that the PD course helped her to reflect more on educational theory and the importance of LOs. This contrasted with the views she expressed during the first interview (Chapter 5.6) before she started the PD course. Her experience of the PD course initiated a shift in attitude towards educational theory and LOs:

...although it's interesting, I feel I don't really want to go into it at that level. However, having said that, it was very useful ...in university now, the way we are functioning, learning outcomes are important. You have to be able to articulate your outcomes well enough to set up a new course. So, I mean... I appreciate having to think about it...

Nathan and Omar mentioned that the concept of deep/surface learning helped them to reflect more on their students and the different learning styles that they bring to class. They mentioned that their teaching should not treat students as a homogenous group. Omar said that the PD course made him conscious of the inappropriate labelling of students as either 'good' or 'bad' learners.

The PD course also encouraged participants to increase their awareness of the different pedagogical orientations in HE. Peter's experience of following the course showed him a model of teaching and learning that is more learner-focussed. The learner-centred teaching model of the PD course has challenged the participant's conventional conception of teaching and introduced him to new teaching approaches. The interview provided evidence of changes in Peter's belief about the teaching and learning:

...the idea of... the style of lecturing is completely different. Emphasis from teaching to emphasis on learning. Students absorbing and building the study-unit themselves with the lecturer. That was, I think, the principal breakthrough... more emphasis on the learning rather than teaching.

The shift from teaching-centred practice to learning-centred practice approaches changes the teacher's role from a bearer of knowledge to a facilitator of learning. Consequently, this influences the academic's professional identity as teacher (Trautwein, 2018).

David's participation in the PD course taught him that sound online learning experiences demanded more commitment from lecturers and students compared to traditional lectures. His experience of the PD course helped him change his belief about the nature of online teaching and learning:

What I realise for example, it requires a lot of time... as much time as if you're delivering this face-to-face, you know. It requires a lot of time... I was in the student's seat here and I have experienced that this requires time... It's very, it's time consuming. A lot of people have this impression that you are using the VLE to save time. But in reality, it is even more time consuming because if you give a lecture you just go in there and you have 2 hours and you're more or less done, whereas with this you have to monitor it every day or every few days...

The second set of interviews also revealed that after following the first part of the PD course, some participants were still not persuaded about particular forms of TEL. Peter and Sam, for example, were unsure about the benefits of online discussions in their subjects.

I am not sure about switching my F2F discussions in class with technology-based discussions. I will reflect on the online discussion I designed during the PD course and try it in class to see if it works better than what I am doing in class. (Peter)

But something else I am sceptic about... and this came out of the readings... sort of, in an online forum, there is a different approach where the student is learning from other students... and to be realistic... not all posts will be posts which you learn from... some will write something which is incorrect... Given the large groups that I teach, I wouldn't have time to monitor all student postings. I am not confident about the quality of student learning through online discussions if I don't monitor these. (Sam)

Peter's and Sam's scepticism about online discussions does not undermine the validity of the PD course. In this case, arguably, the participants' scepticism about online discussions is better informed as a result of following the PD course. As indicated in Section 6.2.1, the intent of the course was not to persuade academics to

change their teaching practices to a preferred pedagogical practice. Its aim was to help academics think about different pedagogical practices and how they can adopt these for better student learning outcomes.

7.3.3 Changes in Teaching Practice

Several participants reported that they had already implemented changes to their study-units or teaching practices as a result of their participation in the PD course. Omar and Peter, for example, used their newly acquired knowledge about the CA theory and LOs to revise the LOs of their study-units. David and Nathan also used the Bloom's taxonomy for defining LOs whilst preparing the descriptors of new study-units. They mentioned that whilst preparing the descriptors they also thought about the alignment of assessments to the LOs.

I filled up a couple of APQRU forms for new courses, I used the idea of learning outcomes, aims, sort of. I am paying more attention to that and sort of to make sure that they reflect what I want the students to learn and that the assignment reflect... it's true that sometimes we give assignments that... we don't stop and think that these are reflecting the CA theory. (David)

During the interview, David reported on a technology-based activity that he tried in class. He followed the online teaching model that he experienced during the PD course to organise an online discussion in one of his study-units. He was very positive about the pedagogical benefits of this teaching activity and the students' engagement in this online activity. He mentioned that he is thinking about trying online discussions in a postgraduate course.

I have done a forum. More or less I followed the programme that I sent you. I did some changes just to make sure everything is clear and in order. It went well. I was very happy. And more importantly for me is that the students were very happy. I think I will do some changes... With 25 students, I think, my solution would be to group them... For me it was also a way, sort of, to encourage them to explore something in a little more depth which you cannot really do in a 2-hour class... I think that the most positive thing is that it encouraged those who are usually more quiet to sort of be able to participate a bit more fully. (David)

Giselle spoke about her preparations to try the online discussion activity that she designed during the PD course. She wanted to assess the level of student engagement in online discussions in the VLE compared to online discussions she had

previously organised in Facebook. She mentioned that her preparations for this online learning activity were based on what she learnt during the PD course.

First part of the course covered an important aspect i.e. engaging students online and how to mark their participation. So, I've split my class, which is a big class with 50 into groups. And I did that using your instructions. They were very easy to follow. I couldn't have done it before. So, it also makes me think about how to mark the input... how to mark the activity. That rubric, I used one of your rubrics and adapted it slightly. One of the rubrics... so yes, that definitely, that was very useful in a tangible way. (Giselle)

Sam revised the examination questions of one of his study-units as a result of his engagement with the concept of deep/surface learning. He reported that he included more discussion-type questions in the examination paper than usual. The PD intervention also helped him to understand better the rationale behind questions in the examination papers of a retired professor:

The difference between deep and surface learning. That was very useful for me and therefore, when I prepared exam questions especially for fourth years, where you expect a level of maturity. I tried to prepare questions that will not simply get students to tell me what's in the notes that I gave them in class.

Why does this guy come up with these questions, slightly ambiguous? But when I read those readings I realised that, in the world a problem will not be... just replicate this one, but you need to apply it to that complicated situation.

Peter mentioned that the online discussion prompts helped him improve his questioning techniques in class. He explained that he started dedicating more time before lectures to prepare class questions in order to create a scaffolded learning environment. He said that his improved questioning style incentivised students to take a more active role in their own learning. His questioning style in class promoted a shared responsibility of teaching and learning in class.

This section has provided evidence of immediate changes in the professional practices of some academics after participating in the first part of the PD course. Several participants reported changes in their practices suggesting that they were adopting a richer kind of teaching and learning. These changes included revised LOs in study-unit descriptors, improved questioning techniques for better student engagement in class and the introduction of more discussion-type questions in

examinations. One participant reported on his experience of trying out an online discussion with his students whilst another participant mentioned that she was preparing to try online discussions on the VLE. These participants mentioned that their student experience of the PD course encouraged them to try out technology-based learning activities with their students. The interviews did not show any evidence of immediate increased use of learning technologies by academics after following the first part of the PD course. The interviews, however, revealed that several participants were planning to implement technology-based teaching in the future, as explained in the next section.

7.3.4 Commitment to Change the Teaching Practices

The interviews provided evidence of the participants' commitment to future changes in their study-units and teaching practices. Omar for example, indicated that as a result of his understanding of the deep/surface learning concept, he was going to revise his study-units to include more application activities and problem-solving skills:

So, this was interesting for me, that... you don't say this student is good and this student is not... I think this helps... the way I place the subject, I will try to introduce more application to the theory... I can add more weight to lab work...

Omar also spoke about his plans to move away from the practice of releasing all learning resources and activities on the VLE at the beginning of the study-units. Instead he was going to release the course materials every week. He was also going to set up a Help forum in his study-units on the VLE and direct students to submit queries to this forum.

Peter mentioned that, during the summer recess, he was going to revisit the discussion activity that he designed during the PD course to analyse further the feedback provided by the other participants. He indicated that he was considering trying out the online discussion with students.

Sam also spoke about his plans to make better use of class time by shifting the presentation of easy problems from the classroom to the VLE. He wanted to dedicate class time to explain difficult concepts and problems. He mentioned that he will be revising the marking rubrics based on the exemplars presented in the PD

course. He was also going to try online discussions in a masters' study-unit that had a small student enrolment. Sam indicated that he would like to video record some explanations and try the flipped classroom pedagogy. He added that these changes take time to implement; he will make incremental changes to his teaching.

Edward mentioned that the credit value of one of his study-units was changing from 2 ECTS to 4 ECTS. He said that instead of doubling the content covered during this study-unit, he was planning to structure each 2-hour lecture as follows: the first hour would be dedicated to introduce students to the lecture themes and the second hour would be used for student discussions. His plan was to avoid loading the revised study-unit with content so that the students will have a deep learning experience. He was considering moving some in-class discussions to the VLE:

The restructuring of study-units is a result of reflection about teaching and learning concepts discussed during the PD course.

During the interviews some participants mentioned barriers to innovate their teaching and to implement technology-based teaching in the future. Nathan and Peter for example, raised concerns about the time constraints and heavy workload required to introduce changes in their teaching and implement TEL.

I would like to introduce more student discussions in class, but in reality, how much time do I have in class to do this? The syllabus is vast. There is plenty of content that I need to cover. (Nathan)

I need a lot of time to redesign my study-units and prepare content for an online format. Even revising a few LOs takes a lot of time. (Peter)

Some participants also were unsure about the level of institutional and departmental support they will receive if they adopt blended and online teaching. David and Sam, for example, asked if the university administration supports fully the engagement of academics with online learning.

From the university aspect... is it okay for the university, in the sense that, you tell them that I am spending my time with the students online rather than face-to-face? You know how it works with TAEs (*Teaching Academic Effort - an institutional measure of the teaching contribution of each academic*) etc. So, they won't tell you that you are trying to skim. The reality is that it is the either way round. (David)

Sam was also unsure about the departmental acceptance of assessing online activities for the purpose of the final grade of his study-units:

I consider that (*referring student postings in online discussions*) as an assignment but maybe the head of department or... I would like to use this in the master's course where there are few students, maybe 20. And it could be that I use that. And again, subject that there will be the approval.

These concerns echo the perception of some academics, particularly those who have not experienced online learning, that this mode of learning is less rigorous for learners and teachers than class-based learning (Kelly, 2009). There is further evidence here that institutional policies and procedures affect the readiness of the academics to implement changes in their teaching practices after following PD courses. This challenge of transferring learning from PD courses to class has been reported in other academic development literature (McKinney and Jarvis, 2009; Stes *et al*, 2010; Brooks *et al*, 2011).

This section provided further evidence that the PD intervention raised the participants' awareness of the different pedagogical orientations in HE and the potential of learning technologies in teaching.

7.3.5 Expectations of the Second Part of the PD Course

During the first interview, the participants were asked about their future use of learning technologies (Chapter 5.8). This information was used to inform the design and delivery of the PD course. After having followed the first part of the PD course, the participants were again asked to indicate which learning technologies they would use in their study-units. The participants mentioned technologies which had already been identified during the first interview, for example recording lectures and adding voice-overs to electronic presentations (Table 7.2). They also mentioned further technologies which did not feature during their first interview, for example online collaboration tools and class technologies to promote student interaction. After having followed the first part of the PD course, the participants were more specific in terms of the VLE features which interested them. David and Giselle, for example, mentioned specifically that they were interested in using the VLE for electronic marking and feedback. During the second interview none of the participants mentioned that they wanted to learn how to use the VLE to deliver fully online study-units or how to

organise online discussions. These needs were addressed during the first part of the PD course when participants experienced the use of the VLE and online discussions. Some participants indicated that they were no longer interested in specific learning technologies that they had mentioned during the first interview. Giselle and Omar, for example, indicated that they are no longer interested in the use of social media and document cameras. This is evidence that the PD course helped participants take a better-informed position on technology use, even if that position was to reject it.

Table 7.2: Future use of learning technologies

Learning Technology	First interview*	Second interview
Use of intermediate & advanced features of the VLE	David, Edward, Giselle, Nathan, Omar, Peter, & Sam	---
Develop digital learning objects e.g.:		
- Recording lectures and adding voice-overs to electronic presentations	Edward, Giselle, Omar, Peter & Sam	David, Edward, Giselle, Omar, Peter & Sam
- Automated multiple-choice quizzes	Sam	Sam
Use of VLE for fully online study-units	Edward & Sam	---
Use of online discussion boards	David & Giselle	---
Use of VLE for electronic marking and feedback of student assignments	---	David & Giselle,
Use of synchronous communication tools:		
- Chat	---	Edward
- Virtual Classroom Software	---	David & Edward
Use of online collaboration tools:		
- Wiki documents	---	David, Edward & Giselle
- Google documents	---	David, Edward & Giselle
Use of visualisers to assist students remotely	Omar	---
Classroom technologies to promote student interaction	---	Giselle
Use of social media for teaching	Giselle	---

* The academics (Darlene, Lillian and Steve) who withdrew their participation from the research study have been omitted.

The first part of the PD intervention helped participants to identify those learning technologies which they could use in their study-units. Their student experience of viewing the recorded facilitator's presentations generated interest in learning how to prepare these presentations. Some participants were interested also in learning about interactive technologies (e.g. virtual classroom software),

collaborative editing of shared documents (e.g. wikis and Google documents) and classroom response systems. The PD course encouraged some participants to move beyond the use of presentational technologies. This is evidence that the first part of the PD course generated interest amongst several participants in learner-focused teaching practices. This shift in academics' thinking towards student-centred conceptions of learning was similarly reported for traditional PD programmes (Gibbs and Coffey, 2004; Knight, 2006).

7.3.6 Just-in-Time Academic Development

The interviews also served as an opportunity to provide the participants with pedagogical guidance and ideas about the potential use of learning technologies to support their teaching. The following are some examples of the kind of support provided to participants during the interview.

During the interview, David mentioned that he is less likely to use learning technologies in language courses. I suggested that he should explore the use of podcasts and videos on video-sharing platforms for such courses. He also sought my feedback regarding the pros and cons of providing direct links in the VLE to journal articles available through the institutional library website. David also enquired about the student visible/hidden grouping features on the VLE.

Omar mentioned that he will be posting videos of recorded lectures in the VLE. I supported this idea and invited him to consider splitting a 1-hour recorded lecture into 3 or 4 shorter videos and to introduce a student activity after each video. We have also discussed the option of organising students in groups and asking them to develop instructional videos about laboratory instruments. These instructional videos will then be used with future student cohorts following the same study-unit.

We have a particular module, for example, with first years... how to use certain instruments and normally that takes a 2hr session... how to use certain instruments, for example, power supply... (Omar)

Why don't you get a student or a couple of students and prepare recordings? Nowadays they use a smartphone to record a good quality video... (James)

During Sam's interview I realised that there was a misunderstanding regarding the posts made by academics in the Class Announcements forum of a study-unit that is not visible by students. I therefore explained that in a hidden study-unit, the messages posted in a forum would still be sent to the students' mailbox. This causes confusion because the students cannot then see the messages in context. When Sam was talking about the quality of student essays and marking rubrics, I invited him to consider the idea of posting samples of graded essays on the VLE:

...one can also consider for example, providing sample graded assignments. You scan a 'A' grade essay, 'B' grade essay and 'C' grade essay and post these on the VLE, so that your students will have a clear idea of your expectations and there will be no surprises. (James)

This is very interesting. I never thought about this. (Sam)

The one-to-one interviews therefore, provided an opportunity to address further learning needs of the participants. This is another phase in the PD intervention where participants experienced just-in-time academic development. This is evidence related to the wider research aim about understanding how academics can be assisted to adapt their pedagogical practices.

7.4 Content and Delivery of the PD Course (Part B)

The interviews provided information about the academics' experience of the first part of the PD course and their expectations of the remaining part of the course. Although the participants expressed concerns about the time commitment required to engage fully with the course, they spoke positively about the curriculum and the format of the course (Chapter 7.3.1). I therefore decided to retain the same approach adopted in the first part of the course in terms of the quality, quantity and organisation of learning resources and activities for the remaining part of the course. The content was developed using the same approach that was used during the first part of the course (Chapter 6.2.2). The rationale for each theme included in the PD course was documented, followed by the design and development of learning resources and activities related to the theme (Appendix L). The inclusion of each theme was informed by the participants' needs identified during the first set of interviews and the interviews described in this chapter, as well as desk research about TEL courses (Table 7.3).

Table 7.3: Content of the PD course (Part B)

Participants' needs identified during the first interview*	Participants' needs identified during the second interview	Content identified in the curriculum of TEL courses*
Engaging digital native students.	Use of VLE for electronic marking and feedback of student assignments.	Models/used for designing university courses (face-to-face, blended or online).
Large group teaching.	Use of synchronous communication tools: chat and virtual classroom software.	Assessment and feedback using learning technologies.
Time-saving strategies to revise or develop content of study-units and enhance teaching practices.	Use of online collaboration tools: wiki documents and Google documents.	
Recording lectures and voice-overs to electronic presentations.	Classroom technologies to promote student interaction.	

*The participants' needs and content presented in the table were not addressed in the PD Course (Part A).

The content of the second part of the PD course (Topics 5 and 6) was organised as shown in Appendix M. The sections that follow describe new observations and reflections on the participants' experience of this part of the PD course, which followed from the experiences documented in Chapter 6.

7.5 Analysis of the Forum Posts (PD Course - Part B)

7.5.1 Topic 5 - The Conversational Framework, Online Workload and OERs

Topic 5 covered the teaching and learning activities of the CF framework (i.e. acquisition, inquiry, practice, production, discussion and collaboration), strategies and time-saving techniques for managing online workload and OERs (Appendix M). The learning resources consisted of: (a) video and notes about the CF; (b) videos and notes about strategies for managing the online workload; and (c) notes about OERs. After viewing these learning resources, the academics were required to explain three time-saving strategies that they would use for their study-unit/s. They were also invited to identify an OER and explain how they would use this in one of their study-units.

The topic forum posts showed that many participants were considering further changes to their teaching practices, for example:

Using 'Class Announcements' and 'Frequently Asked Questions', can save work as well. I intend to make future use of these features starting from next academic year. (Sam)

Add student support links: This is a great suggestion which I will try to implement as soon as possible. Since help is 'out there', might as well direct students to it. (Edward)

Some participants remarked that academics would benefit from learning about the time-saving strategies early during their career, as evidenced by this post from Sam:

The readings were interesting; quite a number of recommendations I actually follow already. I tended to "discover" these time-saving tips through experience. It would have saved me much further time if I had come across the documents at an earlier stage!

PD programmes may therefore shorten the time for academics to acquire teaching skills.

Participants posted that they experienced difficulties with technologies that are not used regularly. Sam, for example, mentioned that he forgets how to set up assignment drop-boxes:

Another suggestion which I may put into practice is the automation of the assignment. My difficulty is that these kinds of tasks are handled once every semester – and therefore I tend to forget the procedure as to how to go about this.

This is evidence that infrequent use of technologies may be another barrier to implement learning technologies.

Giselle did not follow the instructions in the discussion prompt of the topic forum; instead, she posted her experience of an online discussion that she had organised in one of her study-units. She shared the details of this experience and asked participants to provide her with feedback about time-saving strategies to monitor student contributions in online discussions:

The reason for this flood of online workload is a very successful experiment I tried out with my first-year class of 47 students. I used the skills taken from this (James') study group and set up a series of 4 reading-based fora. My aim was to get my students to engage critically

with short texts (x4) which then formed the basis of follow up lectures and face to face discussion in class...

I shall be giving the students a survey monkey questionnaire to get some feedback - however, the general remarks have been positive up to now. So ... I think I need to improve my time-saving skills... but really, with a class this big, the scale of the response is unavoidable. What do you think?

Other participants provided suggestions, for example:

If I were to opt for a class discussion, I think I would divide students into 15 groups of around 7 students each, and then it would be the main task of each group to post a summary of their interactions. I would allocate marks primarily on the basis of this summary. (Sam)

This is an example of an unanticipated outcome of the PD programme. Giselle was not expected to implement the online discussion designed during Topic 4 immediately, but she went ahead, tried this with her students and shared her positive experience with the other participants. This is evidence of participants' engagement with peer learning and participants moving from learning about teaching approaches to enacting these with students. This is further evidence that the PD intervention has led the participants to implement technology-based teaching activity. This shows changes in teaching practices arising directly from the PD intervention.

7.5.2 Topic 6 - Flipped Classroom, Learning Technologies, Assessment and Feedback

The last topic of the PD course focussed on the flipped classroom pedagogy, the use of different learning technologies, electronic assessment/feedback and the digital native/immigrants in HE (Appendix M). The learning resources consisted of: (a) videos and a reading about flipped class teaching; (b) instructions about collaborative editing of documents using Google docs; (c) guidelines for presentations and voice-overs; (d) instructions to prepare presentations with voice-overs, screencasts and podcasts; (e) instructions to set up assignment dropboxes and provide electronic feedback through the VLE; (f) instructions to set up multiple choice quizzes in the VLE; (g) notes about class response systems; and (h) notes about the research on claims about digital native/immigrant students. The participants were encouraged to familiarise themselves with the learning resources presented in this topic. They were required to explain briefly how they would use one or more of the technologies

mentioned in this part of the PD course to teach a topic of their choice. The participants also experienced a short synchronous teaching session using virtual classroom software through the VLE. At the time of the research study, the participants' institution did not support any virtual classroom software.

The learning resources presented in this topic were well received by the participants as exemplified by these posts:

Thank you for your time and effort to create a 'one-stop-shop' where so many resources are put together for us. (Edward)

Thank you, James, for the mine of very useful hints and information. (Giselle)

As the PD course progressed, the online discussions revealed that the participants were thinking more critically about the potential use of technologies in their study-units. The following post, for example, shows Giselle's pedagogical rationale for using the class response systems to introduce students' interactions in large classes and to engage them in critical thinking. She articulates the challenge of asking appropriate questions that invite students to choose one response from two options:

I intend to use many of them (*referring to learning technologies presented in topic 6*) - but the one that screams YES! to me is the classroom response system. This for three main reasons: 1) it offers a solution to the communication challenges posed by very large classes, 2) it directs me to think more clearly about the material the class is focused on and 3) it combines a process of personal reflection on the part of the students, then discussion in small groups and reassessment of their initial response...

The biggest challenge would be for me to think about the question I pose. It would require one response from two options. This is not easy to do in the Humanities, but forming the question would help crystallise the concepts that the reading focuses on. The aim is to get the students to think critically about these concepts. There is rarely a right or wrong answer - but the most important learning and teaching moment would be getting the students to think about why they answered in the way that they did, and to defend their answer within their small groups.

It would then be fun to repeat the classroom response count, to see if and how the classroom discussion has altered things.

This is evidence that the PD intervention helped participants to think critically about their future use of learning technology within their disciplinary area.

Sam expressed his concern about the students not completing the pre-class activities and their attitudes towards active learning pedagogies:

As regards readings/videos which students are expected to go through in advance... I do not usually ask students to prepare readings/videos in advance. The reason being that from my experience not all students will actually read these notes in advance.

The participants' concerns about the institutional support for TEL persisted until the end of the PD course. Edward, Peter and Sam, for example, mentioned that the institutional policies did not accommodate online teaching practices:

One more thing, that as an HoD (*Head of Department*), I am very much aware of this that University does not cover non-direct contact hours in our computation of TAE (*Teaching Academic Effort*). This definitely keeps lecturers away from using these technological aids as much as is desired. (Peter)

Omar went beyond the requirement of explaining how he would use the technologies presented in Topic 6; he followed the instructions and prepared a screencast. He shared this screencast with his peers in the PD course and explained how he was planning to use this in his study-unit.

In this regard, I have prepared the following sample online lab demonstration which you may access and view by clicking on the link (*link to screencast*).

This is another unanticipated outcome of the PD course similar to the one documented in the previous section. Omar was confident enough to prepare a screencast similar to the ones presented during the PD course.

7.6 Summary

This chapter presented the findings from the second set of interviews and the design and delivery of the remaining part of the PD course. The interviews provided feedback about the participants' experience of the first part of the PD intervention in order to see whether the approaches adopted for this part of the course

had worked as expected. The interviews also provided information about the participants' expectations of the final part of the course. This information was used to inform the content and delivery of the remaining part of the course. The interviews also provided an opportunity to explore apparent effects of this PD intervention on the participants.

This phase of research showed that although the participants were concerned about the time commitment required to engage fully with the course, they were positive about the quality, quantity and organisation of the learning resources and the activities presented in the PD course.

This stage of research provided evidence that the participants in this study appreciated the educational theory presented in the PD course. These academics came from a variety of disciplines other than education. The interviews showed that even participants (Edward and Giselle) who were initially sceptic about learning theory changed their attitude about this during the first part of the PD intervention. This evidence contradicts findings that scholarly, theoretical approaches to teaching can lead academics to withdraw from a formal PD programme (Quinn, 2012). The participant (Steve) who withdrew from my PD course clearly indicated that it was his workload commitments rather than the educational theory that led him to stop following the course (Chapter 6.2.3).

The online PD intervention in this research study raised the participants' awareness of the different pedagogical orientations in HE. Several participants reported changes in their practices suggesting that they were adopting a richer kind of teaching and learning. These changes included revised LOs in module descriptors (David, Nathan, Omar and Peter), improved questioning techniques for better student engagement in class (Peter) and the introduction of more discussion-type questions in examinations (Sam). Several participants expressed intentions to adopt teaching practices that align with student-focussed learning. Omar, for example, was planning to revise his study-units to include more application activities and problem-solving skills. Edward was going to redesign one of his study-units to introduce more in-class discussions.

This chapter provided further evidence about the effect of the PD course on the participants' immediate and future use of TEL. As the PD course progressed, the online discussions revealed that the participants were thinking more critically about

the potential use of technologies in their study-units (Chapter 7.3.2). At the beginning of the course, the participants reported that their use of learning technologies was generally limited to presentational technologies. Towards the latter parts of the course, some participants (e.g. Edward and Giselle) were more interested in learning about interactive technologies. This is evidence that the PD programme prompted participants to think about teaching designs that were based on interactive technologies.

During the final part of the PD course, there were unanticipated outcomes related to the participants' use of technologies. Giselle, for example, used the VLE grouping feature to organise her students in groups to participate in an online discussion. Omar worked through the instructions provided in the final topic of the PD course to develop a screencast for one of his study-units. This evidence also suggests that the PD intervention helped some participants develop the necessary confidence to use learning technologies to enhance their teaching practices.

This phase of research also provided evidence that the PD programme did not persuade all participants about the value of all forms of TEL. Peter, for example, was unsure about the benefits of online discussions given that his study-units had small student enrolments. Sam was concerned about the workload generated by online discussions since he taught large student groups. Although Peter and Sam remained sceptic about online discussions, their opinions about the potential of this technology for their study-units were better informed after having followed the PD course.

Now that the evidence from the final phase of research has been analysed and reviewed, the discussion and conclusion chapters of the thesis will draw together what has been learnt during this study in relation to the research questions.

Chapter 8: Discussion

8.1 Introduction

The aims of this chapter are to discuss the findings of this study and to identify how these support or advance knowledge in the field of academic development for TEL. The main contributions of this research study are related to: (a) the process of academic development for learning technology use; and (b) the process of studying academic development. This research study explores the process of designing and delivering PD interventions around TEL in HE, and addresses a series of questions about what forms of academic development help academics to change the way that they think about their teaching. This research also adds to the knowledge base about methodologies that can be used to study academic development.

Chapter 4 and 5 presented the process that was followed to understand the teaching practices and learning needs of participant academics to inform the curriculum of the PD course. Chapter 6 and 7 documented the delivery of the PD course and the analysis of the participants' engagement with the course. A thematic analysis of the forum posts and mid-course interviews was carried out. Two overarching themes - 'Design and delivery of the PD course' and 'Effects of the PD course' - were identified and presented in a visual thematic map, showing their relationship with individual themes (Figure 3.1). The thematic analysis led to the identification of five themes presented in Section 3.7 (reproduced overleaf - Table 8.1) that were relevant to the research questions.

The next section discusses how the CoI, CA and CF theory can benefit academic development and the use of CF to develop a class teaching observation schedule. The other sections in this chapter present the individual themes that were identified through the thematic analysis process and the implications for academic development practice.

Table 8.1: Table of themes showing selected associated codes

THEME 1: Academic development addressing the needs of academics

1.1 Flexible academic development.

1.2 Just-in-time academic development.

- *Learning needs addressed during the course.*
- *Learning needs addressed during the interviews.*

1.3 Activities related to the teaching context.

- *Immediate change in teaching practice.*
- *Valuing learning activities that are closely related to their teaching context.*

THEME 2: Interdisciplinary academic development

2.1 Sharing teaching practices from different disciplines.

- *Intention to adopt new teaching strategy in their subject.*
- *Intention to engage in peer class observation.*
- *Valuing interdisciplinary PD.*

THEME 3: Mediation of educational theory

3.1 Connecting educational theory to practice.

- *Activities supporting reflections on educational theories.*
- *Applied educational theory to teaching practices.*
- *Intention to adopt teaching practices based on newly acquired knowledge of educational theory.*
- *Valuing educational theory.*

THEME 4: Developing pedagogically-informed positions on teaching and TEL

4.1 Student experience of technology-based teaching.

4.2 Peer Learning.

- *Learning through discussions.*
- *Peer encouragement & support.*

4.3 Reflections on conventional teaching practices.

- *Intention to change teaching practices.*

4.4 Reflections on technology-based teaching.

- *Pedagogical benefits of technology-based teaching.*
- *Barriers to change teaching.*

THEME 5: Strengthening teacher identity

8.2 Use of Col, CA and CF in Academic Development

The Col, CA and CF models feature widely in literature about course design in HE but much less has been written about how CA and CF can benefit academic

development. This research study suggests that the Col, CA and CF models can be important points of reference when designing academic development.

The PD course, with its delivery process based on the Col framework, was designed to enable the participants to experience learning in a community of inquiry. This study adds to the existing body of research about the implementation of Col in blended and online academic development (Vaughan and Garrison, 2006).

The design of the PD course was guided by the CA (Biggs and Tang, 2007) principle of aligning learning outcomes and teaching and learning activities. As indicated in Section 6.2.2, the CA theory is a common topic in the curriculum of TEL courses aimed at university teachers. However, the literature review did not show evidence of use of the CA in the design of academic development programmes. As indicated in Section 2.4.1, the CA theory advances the principle of aligning the intended learning outcomes, the teaching and learning processes, and assessments in a course. The CA theory, in particular its emphasis on aligning assessments with the intended learning outcomes, has its limitations for the design of non-award bearing courses such as the PD course in this research study, since this did not involve any formal assessments. The 'backwash effect' concept, where assessments determine what and how students learn (Watkins, Dahlin and Ekholm, 2005), which is a key element of the CA theory, did not apply for this PD course. The participants' learning during the PD intervention was driven by the course learning resources and activities rather than formal assessments. Nonetheless, the design of the PD course was guided by the CA principle of aligning learning outcomes, teaching and learning activities.

This research study also shows how the CF was used (a) to develop a class observation tool to analyse the teaching practices of the participating academics, and (b) to guide the design and the delivery of the different topics in the PD intervention. The CF is a widely cited framework used to evaluate conventional class-based learning and technology-based learning at the undergraduate level (Laurillard, 2002). As indicated in Section 2.4.2, the CF represents the undergraduate learning experience as a process of interactions between the teacher, the learner and peer learners occurring at the discursive and the experiential levels. Several influential learning theories, including instructionism, constructionism, socio-cultural learning and collaborative learning, can be represented on the CF, making it a useful model for generating detailed descriptions of the process of academic learning. The

elements of the CF were therefore used to draw up a class observation checklist that was used to document the range of teaching practices used during classes by the participating academics (Chapter 5.7). This checklist featured the lecturer's and students' behaviours related to teaching and learning at the discursive and experiential levels. The adaptive and reflective processes as described by the CF were not included in the observation schedule because these processes are internal behaviours which could not be observed in class. The review of literature did not yield any examples of class-based teaching studies that made use of observation schedules based on the CF. This research study provides evidence that the CF observation checklist can be used to analyse the class teaching practices of academics, providing a close analysis of the kinds of pedagogic interactions they rely on, and those that they use infrequently, or even neglect completely. This instrument forms a contribution to research, as it can be used by: (a) researchers involved in class teaching observations; (b) academics involved in peer observations of teaching; (c) staff involved in formal appraisals of academics or quality assurance processes related to class teaching and; (d) researchers to gather data about the predominant type of teaching in university departments.

The following sections present the themes that were identified through the thematic analysis process of the forum posts and mid-course interviews. The implications for academic development practice are also presented.

8.3 Theme 1: Academic Development Addressing the Needs of Academics

The challenge of engaging academics in PD activities is a recurring theme in the academic development literature. The lack of time coupled with high workloads is often mentioned as a substantial barrier to the academics' participation in PD programmes (Ferman, 2002; King, 2004; Cook and Marincovich, 2010; Herrington *et al*, 2010; Entsie, Owusu-Cole and Ofosua, 2020). This is also the same barrier that is repeatedly cited in literature regarding the slow uptake of TEL in HE (Conole and Oliver, 1998; Bertolo, 2008; Allen and Seaman, 2015; Walker *et al*, 2018b). This research study supports claims that flexible and needs-led academic development contribute positively to the engagement of academics in PD (Baume and Popovic, 2016; Beaton and Sims, 2016).

This study documents the process of designing and delivering academic development constructed around the needs of participating academics. Prior to the PD intervention, I identified the participants' needs through observations of class teaching and their use of learning technologies, an analysis of teaching-related documents and individual interviews. These research activities generated a list of participants' needs that were used to inform the format and curriculum of the PD course. Some of these needs were articulated by the academics during the interviews whereas other needs were inferred through analysis (Table 5.14). The design and delivery of the course was also informed through desk-based research on the curriculum of TEL courses offered by educational institutions (Chapter 6.2.2). The analysis of the forum posts and mid-course interviews showed that the learning needs of participants were addressed through: (a) flexible academic development; (b) just-in-time academic development; and (c) activities related to the teaching context.

The high workload concerns mentioned by the participants during the first interview were indicative that time was going to be a restraining factor for participants to engage fully with this elective PD programme. Therefore, the design and delivery of the PD course had to address the participants' need for time-efficient academic development. The PD course was delivered online to make it easier for participants to schedule time around their university and personal commitments to follow the course. A concise set of learning resources that were deemed as highly relevant and essential to the participants' learning needs were presented in the course. The participants were also assisted to manage their time and effort in the course by documenting the time required to complete each learning activity. The reading or viewing of learning resources were timed and indicative times for weekly online discussions were included. Notwithstanding these course design and delivery elements, the participants expressed concerns about the time commitment required to engage fully with the course (Chapter 7.3.1). I extended the due dates of some online activities to allow participants to complete the activities; this approach has worked and some participants said that this flexibility was appreciated (Chapter 7.3.1). One participant however, shared a concern about the soft deadlines for completion of activities; he said that late posts may not attract replies and will make the online discussion less engaging. The quality and quantity of forum posts and the mid-course interviews showed that the online modality and the flexible due dates of course activities supported the engagement of participants in the PD course. This experience supports the proposal that academic developers should approach non-mandatory PD

interventions with some degree of flexibility and adapt to the academics' need for time-efficient academic development.

Throughout the PD intervention the participants' learning activities were closely monitored and adjustments were made as necessary. As indicated earlier, a list of participants' needs was identified from the pre-course interviews and observations of class teaching and use of technology. The forum posts led to the identification of further learning needs. Some participants have requested guidance related to online teaching or how to use specific learning technologies. Step-by-step instructions on how to use the chat and wiki tools in the VLE, for example, were posted to address the participants' learning needs (Chapter 6.3.4). At various points during the PD course, I identified other learning needs that participants had. For example, after reading a post about managing online discussions, I felt that the participant would benefit from learning about the students' grouping features in the VLE (Chapter 6.3.4). New learning resources were developed and disseminated throughout the course as a result of the evolving learning needs of the participants. The mid-course interviews provided another opportunity to address previously unidentified learning needs of the participants, which emerged as a result of their engagement in the first part of the PD intervention. During the interviews I provided participants with pedagogical guidance and ideas about the potential uses of various learning technologies. For example, during one of the interviews, a participant was unsure about the use of the VLE for language courses. I asked if these courses would benefit from having podcasts and videos shared on the VLE (Chapter 7.3.6). In another interview, I persuaded the participant to provide students with short instructional videos rather than 1-hour lecture recordings (Chapter 7.3.6). Therefore, the participants' learning needs that were identified during the course and interviews were addressed promptly; this is just-in-time academic development. This research study presents an academic development model that was not based on conventional assumptions regarding what academics need to know. The design of the academic development model was an ongoing process; adjustments were made as the needs of academics evolved. This PD model, although labour-intensive, is effective because it is tailored to meet the learning needs of the participants. Academic developers should consider academic development models that are more personalised and targeted to address the needs of academics. In Chapter 9, I shall discuss the practicalities and recommendations regarding this academic development model.

The analysis of the forum posts and interviews showed that the participants' learning needs were also addressed through activities that were related to the participants' teaching context. For example, all participants were deeply engaged in the activity that required them to revise the LOs in module descriptors. One academic posted that the activity helped him to write a set of LOs for a module with missing LOs (Chapter 6.3.3). Two participants proceeded with trying an online discussion that they designed during the PD course (Chapter 7.3.3). During the interviews they mentioned that they followed the pedagogical and technical guidance provided during the PD course to organise online discussions with their students. Both participants were very positive about the students' engagement in the online activities. One of these participants also shared her experience with the other participants in the PD course (Chapter 7.5.1). Another participant shared a screencast that was similar to the screencasts that I presented in the PD course (Chapter 7.5.2). He explained to his peers how he was planning to use this screencast in his study-unit. The immediate application of the knowledge and skills learnt during the PD course was an unanticipated outcome of the PD intervention. The participants were not expected to introduce a technology-based activity in their study-units however, the PD programme empowered them to take the risk and introduce a teaching innovation in their study-units. The participants unsurprisingly, reacted favourably to specific activities that were closely related to their teaching context (Chapter 7.3.1). For example, one participant said that the PD course provided her with the required pedagogical guidance to engage her students in discussions and to grade their participation in discussions. The unexpected and immediate application of knowledge and skills learnt during the PD course showed that this academic development was addressing the specific needs of the participants. This finding reaffirms the recommendation that academics benefit from context-dependent and professionally relevant PD (Beaton and Sims, 2016). The implication for academic development practice is that PD programmes should engage academics in activities that are closely related to their teaching context.

8.4 Theme 2: Interdisciplinary Academic Development

There is an ongoing debate in the literature between disciplinary-specific and generic approaches to academic development (Parsons *et al*, 2012). A synthesis position has started to emerge which says that there is value in bringing different disciplines together in PD courses. Peseta, Manathunga and Jones (2010) and Skelton (2013) advocated for interdisciplinary PD where academics from different

disciplines can critique and learn from each other's teaching experiences. The participants in this research study commented positively about the interdisciplinary connections they made during the PD course (Chapter 7.3.1). This supports claims that collegiality is one of the positive outcomes of interdisciplinary academic development (Davis, Karunathilake and Harden, 2005; Pololi and Frankel, 2005). Apart from facilitating the social interaction between academics from different disciplines, the PD intervention provided a virtual environment where participants shared effective practices and concerns about teaching. For example, one participant mentioned that he will consider the use of background music during class discussions when one his peers in the PD course wrote about this teaching practice (Chapter 6.3.1). The evidence gathered throughout the PD course suggests that the diversity of participants' experiences was an important factor to help the participants to critically analyse their teaching conceptions and TEL. The online discussions encouraged academics to suggest or plan changes in their teaching practices. These discussions also led to unintended outcomes; for example, one participant posted that he would like to sit in the classes of another academic to learn more about the latter's pedagogical practices (Chapter 6.3.1). Therefore, this research study supports the emergent position that interdisciplinary PD has added pedagogical benefits compared to discipline-specific PD. If this research study is suggesting that a diversity of disciplines is an important influence on the academics' teaching conceptions and practices, there may be scope to rethink the effectiveness of mandatory courses for early-career academics. Many HEIs, particularly in the UK, require newly appointed academics to follow mandatory award bearing courses in university teaching and learning to secure their tenure (Parsons *et al*, 2012). This implies that such courses are typically attended by academics with little prior teaching experience at university. Given that this research study showed that there is pedagogical value in having a diversity of disciplinary teaching experiences represented in PD, there may be scope for further studies to explore if a mix of early-career and mid-career academics sharing their teaching experiences will have additional pedagogical benefits for early-career academics.

8.5 Theme 3: Mediation of Educational Theory in Academic Development

The literature review identified this problem: academic developers have a problem getting participants in their programmes to engage with educational theory. Quinn (2012) for example, reported that scholarly approaches to teaching led

participants in her study to withdraw from a formal academic development programme. Meyer and Murrell (2014) claimed that some academics lack interest or motivation to learn about educational theories because they associate these with colleges of education or teaching duties that are less valued than research. The PD intervention in my research study featured concise summaries and online discussions of the educational theory and main frameworks used in TEL in HE. The participants were also required to engage with activities that helped them connect the theory to their teaching practices. The forum posts showed that the participants have reflected on how their teaching practices are informed by learning theories (Chapter 6.3.2). The PD course has also prompted some participants to immediately apply their newly acquired knowledge of educational theory to their professional practices. For example, one participant applied the CA theory and Bloom's Taxonomy of learning outcomes to complete the descriptor forms for new study-units and to design assessments (Chapter 7.3.3). Another participant has expressed his intention to adapt his teaching practices by introducing more application tasks in his study-units after he learnt about the concept of surface and deep learning (Chapter 7.3.4). The evidence gathered throughout my study suggests that the participants engaged actively with educational theory even though some of them saw this as irrelevant before they started the course (Chapter 7.3.2). The findings of this research study thus challenge the assumption that educational theory is resisted by academics in PD programmes. This study suggests that academic developers should rethink their approaches when presenting educational theory, to emphasise its relevance to the problems they perceive. The educational theory was not presented in a traditional 'telling format'. The approach that worked with the participants in this study involved supporting them to think critically about educational theory by connecting this to their teaching practices and student learning.

8.6 Theme 4: Developing Pedagogically-Informed Positions on Teaching and TEL

The literature shows that academics are generally using technology to replicate and supplement existing teaching practices rather than to transform these for better student learning outcomes (Hoffmann, 2006; Laurillard, 2008; Kirkwood and Price, 2014). Supporting academics to develop pedagogically-informed positions on the use of learning technologies is a persistent challenge for academic developers (Wilson, 2011). This research study advances our understanding of academic

development activities that can support academics to make pedagogically-informed choices about the use learning technology.

The analysis of the forum posts and mid-course interviews showed that the student experience of the PD course supported the participants to develop a better understanding of technology-based teaching and learning. The PD course provided the participants with a model of learning and teaching online. In one of the forum posts, a participant mentioned that the online discussion helped her to reflect and consider the use of online discussions to help her students think critically about readings (Chapter 6.3.1). During the interviews, the participants mentioned that they were learning about technology by observing me using this effectively during the PD course (Chapter 7.3.1). Academic developers should model sound technology-based teaching to help academics enhance their understanding of the potential of learning technologies to improve the learning experience of their students.

Claims have been made that academics hardly engage in professional discussions around teaching (Roxå and Mårtensson 2009; Patariaia *et al*, 2014; Thomson and Trigwell, 2018). This contrasts with many academics' approach to disciplinary research, where they advance their disciplinary knowledge through discussions and by subjecting their disciplinary research to peer reviews. Haigh (2005) claimed that the absence of discussions around teaching does not benefit academics because they will be missing out on opportunities to enhance their pedagogical practices through the inputs and ideas of their colleagues. This research study showed how an online PD programme was used to create a formal setting where academics discussed their teaching conceptions and issues around TEL implementation. The analysis of forum posts and interviews showed that the participants developed a better understanding of teaching, student learning and TEL through online discussions with their peers. Throughout the PD course, there were posts showing that peer discussions: (a) helped participants to advance their knowledge about teaching and learning (Chapter 6.3.1); (b) prompted participants to seek feedback from peers (Chapter 6.3.2); (c) helped participants to refine their online discussion plans (Chapter 6.3.4); and (d) provided participants with ideas to enhance their teaching practices (Chapter 6.3.4). There were forum posts showing that participants praised the contributions of their peers. These affirmations also revealed that participants were learning from each other (Chapter 6.3.3). Therefore, in addition to the course learning resources and the facilitator's guidance, the peer discussions and feedback were an integral part of the learning process in this PD course.

The analysis of posts and forums showed that the PD course supported participants to reflect on conventional teaching practices and technology-based teaching. Some participants articulated intentions to change aspects of their teaching practices for example to increase student engagement in class (Chapter 6.3.2). The participants reflected also on the pedagogical benefits of learning technologies (Chapter 6.3.1) and challenges to innovate their teaching and embed technology in their teaching (Chapter 6.3.4 and 7.3.4). The findings of my research study showed that by the end of the PD intervention some participants were still not confident enough to implement technology-based teaching. However, this does not imply that the PD failed for these. As the PD course progressed, the online discussions revealed that the participants were thinking more critically about the potential use and pedagogical value of technologies in their disciplinary area. The main purpose of the PD course was to help academics make informed decisions about TEL. The value of this PD is that whether or not the participants accept or reject TEL, their position is better informed at the end of the course.

8.7 Theme 5: Strengthening Teacher Identity

The literature review showed that the development of pedagogical skills by academics is a complex area because many of them strongly identify with their discipline rather than with teaching (Owens, 2012; Kember, 1997; van Lankveld *et al*, 2017). Academics identifying themselves with their teaching role: (a) perceive themselves as teachers, (b) are emotionally attached to their teacher role and give importance to their teaching tasks, (c) feel part of a community of teachers and (d) aspire to be better teachers (Beijaard, Meijer and Verloop, 2004; Holland and Lachicotte 2007). According to Akkerman and Meijer (2011), the formation of identity is an internal process that is influenced by interactions with the social contexts. In many universities, the reward system that favours research performance and publications, is one of the critical factors constraining the development of teacher identity (Owens, 2012). During the first interview two participants explicitly mentioned that in academia the teacher role is less important than the researcher role (Chapter 5.9). The undervaluing of teaching is a problem because academics may not be supporting sound teaching and learning experiences, or developing good learning resources and assessment activities. The teacher identity of academics determines their teaching practices and the quality of their teaching (Hemer, 2013). The evidence gathered during this research study shows that the PD intervention strengthened the participants' teaching identity. As indicated earlier, several participants provided

positive feedback about the educational theory presented during the course. One participant mentioned that the PD course was useful because the academics are trained to become researchers in their disciplines rather than teachers (Chapter 7.3.1). An indicator of teacher identity development is the participants' voluntary choice of committing time to develop specialist professional knowledge related to their teaching role such as learning how to write learning outcomes in study-unit descriptions (Chapter 7.3.2). One participant mentioned that the PD intervention helped her develop a strong theoretical underpinning of teaching that would add more credibility to her arguments about teaching in her department (Chapter 7.3.1). These comments suggest that the PD intervention helped the participants to develop a deeper sense of teaching competence and hence identify more strongly with their teaching role. The peer discussions mentioned in the previous section instilled a feeling of appreciation and a sense of belonging and solidarity to a community of academics that aspire to be better teachers. These findings support the claim that long term academic development programmes support and reaffirm teacher identity formation (Lieff *et al*, 2012). There were some research studies which reported that staff development impacted negatively on teacher identity (van Lankveld *et al*, 2017) however, the academic development model in my research study had a positive impact on the development of the participants' teacher identity. It should be noted that the development of teacher identity was not a main theme in this research inquiry. Although I have gathered some evidence related to this theme, the evidence here is not as strong as for the earlier themes presented in this chapter. Therefore, the claims presented in this section are not conclusive.

8.8 Summary

This chapter has discussed the findings from the study, in relation to existing debates in the literature.

This research study suggests that the Col, CA and CF models can be important points of reference when designing academic development. The CF in particular, was also used to develop a class teaching observation tool to analyse the teaching practices of academics, providing a close analysis of the kinds of pedagogic interactions they rely on, and those that they use infrequently, or even neglect completely. This instrument forms a contribution to research.

The thematic analysis of the participants' forum posts in the online PD course and the mid-course interviews identified five themes that were relevant to the research questions.

Theme 1 - Academic development addressing the needs of academics discussed how (a) flexible academic development, (b) just-in-time academic development, and (c) activities related to the teaching context addressed the learning needs of the participants.

Theme 2 - Interdisciplinary academic development discussed how the diversity of participants' experiences was an important factor to help the participants to critically analyse their teaching conceptions and TEL. This research study supports the emergent position that interdisciplinary PD has added pedagogical benefits compared to discipline-specific PD.

Theme 3 - Mediation of educational theory in academic development discussed how the educational theory was presented in the PD course. This research suggests that academics should be supported to think critically about educational theory by connecting this to their teaching practices and student learning.

Theme 4 - Developing pedagogically-informed positions on teaching and TEL discussed how the student experience of the PD course supported the participants to develop a better understanding of technology-based teaching and learning. The course learning resources, the facilitator's guidance and the peer discussions were an integral part of the learning process in this PD course. As the PD course progressed, the online discussions revealed that the participants were thinking more critically about the potential use and pedagogical value of technologies in their disciplinary area.

Theme 5 - Strengthening teacher identity discussed how the online academic development model helped the participants to develop a deeper sense of teaching competence and hence identify more strongly with their teaching role.

In the next chapter, the research questions will be reviewed to see the extent to which these contributions might constitute answers to the research questions developed at the start of the thesis.

Chapter 9: Conclusions

9.1 Introduction

This chapter presents the primary conclusions arising from the findings identified in the empirical chapters. This chapter starts by restating the research questions followed by the answers to these questions. The limitations of the research methods used in this study and recommendations for further research are presented next. The implications of this research study for academic developers, academics and university policymakers will be discussed in the concluding part of this chapter.

9.2 The Research Questions

This research study contributes to the existing body of knowledge about the field of academic development for TEL. This study addressed the following main question:

How can academic developers assist academics in HE to make pedagogically-informed uses of learning technologies?

The following sub-questions were also used to guide this research study:

- a) How can academic developers learn what academics need to make pedagogically-informed uses of technology?
- b) What kinds of academic development activities help academics to change the way they think about their teaching?

The extent to which this research inquiry answered the above questions will be discussed below.

9.2.1 How can academic developers learn what academics need to make pedagogically-informed uses of technology?

A diversity of data collection tools can be used by academic developers to learn what academics need to make pedagogically-informed uses of technology. Academic developers can learn about the teaching development needs of academics directly through discussions and indirectly through inferences from evidence. Academics, in particular those who are interested in improving their teaching, are

generally explicit with academic developers about their teaching experiences and concerns about technology-enabled teaching. Academic developers can also assess teaching development needs on the basis of evidence that they gather, for example through observations of class-based teaching and use of learning technologies, and analysis of teaching-related documents. Furthermore, academic developers can also learn about teaching development needs during PD interventions. This research study used class teaching observations, analysis of teaching-related documents and VLE usage, and semi-structured interviews to develop a deep understanding of the teaching practices and working context of the participating academics. This understanding has informed the design and delivery of the PD intervention around the needs of the academics. The PD intervention, therefore, was not based on conventional assumptions regarding what academics need to know, but on evidence-based design decisions.

The class observations enabled me to develop an understanding of the existing teaching practices of the participating academics. I learnt about the participants' organisation of class teaching, their class teaching and learning resources, their use of learning technologies, their rapport with students, their questioning styles, etc. As discussed in Chapter 2, the CF represents the undergraduate learning experience as a process of interactions between the teacher, the learner and peer learners, occurring at the discursive and the experiential levels. Several influential learning theories, including instructionism, constructionism, socio-cultural learning and collaborative learning, can be represented on the CF, making it a useful model for generating detailed descriptions of the process of academic learning. The elements of the CF were therefore used to draw up a class observation checklist that was used to document the range of teaching practices used during classes by the participating academics. This checklist featured the teacher's and students' behaviours related to teaching and learning at the discursive and experiential levels. The adaptive and reflective processes described by the CF were not included in the observation schedule, because these processes are internal behaviours that could not be observed in class. The class observations in this research study showed that teaching occurred primarily at the discursive level of the CF. The teaching style adopted by the majority of participants in this study was lecture-based teaching. Student-teacher interactions were observed during the teaching sessions of all participants. Student-student interactions were less common; these were observed in the classes of six participants. However, none of the observed sessions involved only one-way lecturer to student teaching. All teaching sessions

featured student interactions in the form of questioning or discussing. These findings contradict the widely held assumption that university lectures consist of uninterrupted lecturer presentation teaching approaches (Twigg, 1999; Knapper, 2016).

Class observations, although time-consuming for the researcher, revealed aspects of teaching practices that were not evidenced by the other data collection methods used in this research study. During the interviews, for example, several participants reported that in class, they were not explicit about the learning outcomes of a session or a class activity. This was contradicted by evidence collected during class observations showing that all participants communicated learning outcomes at the beginning or sometime during the lecture. The methodology adopted in this study showed that the academics' self-reports about their teaching practices should be treated with caution; academics may not always be able to articulate their own good teaching practices. The findings suggest that there may be potential inconsistencies between what academics say about their teaching and their actual teaching practices. This is similar to the dissonance between the academics' beliefs about teaching or 'espoused theories', and their teaching practices or 'theories-in-use' (Argyris, Putnam and Smith, 1985).

Two sets of individual interviews were organised to learn what academics need to make pedagogically-informed uses of technology. The individual interviews organised prior to the commencement of the PD intervention contributed to a deeper understanding of the teaching practices of participating academics. These interviews provided information about the participants' background and motivations to teach, and their teaching formation. The academics shared the processes that they followed when revising their study-units. The interviews revealed that the participants had only engaged in short term PD activities. I also learnt that these academics did not follow scholarly research about university pedagogy and disciplinary teaching. The participants reported that their professional discussions were generally limited to disciplinary research and the administrative aspects of teaching. Through the interviews I also learnt about the participants' concerns about teaching and technology, and their expectations of a PD course. A second set of interviews was organised after the first part of the course to assess further the teaching development needs of the academics. Apart from helping me understand the participants' experience of the curriculum and format of the first part of the PD intervention, these interviews provided information about the participants' expectations for the remaining part of the PD course.

The study-unit descriptions were analysed prior to the class observations to gather information about their content and the pedagogical practices of participating academics. Almost none of these descriptions revealed information about the teaching approaches used during the study-unit. These findings show that module descriptors may be of limited help in studying the pedagogical practices of academics. Analysis of the VLE areas of the observed study-units provided evidence of how the participants used this learning technology. The majority of academics used the VLE as a repository of learning resources. Some participants posted supplemental learning resources in the VLE. The use of interactive features of the VLE by participants was minimal. These findings support claims that technology in HE teaching is often used to supplement existing pedagogical practices (Hoffmann, 2006; Kirkwood and Price, 2014). The online discussions during the PD course also provided evidence about some class teaching practices that were not observed in class. One participant, for example, posted that she complemented group discussions with background music. During the PD intervention some forum posts also showed that some participants implemented small scale changes in their teaching practices.

Reflecting back on the activities of this research study, methodologically this thesis suggests that academic developers should use a diversity of data collection tools to inform them about the academics' needs to make pedagogically-informed uses of technology. Each data collection tool reveals aspects of the academics' practices and experiences, but each is also limited and potentially unreliable as a single source of evidence. Analysis that takes multiple sources of evidence into account such as interviews alongside observations, will therefore, be able to provide a richer account and also identify points of consistency or inconsistency in interpretations.

There is scope for adjustments to the process of the academic development used in this research study. As indicated earlier, the class observations enabled me to develop an understanding of the teaching practices of the participating academics. These observations were limited to a single set of lectures of the same study-unit. Reflecting back on these observations, all participants except for one, adopted the same teaching practices throughout the study-unit. Furthermore, observing a set of lectures for a particular study-unit may not necessarily reveal all the pedagogical practices of an academic. Teaching styles may vary in different contexts. Some academics may adopt different teaching styles depending on the topic they are teaching, the size and age of the student group, and the IT facilities and furniture

arrangements in classrooms. It is recommended that in future iterations of this PD model, the academic developers discuss with each academic the possibility of observing classes where different teaching approaches are practiced. This purposeful approach to sampling could result in more time-efficient classroom observations. It may also lead to a richer description of the teaching characteristics of academics. Furthermore, during the PD course the academic developers will be able to bring in the different teaching practices observed in class. The format of the individual interviews organised prior to the commencement of the PD intervention was effective. As indicated earlier, these interviews contributed to a deeper understanding of the participants' teaching formation, their teaching concerns and their expectations of the PD course. These interviews also helped me develop a better rapport with each academic. The individual interviews held during the course served their purpose of helping me to learn about the participants' course experience and their expectations for the remaining part of the course. The desk research conducted to identify the typical content of PD courses for TEL offered by other educational institutions was useful however, this is not something that needs to be repeated in future iterations of this academic development.

Reflecting on the time required for the class teaching observations, interviews, document analysis and the delivery of the PD course, there may be limitations to scaling up this academic development model in terms of participant numbers unless the institution invested sufficient academic developer time to support the intervention. This academic development model spans over one academic year: (a) one semester for classroom observations, pre-course interviews and documentary analysis; and (b) one semester for the delivery of the course and mid-course interviews. Participants in this research suggested that the future iterations of this PD course should be extended from 6 to 12 weeks. They suggested that the first week will be used to review the learning resources and submit their first postings whilst the second week will be used for online discussions. Academic developers should allocate time for reflection throughout the course. During the delivery of the course, time should also be allocated for the facilitation of online discussions and the development of learning resources according to the evolving needs of the participating academics. It is estimated that eighteen days (eight hours each) would be required to repeat the PD intervention for fifteen participants with minimal changes to the present learning resources.

9.2.2 What kinds of academic development activities help academics change the way they think about their teaching?

The evidence of impact of the PD course on the academics was gathered through the individual interviews and the participants' postings in the VLE. This research study shows that a variety of academic development activities have impacted the academics' thinking about university teaching. Specific examples, which can form part of a repertoire of PD approaches and activities, are as follows:

- a) *The PD course helped some participants to develop the necessary confidence to use learning technologies to enhance their teaching practices.* These academics thought about their teaching and decided to prepare a technology-based teaching session. One participant, for example, posted her experience of implementing the online discussion that she designed during the PD course. She shared details of this experience and asked participants to provide her with feedback about time-saving strategies to monitor student contributions in online discussions. She was not expected to implement the online discussion but she went ahead, tried this with her students and shared her positive experience with the other participants. Another participant prepared a screencast following the instructions provided during the course. He shared this screencast with the other participants and explained how he was planning to use this in his study-unit.

- b) *The PD course helped some academics to develop the necessary confidence to implement immediate changes to their teaching practices without the use of technology.* These academics have thought about their teaching and went ahead with immediate changes to their teaching practices. Two participants, for example, used their newly acquired knowledge about the CA theory and LOs to revise their study-units. Other participants reported that they have used Bloom's taxonomy for defining LOs whilst preparing new module descriptors. Another participant reported that he revised the examination questions as a result of his engagement with the concept of deep/surface learning. He said that he included more discussion-type questions in the examination paper than usual. Another participant mentioned that the online discussion prompts presented in the PD course helped him improve his questioning techniques in class. He said that he started dedicating more time before lectures to prepare class questions in order to create a scaffolded learning environment. He said

that his improved questioning style incentivised students to take a more active role in their own learning and promoted a shared responsibility for teaching and learning in class. Therefore, this research study showed that the online PD course helped participants improve their class teaching through better documented study-unit descriptions, interactive instructional design (e.g. improved questioning techniques for better student engagement in class) and assessments for deep learning.

- c) *The PD course did not persuade all participants about the value of all forms of TEL.* Some academics have thought about their teaching and decided that this may not be improved with technology. One participant, for example, remained unsure about the benefits of online discussions because he taught small student groups. Another participant was concerned about the workload generated by online discussions since he taught large student groups. After having experienced, discussed and reflected on technology-based teaching and learning, these participants felt that this teaching approach has limitations that mean it is not well suited to their context. Although these two participants remained sceptical about using online discussions within their specific courses, their opinions about the potential of this technology for their study-units were however better informed after having followed the PD course.

The academic development activities that helped academics change the way they think about their teaching included:

- a) *Sharing descriptions of teaching practices* – The online discussions facilitated focused learning conversations about the teaching practices of participants. The sharing of pedagogical practices encouraged participants to reflect on their teaching and contributed to decisions to introduce changes to their teaching practices. One participant, for example, posted that she uses background music during group discussion sessions. Another participant replied that this was a good idea that can work in his history teaching sessions. In another communication, two participants posted that they should sit in each other's classes to observe their teaching practices. Exposure to other teaching practices may encourage academics to adapt their pedagogical practices. The diversity of disciplines and teaching experiences acted as another pedagogic resource in teacher development courses aimed

at HE academics, rather than being an impediment to participants working together.

- b) *Setting activities that are closely related to the participants' context* – These activities were useful to engage the participants in thinking about their teaching practices. One of the activities, for example, required the academics to revise the LOs of one of their study-units. The posts indicated that the participants reflected deeply on the rationale behind every LO and the teaching, learning and assessment activities of their study-units.
- c) *Peer feedback* – This is another academic development activity which helped the participants reflect on their teaching practices. One of the activities, for example, required the participants to design an online discussion and identify a marking rubric for this discussion. They were required to share these on the VLE for peer feedback. This activity generated a substantial amount of interactions between participants. The peer feedback helped the participants to clarify and improve aspects of their online discussions and rubrics.
- d) *Learning resources* – The participants reported that the learning resources presented during the PD course helped them reflect on their teaching practices and make some immediate changes, for example, revising LOs on study-unit descriptions, revising questions in exams, etc.
- e) *Educational theory linked to teaching practices* – The participants reported that they found the different theories of learning useful to describe their teaching practices. The educational theory was presented in the form of concise summaries with links for optional further reading. One participant, for example, said that he found the educational theory and its application to activities very useful. Prior to the course, the same participant expressed concerns about educational theory in other teacher training courses. This illustrates that it is not the theory itself that is the issue, but instead the way in which it is introduced and engaged with in the course.

9.3 Research Limitations

This research study is limited by the characteristics of the exploratory case study methodology. This research adopted the case study methodology to study how academic developers can assist academics to make pedagogically-informed uses of learning technology. A common criticism of the case study methodology, however, is that the findings of a single case have limited generalisability (Tellis, 1997). The intent of this research study, however, was not to generalise findings to other universities but to develop a better understanding of the design process for academic development, and to provide an example of a model of an online PD for TEL in a HEI. Although the findings of this study may be relevant to and have potential implications for other universities, no claims are made that this work is representative of practice elsewhere.

The class teaching observations of each participant were limited to a single set of lectures of the same study-unit. Observing a set of lectures for a particular study-unit may not necessarily reveal the full repertoire of the pedagogical practices of an academic. Some academics may adopt different teaching styles depending on the topic they are teaching, the size and age of the student group, and the IT facilities and furniture arrangements in classrooms. Therefore, another limitation of this study was that the teaching practices were mostly studied through a single set of lectures from the participant's study-unit. As with the limitations of the case study, the value of this approach has been in creating deeper understanding and representative examples; no claim is made about the representativeness of these specific observations in relation to teaching practice more generally.

Another limitation of this research study is that the measure of impact of the PD intervention was based on the participants' postings in online discussions and their self-reports during the interviews. The participants' self-assessed reporting should be treated with a degree of caution; the participants may have mentioned immediate or planned changes in their teaching practices that have not and will not occur in class. However, my ongoing reflections and experience of each academic during the course of this study convinced me that the participants' intentions were genuine. Firstly, by the end of the study it was evident that a trust-based relationship had developed amongst all participants and between the participants and I. The PD intervention and interviews created an environment where the participants expressed openly their successes, concerns and ideas about teaching. Secondly, during the

online discussions and interviews, the participants went into elaborate details when they discussed their teaching practices and plans to innovate their teaching. Thirdly, the academics volunteered in this research study to improve their teaching through TEL; the participants did not receive any certificate for participating in the course or other form of incentive. Given this context, I was not aware of any reason why participants would not be truthful in their online contributions and what they said during the interviews.

The interpretation of findings of this research study should take into account the characteristics of the participating academics. The ten participants were not randomly selected; they were selected on the basis of their motivation to improve their teaching practices. This research, therefore, describes the effects of a PD intervention on a group of academics that were already motivated to improve their teaching practices. As expected, this motivation was an important factor that influenced the participants to persist and complete the PD course. De Rijdt *et al's* review of evaluation studies of PD programmes concluded that the participants' motivation is the most common variable influencing the impact of PD programmes (2012). The characteristics of the participating academics in my research study, however, are not intended to be generalised; instead, the conclusions drawn have implications for the design of PD programmes for academics who are less enthusiastic about teaching.

9.4 Areas for Further Research

As indicated in the previous section, this research study addressed the effects of a PD intervention on academics that were keen on discovering the extent to which different learning technologies can affect and improve their pedagogical practices in the future. Further research may focus on the effects of this academic development model on academics that are reluctant to consider learning technologies and undervalue their teaching role. It would be interesting to explore how this academic development model will be experienced by academics with these characteristics. We need to understand if these academics would persist and complete similar PD programmes, and what influence it would have on the way that they think about and undertake their teaching.

This research study does not present any evidence of programme impacts beyond the end of the PD programme. It does not tell us, for example, if the participants' daily teaching practices involve more use of learning technologies after

having followed the PD course. Also, it does not tell us if the academics' conceptual changes about teaching were sustained after the PD course. Future research may focus on investigating the long-term effects of such PD courses on academics, the students and the institution.

The CF was used by the academic developer to analyse the teaching practices of the academics participating in this study. Further development of the class teaching observation schedule based on the CF should involve testing the schedule for consistency, thus ensuring inter-rater reliability. Future research may also involve the use of the CF observation checklist to investigate whether different disciplines adopt specific patterns of teaching practices. Another research may involve academics using the CF to analyse their conventional and technology-based teaching practices.

This research study showed that there is pedagogical value in having a diversity of disciplinary and teaching experiences represented in PD programmes. There may be scope for further studies to explore if a mix of early-career and mid-career academics sharing their teaching experiences will have additional pedagogical benefits, and whether these benefits will be different for each group.

9.5 Recommendations

Throughout this chapter, a number of implications arising from the findings of this research study were highlighted. This section summarises these implications on academic developers/researchers, academics, university leadership/policymakers and researchers.

Academic developers and researchers - This research study addresses the practical questions of how to undertake academic development. This thesis documents the process followed to design, develop and deliver an online PD intervention for TEL based around the needs of academics with little or no formal training in university teaching. This research illustrated approaches that academic developers can adopt to learn about the teaching practices of academics, their concerns about conventional and technology-based teaching, etc. Academic developers may also learn about the underlying principles used to guide the design and delivery of the online PD intervention in this research. As indicated earlier, generalisability claims are not made for this exploratory case study (Tellis, 1997);

however, academic developers at other universities may identify similarities to their contexts, and learn from the conclusions drawn.

Academics - As indicated in Chapter 2, there is an increasing expectation that academics should use technologies to enhance the student learning experience. As shown in this study, sometimes choosing not to use technology is evidence of a well-informed understanding of TEL. University teachers may find this study beneficial, in that it shows how a group of academics in a traditional campus-based university have experienced an online PD course for TEL. Learning technologies have been described as a 'Trojan mouse' which require academics to learn how to use technologies and to re-assess their conventional and technology-based teaching practices (Sharpe and Oliver, 2007). Learning technologies therefore, act as a catalyst for changing the pedagogical practices of academics. PD interventions aimed at increasing the use of learning technologies encourage academics to re-assess their teaching practices more generally.

University leadership and policymakers – This research study provided further evidence about the concerns of academics regarding the time commitment required to fully engage in PD activities and to innovate their teaching. Although many universities have created academic development units to promote their teaching and learning enhancement agenda, additional actions are needed to address those factors which constrain academics from engaging fully with PD and then from transferring their learning from PD to daily practice. The evidence in this thesis shows that organising time-efficient PD, supporting course release time and recognising teaching innovation through career progression, for example, can better support the teaching enhancement agenda. This research study has also evidenced how institutional policies and departmental cultures may act as barriers to transfer of learning from PD activities to daily practice (Knight and Trowler, 2000; Norton *et al*, 2005; Lindblom-Ylänne *et al*, 2006). To address this, university leadership should ensure that all institutional processes and policies are aligned with the teaching enhancement agenda. Departments should be encouraged by the university leadership to showcase exemplary and innovative teaching.

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Appendix A - Information Sheet and Consent Form

PARTICIPANT INFORMATION SHEET

Research Title: Academic development to support pedagogically-informed uses of learning technologies

Researcher: James Cilia

Introduction

You are being invited to participate voluntarily in a research study conducted through the Institute of Education, University College London. The University requires that you give your signed agreement to participate in this study.

The researcher will explain to you, in detail, the purpose of the research study, the procedures to be used, and the potential benefits and possible risks of participation. The following sections contain information about this research. Please read through this information and discuss any questions you may have with the researcher. If you decide to participate in this research study, please sign the consent form accompanying this information sheet.

Purpose of Study

The broad purpose of this research study is to contribute to the general body of knowledge and research work in the area of e-learning and pedagogy in higher education. This research addresses the problem of use of learning technologies to enhance the quality of the learning process and outcomes at university. Specifically, this research study investigates how academics in higher education can be assisted to adopt pedagogical practices that lead to enhanced student learning experiences when using learning technologies.

This study is a compulsory requirement to complete a doctoral thesis at the Institute of Education, University College London.

Procedures

This study requires the participation of academics working at a higher education institution. The criteria used to select participants are:

- Academics who are holders of a doctorate (PhD) in an academic discipline outside of education (such as arts, natural sciences, engineering etc.)
- Academics who have a full-time resident academic stream status.
- Academics teaching undergraduate study-units.

The data for this study will be collected through:

- *Document analysis*: Study-unit descriptions, teaching, learning and assessment material used in study-units will be analysed to understand the context of pedagogical practices adopted by academics. These materials will be partially used in the interview sessions with the participants of the study.
- *Observations*: The researcher will observe the teaching and learning activities in classroom and in online environments. The observations will focus on the pedagogical practices and use of learning technologies by academics and students.
- *Interviews*: Each participant will be interviewed individually, for approximately 45-60 minutes per session. The interview will cover explanations about pedagogical practices, the teaching and learning material used etc. The interview will also serve to clarify any questions that the researcher may have after undertaking field observations and document analysis.

Benefits for Participants

Part of this research study requires participants to follow a professional development (PD) course on the use of learning technologies in teaching and learning. It is expected that this PD course will initiate participants into a process of reflection about their pedagogical practices and how these could be enhanced through the use of learning technologies. Participation in this PD course requires participants' commitment in terms of time and energy. However, the potential benefits derived from the PD course should outweigh its 'negative' impact on the participants' time. The PD course is expected to help participants adopt pedagogical practices that make more efficient and effective use of learning technologies.

Confidentiality

The information collected in this study will be kept confidential. Data will be stored securely and will be made available only to the researcher and his supervisor, Dr Martin Oliver, unless participants specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link participants to the study.

Contact information

<p>If you have questions at any time about the study or the procedures, you may contact the researcher:</p> <p>James Cilia</p>	<p>If you have questions about your rights as a participant, contact:</p> <p>The Doctoral School Institute of Education, University College London. 20 Bedford Way London WC1H 0AL</p>
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CONSENT FORM

I voluntarily agree to participate in the study on *E-learning as a catalyst for changing the pedagogical practices of higher education academics*. I understand that this research study is being conducted by James Cilia, a doctoral student at Institute of Education, University of London. The findings of this study will be used as the foundation of his doctoral dissertation.

I understand that the research methods which may involve me are:

- Allowing the researcher to observe my teaching/learning processes in the classroom and in the online environment. The observations will span over one semester *before* I follow the professional development (PD) course.
- Participation in interviews following classroom and online observations.
- Participation in a PD course on the use of learning technologies in higher education teaching and learning. The course will be facilitated by the researcher. The duration of the course will be 14 hours. It will be a blended course that includes face-to-face and online sessions.
- Facilitating researcher's access to my study-unit descriptions, teaching, learning and assessment material used in my study-units.

I grant permission for the interviews and class observations to be audio recorded and transcribed, and to be used only by James Cilia for analysis of interview data. I grant permission for the data generated from the above methods to be published in his dissertation and any future publication(s) in relevant fields.

I understand that:

- All information will be kept confidential.
- Any identifiable information in regard to my name will not be listed in the dissertation or any future publication(s).
- I may withdraw from the study at any time, without giving reasons and without penalty. Upon withdrawal from the study the information I have given will be deleted or returned to me.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. If you have further questions concerning matters related to this study, please contact the researcher:

James Cilia

_____	_____	_____
Participant's Name:	Participant's Signature	Date
_____	_____	_____
Researcher's Name:	Researcher's Signature	Date

A copy of this consent form has been given to you to keep for your records and reference.

Appendix B - Class Observation Schedule

The following pages show the draft and final versions of the class teaching observation checklist.

DRAFT VERSION

LECTURER:

STUDY-UNIT CODE:

DATE:

TIME:

VENUE:

DISCURSIVE LEVEL Learning through listening, reading, writing, discussing, communicating, debating, articulating, presenting etc.		NOTES
D	Teacher describes/presents theory, concept or idea (1)	
D	Learner asks questions / comments / clarifies / critiques the teacher's theory, concept or idea. (2)	
D	Teacher redescribes / clarifies theory, concept or idea. The teacher answers the learner's questions. The teacher provides hints and comments. (3)	
D	Learner asks questions / comments / clarifies / critiques the theory, concept or idea with peers. (13)	
D	Other learners discuss questions / comments and offer alternative ideas to the learner. The process assists the learner to refine his/her understanding of theory, concept or idea. (14)	
D	Learner presents conception as a product. Learner presents the concept, theory or idea as product to the teacher. (12)	

LECTURER:

STUDY-UNIT CODE:

DATE:

TIME:

VENUE:

EXPERIENTIAL LEVEL Learning by doing, practising, experimenting, rehearsing, analysing, testing, making building etc		NOTES
E	Teacher sets task goal/s. The teacher identifies clear learning objectives in regard to the concept. (5)	
E	Learner's action/activities to achieve task goal/s. The learner attempts to meet the teacher's topic goal. (7)	
E	Teacher's feedback on the learner's action/s. (8) Extrinsic feedback: the teacher provides additional re-description and/or links to new information. The teacher provides feedback in terms of right/wrong comments, hints, new material or a different task. Intrinsic feedback to the learner i.e. information about how close their action was to the goal, or what effect of their action was.	
E	Learner modifies or revises action/s to achieve task goal/s. (9)	
E	Learner shares practice attempt with peers. Learner shares information about his/her task attempt with peers. (15)	
E	Other learners share the practice attempt with the learner. The peers share information about their task attempt with the learner. (16)	

LECTURER:

STUDY-UNIT CODE:

DATE:

TIME:

VENUE:

ADAPTIVE PROCESS		
A	Teacher adapts a task practice environment for the learner's needs. Teacher designs a learning environment based on the learner's theory, concept or idea (4)	
A	Learner adapts practice of task using his/her current theory, concept or idea. Learner uses her/his current understanding to tackle the task goals. Learner adapts her/his actions in the light of the theoretical discussion. (6)	
A	Other learners adapt practice of task using their current theory, concept or idea. (18)	

REFLECTIVE PROCESS		
R	Teacher reflects on the learner's performance at the experiential level. This will help the teacher with his/her explanations at the discursive level. (10)	
R	Learner reflects on her/his action. The learner reflects on the relationship between the goal, their action and its effect. (11)	
R	Other learners reflect on their actions. (17)	

FINAL VERSION

LECTURER:

STUDY-UNIT CODE:

DATE:

TIME:

VENUE:

DISCURSIVE LEVEL Learning through listening, reading, writing, discussing, communicating, debating, articulating, presenting etc.		TIME IN 2 MINUTE INTERVALS																												
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58
D	Teacher describes/presents theory, concept or idea (1)																													
D	Learner asks questions / comments / clarifies / critiques the teacher's theory, concept or idea. (2)																													
D	Teacher redescribes / clarifies theory, concept or idea. The teacher answers the learner's questions. The teacher provides hints and comments. (3)																													
D	Learner asks questions / comments / clarifies / critiques the theory, concept or idea with peers. (13)																													
D	Other learners discuss questions / comments and offer alternative ideas to the learner. The process assists the learner to refine his/her understanding of theory, concept or idea. (14)																													
D	Learner presents conception as a product. Learner presents the concept, theory or idea as product to the teacher. (12)																													

LECTURER:

STUDY-UNIT CODE:

DATE:

TIME:

VENUE:

EXPERIENTIAL LEVEL Learning by doing, practising, experimenting, rehearsing, analysing, testing, making building etc.		TIME IN 2 MINUTE INTERVALS																												
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58
E	Teacher sets task goal/s. The teacher identifies clear learning objectives in regard to the concept. (5)																													
E	Learner's action/activities to achieve task goal/s. The learner attempts to meet the teacher's topic goal. (7)																													
E	Teacher's feedback on the learner's action/s. (8) Extrinsic feedback: the teacher provides additional re-description and/or links to new information. The teacher provides feedback in terms of right/wrong comments, hints, new material or a different task. Intrinsic feedback to the learner i.e. information about how close their action was to the goal, or what effect of their action was.																													
E	Learner modifies or revises action/s to achieve task goal/s. (9)																													
E	Learner shares practice attempt with peers. Learner shares information about his/her task attempt with peers. (15)																													
E	Other learners share the practice attempt with the learner. The peers share information about their task attempt with the learner. (16)																													

LECTURER:

STUDY-UNIT CODE:

DATE:

TIME:

VENUE:

ADAPTIVE PROCESS		TIME IN 2 MINUTE INTERVALS																													
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
A	Teacher adapts a task practice environment for the learner's needs. Teacher designs a learning environment based on the learner's theory, concept or idea. (4)																														
A	Learner adapts practice of task using his/her current theory, concept or idea. Learner uses her/his current understanding to tackle the task goals. Learner adapts her/his actions in the light of the theoretical discussion. (6)																														
A	Other learners adapt practice of task using their current theory, concept or idea. (18)																														

REFLECTIVE PROCESS		TIME IN 2 MINUTE INTERVALS																													
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
R	Teacher reflects on the learner's performance at the experiential level. This will help the teacher with his/her explanations at the discursive level. (10)																														
R	Learner reflects on her/his action. The learner reflects on the relationship between the goal, their action and its effect. (11)																														
R	Other learners reflect on their actions. (17)																														

ADDITIONAL NOTES:

- Describe the classroom layout.
- How many students attended class?
- Organisation & Instructional Aids:
 - Begins and ends class on time.
 - Well prepared to deliver the lecture. Provides and follows an outline or organisation for the class session.
 - States objectives or agenda for the current class session.
 - Relates the lecture to the previous lecture/s, or provides students with opportunity to do so.
 - Conveys the purpose of each in-class activity.
 - Summarises periodically throughout and at the end of class or prompts students to do so.
 - Uses a variety of instructional aids e.g. whiteboard, electronic presentations, diagrams, handouts, websites, and videos.
 - Uses the VLE to provide learning resources.
- Rapport with Students:
 - Calls students by name.
 - Establishes and maintains eye contact with students.
 - Treats students with respect.
 - Attends respectfully to student comprehension or puzzlement. Questions from students are treated seriously, not as interruptions.
 - Invites student participation and comments.
 - Demonstrates flexibility in responding to student concerns.
 - Addresses potentially disruptive behaviours before these impact the lecture.
 - Uses positive and appropriate humour.
- Questioning & Discussions:
 - Asks recall questions and higher-order thinking questions that challenge students to think more deeply.
 - Makes sure that comments or questions have been heard by all.
 - Allows adequate time after asking questions for students to formulate a good answer.
 - Follows up short or inadequate answers with probing responses that require the students to extend or improve their answers. Prompts with hints, rephrased or simplified questions as needed.
 - Invites alternative or additional answers.
 - Refrains from answering own questions.
 - Responds to wrong answers constructively.
 - Draws non-participating students into activities/discussion.
 - Prevents specific students from dominating activities/discussion.
 - Encourages students to respond to their peers throughout the discussions. Asks students to comment on each other's remarks and/or by asking one student to respond directly to another.
 - Encourages students to interact civilly/respectfully with each other.
 - Guides the direction of the discussion. Mediates conflict or differences of opinions.

Appendix C - Email Invitation 1

The email sent to academics inviting them to participate in the research study.

From: James Cilia
Date: 30 September 2012 at 10:37
Subject: Research Study
To: XXXXXX

Hi XXXXXX

Hope this email finds you well. Best wishes for the start of the academic year.

I am currently reading for a PhD at the Institute of Education, University of London. My study involves an action research project related to the pedagogical practices and use of learning technologies by university academics. The objectives of this study are:

- To improve the teaching and learning process at university
- To understand how academics can be assisted to adopt pedagogical practices that lead to enhanced student learning experiences when using technologies.
- To develop and study the effects of a professional development course that can help academics adopt pedagogical practices that lead to enhanced student learning experiences when using technologies.

I am looking for a few participant academics to help me with this study. Do you think we can set up a meeting to provide you with more details and explore the possibility of your participation in my study? If yes, can you suggest a couple of days/times when we can meet?

Many thanks,
James

Appendix D - Email Invitation 2

The email sent to academics to invite them to participate in an individual interview.

From: James Cilia
Date: 13 March 2014 at 09:49
Subject: Research Study Interview
To: XXXXXX

Hi XXXXXX,

Hope this email finds you well.

In the past months I have been doing classroom observations with other academics. During the course of classroom observations, I have been seeking guidance from my supervisor etc.

The next stage in my research study involves conducting a short 45-minute informal one-to-one interview to elicit some further information about a typical teaching session of the XXXXXX that I observed. During the interview we will refer to the material prepared (e.g. lesson plan, lesson notes, MS PowerPoint presentations, activities, etc.) for a particular lesson that we will discuss. Feel free to choose any lecture you wish to discuss during the interview... ideally you select a typical lecture.

Please suggest two dates/times when you can do the interview.

Thanks for your time and assisting me with my study.

Best wishes,
James

P.S. At the end of the interview we will discuss your availability for the short course on the use of learning technologies in teaching and learning.

Appendix E - Interview Questions 1

The underlying questions were used to guide the individual interviews with participants before the PD course. These interviews were organised between March and April 2014. The class teaching observations were completed prior to these interviews.

First Interview

- What made you take up a teaching and research career at the University?
- Can you talk about the events and experiences in your life that made you the teacher you are today? Have you ever followed professional development courses focusing on improving your teaching practice?
- Can you talk about the preparation of one typical lecture of the observed study-unit?
- Are you planning to make changes to the study-unit? What triggers changes to your study-units?
- Do you talk about or discuss your lessons with colleagues? Do you share your successes and concerns about your teaching practices?
- Do you follow trends in teaching methodologies used in your discipline area? How?
- Can you share any concerns that you may have about your teaching?
- Do you see yourself making more use of learning technology in your lessons? Explain.

Appendix F - TEL Courses

Table F.1: Sample of Australian universities offering TEL modules as part of a postgraduate certificate in teaching & learning in HE

University	Programme	TEL Module/s
Charles Sturt University	Graduate Certificate in Learning & Teaching in Higher Education	<ul style="list-style-type: none"> ▪ Designing Blended Learning Environments in Higher Education
Griffith University	Graduate Certificate in Higher Education	<ul style="list-style-type: none"> ▪ Teaching Online
Swinburne University of Technology	Graduate Certificate in Learning & Teaching (Higher Education)	<ul style="list-style-type: none"> ▪ Design and Delivery for Online Learning ▪ Digital Learning Environments
University of Southern Queensland	Graduate Certificate of Education Specialisation Tertiary Teaching	<ul style="list-style-type: none"> ▪ Transforming Learning with ICT ▪ Designing for Flexible Learning Environments ▪ Online Pedagogy in Practice ▪ Networked and Global Learning
University of Western Australia	Graduate Certificate in Tertiary Teaching	<ul style="list-style-type: none"> ▪ Digital Technologies for Learning
University of Tasmania	Graduate Certificate in University Learning & Teaching	<ul style="list-style-type: none"> ▪ Technology Enhanced Learning and Teaching

Table F.2: Sample of UK universities offering TEL modules as part of a postgraduate certificate in teaching & learning in HE

University	Programme	TEL Module/s
City University London	Postgraduate Certificate in Academic Practice	<ul style="list-style-type: none"> ▪ Information & Communication Technology in Higher Education ▪ Technology Enabled Academic Practice
Imperial College London	Postgraduate Certificate in University Learning & Teaching	<ul style="list-style-type: none"> ▪ Digital Learning
Keele University	Masters in Learning & Teaching in Higher Education	<ul style="list-style-type: none"> ▪ Technology enhanced learning ▪ Technology Project
King's College	Postgraduate Certificate in Academic Practice in Higher Education	<ul style="list-style-type: none"> ▪ Supporting Technology Enhanced Learning
Queen Margaret University Edinburgh	Postgraduate Certificate in Professional & Higher Education	<ul style="list-style-type: none"> ▪ An Introduction to Technology Enhanced Learning
Queen Mary University of London	Postgraduate Certificate in Academic Practice	<ul style="list-style-type: none"> ▪ Teaching with Learning Technologies ▪ Technology Enhanced Teaching in Practice

University	Programme	TEL Module/s
University of Bath	Postgraduate Certificate in Academic & Professional Practice Programme	<ul style="list-style-type: none"> ▪ e-Learning
University of Birmingham	Postgraduate Certificate in Academic Practice	<ul style="list-style-type: none"> ▪ Learning in the Digital Age
University of Edinburgh	Postgraduate Certificate in Academic Practice	<ul style="list-style-type: none"> ▪ Online Learning Environments ▪ Learning & Teaching with Technology in the Classroom
University of Glasgow	Postgraduate Certificate in Academic Practice	<ul style="list-style-type: none"> ▪ Learning with Technology
University of Kent	Postgraduate Certificate in Higher Education	<ul style="list-style-type: none"> ▪ Technology in the Academic Environment
University of Leeds	Postgraduate Certificate in Learning & Teaching in Higher Education	<ul style="list-style-type: none"> ▪ Teaching with Learning Technology
University of Liverpool	Postgraduate Certificate in Learning & Teaching in Higher Education.	<ul style="list-style-type: none"> ▪ Design for learning utilising digital technologies

Table F.3: Sample of US universities offering TEL modules as part of a postgraduate certificate in teaching & learning in HE

University	Programme	TEL Module/s
University of Wisconsin Milwaukee	Certification in Higher Education Teaching	<ul style="list-style-type: none"> ▪ Using Technology with Adult Learners ▪ Seminar in Communication & E-Learning
Michigan State University	Graduate Certificate in Teaching & Learning	<ul style="list-style-type: none"> ▪ Education in the Digital Age
University of Georgia	Interdisciplinary Certificate in University Teaching	<ul style="list-style-type: none"> ▪ Technology to support teaching & learning
University of Kentucky	College Teaching and Learning Certificate	<ul style="list-style-type: none"> ▪ Instructional Technology
University of Missouri–St. Louis	Certificate in University Teaching	<ul style="list-style-type: none"> ▪ Teaching with Technology

Table F.4: Other TEL courses for HE academics

Institution	Programme
Association for Learning Technology	<ul style="list-style-type: none"> ▪ Open Course in Technology Enhanced Learning
Dublin Institute of Technology	<ul style="list-style-type: none"> ▪ Technology Enhanced Learning, Teaching & Assessment
Epigeum	<ul style="list-style-type: none"> ▪ Blended Learning ▪ Learning Technologies ▪ Teaching Online
Online Learning Consortium	<ul style="list-style-type: none"> ▪ Online Teaching Certificate

Appendix G - Content of PD Course (Part A)

Theme	Rationale	Content & Activities
Aims of HE	<p>PD about university teaching should begin with an understanding of the purpose of university education. Academics should reflect on their role in helping students develop the qualities, skills and understandings during the university course. These graduate attributes go beyond the subject/disciplinary expertise that form the core of most university courses.</p>	<ul style="list-style-type: none"> ▪ Reading: 'The learning aims of higher education' (Tom Bourner, 1996). ▪ Discussion: 'Facilitator Guided Discussion on Learning Aims of Higher Education'. This activity will require participants to discuss the six aims of HE (presented in the reading) in relation to one of their study-units.
Drivers for TEL	<p>PD for TEL should help academics understand the rationale for TEL in HE. Academics should reflect on the contribution of TEL to the purposes of HE.</p> <p>This theme featured in the curriculum of many TEL courses.</p>	<ul style="list-style-type: none"> ▪ Video: 'A Vision of Students Today'. ▪ Reading: 'Drivers for TEL' (compiled notes).
Understanding learners	<p>During the interviews, academics expressed concerns about students who are passive in class and lack the motivation necessary to achieve high grades in assignments and examinations.</p> <p>Understanding the learners' motivations to study can help academics better engage with students.</p> <p>Academics should reflect on how their teaching influences the students' approaches to learning. This will help academics identify teaching strategies that encourage students adopt deep learning approach in their study-units.</p> <p>The themes 'understanding learners' and 'deep/surface learning' featured in the curriculum of many TEL courses.</p>	<ul style="list-style-type: none"> ▪ Video: 'Teaching Teaching & Understanding Understanding.' ▪ Reading: 'The Higher Education Academy: Deep & Surface Approaches to Learning.' ▪ Reading: 'Approaches to Learning' (compiled notes). ▪ Discussion: 'Approaches to learning and theories of learning'. The first part of this discussion will focus on approaches to learning. The participants will be invited to reflect on their undergraduate student experience and identify examples where they engaged in rote learning. They were required to discuss if such rote learning was useful for understanding the subject. They will also be invited to reflect on their least favourite study-unit and discuss the learning approaches adopted by students. ▪ Video: Memorisation or understanding: are we teaching the right thing? (Eric Mazur, 2014).

Theme	Rationale	Content & Activities
Understanding learning	<p>Learning theories provide academics with the knowledge base required to make sound decisions regarding the design, delivery and assessment of their study-units (Ramsden, 1993).</p> <p>Reviewing the main theories of learning (associative, constructive and situative) can help academics determine what theory (or theories) is informing their teaching practices.</p> <p>Academics can also reflect on adopting teaching strategies based on different learning theories.</p> <p>'Theories of learning' is another theme which featured in many TEL courses with a pedagogical orientation.</p>	<ul style="list-style-type: none"> ▪ Reading: 'Theories of Learning' (compiled notes). ▪ Discussion: 'Approaches to learning and theories of learning'. The second part of this discussion will focus on theories of learning informing the teaching practices of participants. The activity will help participants reflect on the rationale behind each learning theory and how this helps them in their classroom practices.
Course design	<p>Understanding the models/theories used for designing university courses (face-to-face, blended or online) is important for academics.</p> <p>Analysis of the participants' study-unit descriptions, showed some issues in terms of the quality of learning outcomes and the level of content detail. The classroom observations also showed that some participants do not document and explicitly communicate learning outcomes for each teaching session.</p> <p>Syllabus design is an important task in the course design process. During the planning stage of the course, academics should reflect on the aims and objectives of the course. Many institutions provide guidelines to assist academics document effective learning outcome for their courses.</p> <p>The PD course will assist participants to document effective learning outcomes for study-unit descriptions and teaching sessions.</p> <p>The 'Constructive Alignment' theory and 'Bloom's Taxonomy for defining learning outcomes' featured in many TEL courses.</p>	<ul style="list-style-type: none"> ▪ The PD course will feature an exemplary course description with documented learning outcomes. ▪ The PD course will feature learning outcomes for each teaching session. ▪ Reading: 'The Higher Education Academy: Constructive Alignment'. ▪ Reading: 'Applying the Constructive Alignment to Outcomes Based Teaching' (Biggs & Tang, 2009). ▪ Reading: 'Constructive Alignment' (compiled notes). ▪ Activity: 'Applying the CA to study-units'. The participants will discuss the value of documenting learning outcomes related to knowledge and understanding, and skills according to the institutional guidelines. They will reflect on the learning outcomes of one of their study-units and revise these as necessary. The participants will also discuss the teaching and learning activities, and assessment methods to help students achieve one or more of the identified learning outcomes in the selected study-unit.

Theme	Rationale	Content & Activities
Collaborative learning	<p>Reflecting on and experiencing 'collaborative learning' are useful activities for academics involved in blended and online courses.</p> <p>During the interviews, participants expressed concerns about low student participation in online discussions. Participants will discuss strategies that encourage student participation in online discussions.</p> <p>Also, the classroom observations showed that some academics: (a) asked questions that were predominantly of a recall type and/or (b) did not allow time after questioning for students to think and formulate an answer.</p> <p>The participants will engage in online discussions around higher-order thinking questions. They will also experience facilitation skills in the context of asynchronous discussions, where the facilitator allows time for contributions and replies to questions. This online collaborative experience will enhance the participants' questioning techniques in class.</p> <p>'Facilitating online learning' is a common theme in TEL courses.</p>	<ul style="list-style-type: none"> ▪ The PD course will provide a collaborative learning experience. The course will foster the development of a learning community. ▪ Reading: 'Community of Inquiry Framework' (compiled notes). ▪ Reading: 'Asynchronous and Synchronous E-Learning' (Hrastinski, 2008). ▪ Reading: 'Online discussions' (compiled notes). ▪ Reading: 'Rubrics for online discussions: Samples' (compiled notes). ▪ Discussion: 'Designing & assessing online discussions'. The participants will develop an online discussion for one of their study-units. They will be required to develop a discussion prompt and present this to their peers for critique and feedback.
Reflections on and discussions around teaching	<p>During the interviews the participants said that they did not engage in systematic reflections and discussions around teaching.</p> <p>Pedagogically focussed PD courses provide a formal setting where academics discuss concerns and successes about their teaching practices.</p> <p>The 'reflective practitioner' theme features in many TEL courses.</p>	<ul style="list-style-type: none"> ▪ The PD course will encourage participants to reflect on and discuss how they can improve their pedagogical practices. ▪ The participants will be encouraged to locate resources related to the scholarship of teaching and learning in their subject areas. ▪ After following the PD course, the academics will be encouraged to continue using the discussion boards to share their teaching successes and concerns.
Content of study-unit areas on the VLE	<p>Analysis of use of the VLE revealed that none of the participants followed the institutional guidelines regarding the content of the study-unit areas on the VLE.</p>	<ul style="list-style-type: none"> ▪ The participants will see an example of how the content of an online study-unit can be organised in the VLE. The organisation of content will follow the guidelines recommended by the participants' institution.

Theme	Rationale	Content & Activities
Intermediate & advanced features of the VLE	<p>During interviews, the participants indicated that they wanted to move beyond the use of the VLE as a repository of learning resources and learn about the intermediate and advanced features of the VLE.</p> <p>The PD course will model the use of different features of the VLE in the delivery of fully online study-units.</p>	<ul style="list-style-type: none"> <li>▪ Participants will experience the use of communication tools in the VLE including: Class Announcements, Help Forum, topic discussion boards and a synchronous conferencing tool. <li>▪ The Help Forum was mostly used to disseminate information and step-by-step instructions to use intermediate and advanced features of the VLE for example: tracking student activity in VLE, creating groups in VLE, adjusting forum subscriptions.

Appendix H - Content Organisation of PD Course in VLE (Part A)

Research Study: Technology Enhanced Learning, Teaching & Assessment

TECHNOLOGY ENHANCED LEARNING, TEACHING & ASSESSMENT

Class Announcements

This forum is used by the facilitator to communicate important information about the study-unit. All participants will also receive a copy of this information in their University mailbox. This is a one-way forum which means that participants are not able to respond to posts in this forum.

Help Forum

This is the place where we can post questions about the study-unit & technology. If you see a question that you can answer, please go ahead and reply. We need to ensure that no question or request for help goes unanswered.

GENERAL INFORMATION

-  Syllabus
-  Schedule
-  Netiquette for Online Discussions
-  VLE Training & User Guides
-  Glossary

1. INTRODUCTION

LEARNING OUTCOMES

Welcome! In an online course, it is always beneficial to use the first week to begin establishing a supportive learning community. This week's activities will help you:

- Review the structure and requirements of the course.
- Establish connections with other course participants and the facilitator.
- Identify the aims of learning in higher education.
- Identify the main drivers for technology enhanced learning.

 Week 1 - Facilitator's Presentation (10 mins)

REQUIRED READINGS & VIEWING VIDEO

 Required Reading: The Learning Aims of Higher Education (30 mins)

 Video: A Vision of Students Today (5 mins)

 Required Reading: Drivers for Technology Enhanced Learning (10 mins)

DISCUSSIONS

 Introductions Forum (20 mins)

 Facilitator Guided Discussion on Learning Aims of Higher Education (60 mins)

2. UNDERSTANDING LEARNING & LEARNERS

LEARNING OUTCOMES

This week's activities will help you:

- Explain the concepts: deep learning and surface learning.
- Identify strategies to encourage students to adopt a deep learning in your study-unit.
- Review the main theories of learning: associative, constructive and situative.
- Reflect on the theory (or theories) of learning informing your teaching practice.

 Week 2 - Facilitator's Presentation (13 mins)

REQUIRED READINGS & VIEWING VIDEO

 Videos: 'Teaching Teaching & Understanding Understanding' (20 mins)

 Required Reading: Approaches to Learning (10 mins)

 Required Reading: The Higher Education Academy: Deep & Surface Approaches to Learning (15 mins)

 Required Reading: Theories of Learning (35 mins)

DISCUSSION

 Discussion: Approaches to Learning & Theories of Learning (90 mins)

Optional Activity

 Video: Memorisation or understanding: are we teaching the right thing? (45 mins)

3. PEDAGOGICAL MODELS & FRAMEWORKS FOR TEL - Part A

LEARNING OUTCOMES

This week's activities will help you:

- Define the term 'Constructive Alignment'
- List characteristics of effective learning outcomes.
- List common pitfalls in writing learning outcomes.
- Write effective learning outcomes for an undergraduate study-unit that you presently teach or are planning to teach.
- Design a teaching and learning activity to best achieve one of the learning outcomes.

 Week 3 - Facilitator's Presentation (8 mins)

 Required Reading: The Higher Education Academy: Constructive Alignment (20 mins)

 Required Reading: Applying Constructive Alignment to Outcomes Based Teaching & Learning (30 mins)

 Required Reading: Constructive Alignment Notes (40 mins)

DISCUSSION

 Discussion: Applying the Constructive Alignment to my study-unit (105 mins)

4. PEDAGOGICAL MODELS & FRAMEWORKS FOR TEL - Part B

LEARNING OUTCOMES

This week's activities will help you:

- Define the three presences in the Community of Inquiry Framework: social, cognitive & teaching presence.
- Design questions that stimulate engaging, substantive and compelling online discussion.
- Identify or design a rubric to assess an online discussion.

 Week 4 - Facilitator's Presentation (16 mins)

REQUIRED READINGS

 Community of Inquiry Framework: Notes (15 mins)

 Asynchronous & Synchronous E-Learning (15 mins)

 Online Discussions: Notes (10 mins)

 Rubrics for Online Discussions: Samples (20 mins)

DISCUSSION

 Designing & Assessing Online Discussions (90 mins)

OPTIONAL ACTIVITIES

 Video: Facilitating Online Discussions - Dr Sarah Haavind

 Reading: Avoiding Web Discussions Pitfalls

 Sample Rubrics for Different Activities

Appendix I - Email Invitation 3

This email was sent to academics inviting them to participate in the online PD course.

From: **James Cilia**
Date: 22 October 2014 at 11:37
Subject: Continuation of Research Study
To: XXXXXX

Hi XXXXXX,

Hope this email finds you well. Hope you also had a good start of the academic year.

It's been quite a while since we last spoke.

Following analysis of the data collected during the class observations and the semi-structured interview, I shall be proceeding with the next phase of my research study. This shall involve a 6-week fully online course - Technology Enhanced Learning, Teaching & Assessment - which I will be facilitating.

The aim of this course is to help you with the use of the UoM VLE and other learning technologies to enhance the quality of the learning process of your students. *This course goes beyond the use of the VLE as a repository of learning resources.* It should help you design pedagogically sound learning activities and assessments that make use of available technologies. It should give you an opportunity to experience virtual learning from a student's perspective. You should find this course useful if you will be introducing online learning components in your study-units.

What will be your commitment? The course will require a weekly commitment of 3 to 4 hours (maximum) per week (including readings, viewing resources and activities). I have dedicated a significant amount of time to identify critical readings and in some cases generated concise learning resources. I have timed the weekly readings and activities to ensure that the 3-4 hr weekly commitment will not be exceeded.

Attached please find syllabus and schedule of the course.

The plan is to start the online course as from next Wednesday 29th October and finish this by the 9th December. I do appreciate that this course will take some of your precious time, however I genuinely believe that you will benefit from following this course and it is hoped that you pick up practical ideas for your teaching.

I would be extremely grateful if you can continue supporting me with my PhD study and participate in this course. I am hoping that 10 academics from different departments will be following this course.

Would you be able to follow the course?

Many thanks,
James

Appendix J - Email Invitation 4

This email was sent to academics inviting them to participate in an individual interview after they have followed Part A of the PD course.

From: **James Cilia**
Date: 9 February 2015 at 08:11
Subject: Meeting ?
To: XXXXXX

Hi XXXXXX,

Hope this email finds you well.

Would you have a slot for a face to face meeting later on this week during these times?

- Wed 11th 0800-1130hrs
- Thu 12th 0800-1400hrs
- Fri 13th any time

The agenda of the meeting will be to gather feedback on your experience of the first part of the 'Technology Enhanced Learning, Teaching & Assessment' course and to identify your expectations for the remaining part of the course.

Thanks,
James

Appendix K - Interview Questions 2

The underlying questions were used to guide the individual interviews with academics after following Part A of the PD course. These interviews were organised in February 2015.

Second Interview

- Can you talk about your experience of the first part of the PD course?
- Can you share your opinion about the quality and quantity of learning resources and activities of the PD course?
- Do you have feedback on the structure and organisation of the PD course?
- Have you implemented changes to your study-units or teaching practices as a result of your participation in the PD course? Please explain.
- Are you planning any changes to your study-units or teaching practices? Please explain.
- What are your expectations of the remaining part of the PD course?
- Can you indicate which learning technologies interest you for your study-units?

Appendix L - Content of PD Course (Part B)

Theme	Rationale	Content & Activities
Understanding learners	<p>During the interviews and Part A of the PD course, academics expressed concerns about engaging today's students.</p> <p>This theme featured in the curriculum of many TEL courses.</p>	<ul style="list-style-type: none"> ▪ Reading: 'Digital Natives & Digital Immigrants - Use of Laptops in Class' (compiled notes).
Course design	<p>Understanding the models/theories used for designing university courses (face-to-face, blended or online) is important for academics.</p> <p>The CF helps academics design conventional and digital teaching-learning activities that motivate and enable learning. It has been particularly influential on thinking about the choice and use of digital technologies for learning.</p> <p>The flipped class model enables academics to dedicate class time to application of concepts and engagement of students in class.</p>	<ul style="list-style-type: none"> ▪ Video: 'The Conversational Framework' ▪ Reading: 'The Conversational Framework' (compiled notes). ▪ The PD course will demonstrate a combination of teaching methods and technology to cover several of the iterative processes described in the CF. ▪ Video: 'What is a flipped class?' ▪ Video: 'Chemistry Lessons Flipped' ▪ Video: 'PowerPoint & Flipping the Lecture' ▪ Reading: 'EDUCAUSE: 7 Things You Should Know About Flipped Classrooms'.
Developing learning resources	<p>During interviews, the academics expressed an interest in learning how to design & develop digital content for their study-units.</p> <p>Before designing new learning resources, the academics should source and adapt free e-learning resources - Open Educational Resources.</p>	<ul style="list-style-type: none"> ▪ Reading: 'Open Educational Resources' (compiled notes). ▪ The PD course will demonstrate the use of OER. ▪ Reading: 'Guidelines for Presentations with Voiceovers'. ▪ Instructions: 'Presentations with Voiceovers, Screencasts & Podcasts.' ▪ Discussion: 'Using an OER'. The academics will be invited to browse through some OER repositories. They will choose one OER and explain briefly how they will use this for one of their study-units.
Collaborative learning	<p>During the second interview some academics expressed an interest in learning how to use collaborative technologies.</p>	<ul style="list-style-type: none"> ▪ Reading: 'Guidelines for Virtual Classroom Software'. ▪ Instructions: 'Using Google Docs as a Collaboration Tool'.

	Collaborative learning technologies enhance the engagement of students during teaching and learning sessions.	<ul style="list-style-type: none"> ▪ Activity: The participants will experience the use of virtual classroom software.
Assessment & feedback using learning technologies	<p>During interviews some academics expressed an interest in learning how to design assessment activities that make use of learning technologies.</p> <p>This theme featured in the curriculum of many TEL courses.</p>	<ul style="list-style-type: none"> ▪ Instructions: 'E-Submissions & E-Marking'. ▪ Instructions: 'Creating a Multiple Choice Quiz'. ▪ Reading: 'Classroom Response Systems'. ▪ Discussion: 'Using learning technologies'. The participants will identify a topic in one of their study-units and briefly explain how they would use one or more of the technologies mentioned during the course.
Coping Strategies	During interviews many participants expressed their concern about their heavy workloads and the time commitment required to enhance their teaching with technology.	<ul style="list-style-type: none"> ▪ Videos: 'Strategies for Managing the Online Workload'. ▪ Reading: 'Strategies for Managing the Online Workload' (compiled notes). ▪ Discussion: 'Online Workload'. The participants will write about three time-saving strategies they will adopt for their study-units. They will be invited to explain how these strategies will affect the design and/or delivery of their study-unit.

Appendix M - Content Organisation of PD Course in VLE (Part B)

Research Study: Technology Enhanced Learning, Teaching & Assessment

5. THE CONVERSATIONAL FRAMEWORK, ONLINE WORKLOAD & OERS

LEARNING OUTCOMES

This week's activities will help you:

- Define six teaching/learning activities in the Conversational Framework i.e. learning through: acquisition, inquiry, practice, production, discussion & collaboration.
- Recognise a set of strategies and time-saving techniques for managing the online workload.
- Identify an open educational resource for a study-unit.

 Week 5 - Facilitator's Presentation (7 mins)

REQUIRED READINGS & VIEWING VIDEOS

 Video: The Conversational Framework (12 mins)

 Required Reading: The Conversational Framework (30 mins)

 Video: Strategies for Managing the Online Workload Part 1 (12 mins)

 Video: Strategies for Managing the Online Workload Part 2 (12 mins)

 Required Reading: Strategies for Managing the Online Workload (20 mins)

 Required Reading: Open Educational Resources (5 mins)

DISCUSSION

 Online Workload & OER (90 mins)

6. FLIPPED CLASSROOM, LEARNING TECHNOLOGIES, ASSESSMENT & FEEDBACK

 Virtual Classroom Session - 20-May-2015 @1300hrs

LEARNING OUTCOMES

This week's activities will help you:

- Define the concept of the flipped classroom and its uses.
- Learn about technologies for:
 - collaborative editing of documents using Google Docs.
 - producing screencasts and podcasts.
 - adding narrations to electronic presentations.
 - collecting immediate feedback or answers in class.
 - providing feedback for electronically submitted assignments.
- Use one or more of the above technologies for a study-unit.

 Week 6 - Facilitator's Presentation (12 mins)

FLIPPED CLASSROOM

 Video: What is a flipped class? (1 min)

 Video: Chemistry Lessons Flipped (1 min)

 Video: PowerPoint & Flipping the Lecture (3.5 mins)

 EDUCAUSE: 7 Things You Should Know About Flipped Classrooms

LEARNING TECHNOLOGIES

 Guidelines for Virtual Classroom Software

 Using Google Docs as a Collaboration Tool

 Guidelines for Presentations with Voiceovers

 Presentations with Voiceovers, Screencasts & Podcasts

 Classroom Response Systems

 E-Submissions & E-Marking

 Digital Natives & Digital Immigrants - Use of Laptops in Class

DISCUSSION

 Using the technologies mentioned this week for a study-unit.

OTHER RESOURCES

 eBook: The Experience of Learning: Implications for teaching and studying in higher education

 eBook: A Handbook for Teaching & Learning in Higher Education

 Strategies for Teaching Large Classes: A Faculty Focus Special Report

Appendix N - Completed Class Observation Schedule

A sample class teaching observation schedule for a 2-hour lecture.

FINAL VERSION

LECTURER: DENNIS MULLA

STUDY-UNIT CODE: NE1 2015

DATE: 14/02/2015

TIME: 1500-1700

VENUE: LB23

Lecture duration 114 min
 21 : 42 min
 22 : 03 : 66 min
 23, Day : 18 min

DISCURSIVE LEVEL	TIME IN 2 MINUTE INTERVALS																													
	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
Learning through listening, reading, writing, discussing, communicating, debating, articulating, presenting etc.																														
D Teacher describes/presents theory, concept or idea (1)	✓				✓					✓																				✓
D Learner asks questions / comments / clarifies / critiques the teacher's theory, concept or idea. (2)										✓																				✓
D Teacher re-describes / clarifies theory, concept or idea. The teacher answers the learner's questions. The teacher provides hints and comments. (3)										✓																				✓
D Learner asks questions / comments / clarifies / critiques the theory, concept or idea with peers. (13)		✓											✓																	✓
D Other learners discuss questions / comments and offer alternative ideas to the learner. The process assists the learner to refine his/her understanding of theory, concept or idea. (14)			✓										✓																	✓
D Learner presents conception as a product. Learner presents the concept, theory or idea as product to the teacher. (12)																														✓

Handwritten notes:

- 21-22 or 23: 3:00 when you start or the last minute
- 23, Day: 18 min
- 20-21: 18 min
- 22: 03 : 66 min
- 23, Day : 18 min
- 20-21: 18 min
- 22: 03 : 66 min
- 23, Day : 18 min

Appendix O - Class Observation Field Notes

A sample of notes taken during a 2-hour lecture.

- 17/10/2015
Dr Dennis - 11221 Use of PowerPoint + Whiteboard
LR3 No. of students: 3
- Lecture 3: Historical Communication in the Dead Sea Scrolls (part 1)
- 1505 + Tutor informed all that he needs to continue text
+ Healer: How did the assignment go? One found it hard. +
Anvianu: that tutor is not going to be strict with last assignment
- 1510 + In groups discuss what you did in your assignment
Student explain what they did to each other.
- 1515 + Section literature
+ Damascus Document (D)
↳ does not come from Damascus but come from Cairo
= middle of
- 1525 + Student (Gillai): talks about the content of the Damascus Document
Student B: talks about the legal issues: purity
Student C: difference v. i. e. in other legal traditions
Tutor: general law + command law
- 1627m + Student A - B: see different perspective of the same thing
historical v. purity does not have to do with in/moral transgressions.
- ~~1630~~
- 1635- + Brecht
1645
- + The Temple > withdrawal from the Temple?
- 1645m Student claims that living in city of Qumran surrounded by
mountains: they are closer to God
- 1648m + Tutor + students talk about the social organization of the Damascus
Scrolls.
+ Life-style
↳ wealth
- 1658m + Tutor helping students to interpret the text they had read
Students also debated or correlated each other's views.

Appendix P - Interview Transcript and Notes

A sample transcript of a mid-course interview including overall impressions, conceptual ideas and issues that were potentially relevant to the research questions.

	Data	Notes
James	I wanted to thank you all. Frankly, I appreciate the fact that you are giving your time over and above your commitment and you stuck to the course. As such we did not lose... miss people along the way. There was one who stopped and then there was one that started and then did not continue.	
David	I am sorry because sometimes <u>I find difficult to keep up...</u> what happens sometimes... last time, when I was abroad I could not keep up. And then because <u>I've done the work late, I found it difficult getting into the conversations of my colleagues...</u> I found it difficult to pick up... even me for example, <u>when there were people who posted late, sort of, in your mind... that's behind me. I wouldn't like to go back to it...</u> but I want to excuse myself. It was difficult to keep up from one week to the next...	Lack of time to follow the course. Importance of sticking to deadlines. Reaction to the process of the course.
James	Do you have any preliminary feedback that you felt...?	
David	On...	
James	On what we covered so far... the experience...	
David	In terms of the course, <u>it's structure and format, I really like it, am enjoying it, it is very well organised etc.</u> It is very obvious... <u>what I realise for example, it requires a lot of time... as much time as if you're delivering this face-to-face, you know.</u> It requires a lot of time... it's very well organised. <u>You're always in touch and in contact with us.</u> Very helpful. As a group everybody is participating on the whole. One suggestion or one feedback... I think that what happened at some point, when for various reasons, either we or you... <u>we could not keep up with the deadlines, I think it created a culture that one can relax...</u> I'm not going to do it this week because we could extend it. Am not sure... but that is what I can...	Positive feedback on structure & format of the course. Student experience of the course showed him that online courses require time. Facilitator's presence in the course. Concern about flexibility regarding deadlines of learning activities.
James	There was an aspect from my side as well. At one point towards the end of November, I felt that it was two-way and	

	Data	Notes
	there was some fatigue... maybe I should have discussed it with you. I share that concern... and even me...	
David	Everybody including me...	
James	The element of preparation... for me it was a first experience as much as it was for you. First hand... <u>it is tough to design and deliver at the same time</u> . Therefore, if you do not have the resources ready from before... or almost semi-polished... it was difficult for me...	Shared my experience with participants of designing and delivering the course at the same time.
David	That's it. Besides finding the resources and upload on VLE, you have to process everything making sure that it's in the right format, you know, trimming and... <u>it's a lot, it's a lot of work</u> .	Student experience of the course showed that online courses requires a lot of work.
James	From my side, I found that, it was difficult... I was noticing that you are working on it and I used to tell myself " <u>What are the best resources?</u> " and at the same time, I said that there is a limit as to how much I can do every week also because even not to overload you. There were moments where <u>I was compiling pieces of readings</u> ... something which is not so normal in typical university lectures. But I used to say... are they going to do a reading? I was feeling guilty... sort of, are they going to do a full reading when one can read these two paragraphs which were important... sort of, there is a one page which is a good summary rather than reading 13 pages. Sort of, I was feeling a bit unsure... am I going to give you the reading...	Shared my views about learning resources presented in the course in terms of quality and conciseness.
David	Unless, I don't know, maybe the plan to have 6 major sessions... <u>for example, instead of having a session every week, the session will be extended to two weeks... so we would have one week to read the stuff and then the second week to write and discuss...</u>	Feedback: extend the duration of the course.
James	Fr Peter also provided this feedback. Exactly the same, he said that every session should have extended over two weeks and we would stick to the plan. First week to digest...	
David	Yes. Everybody would know that we have two weeks... that helps, I think. I realised... because we tend to think... we talk on a pedestal and accuse or point our fingers to the students. But I realised that sometimes, <u>no wonder why students find</u>	

	Data	Notes
	<p><u>VLE over taxing because it does require a lot of time.</u> Imagine the students already have a lot of courses... and then I tell them we have the lesson in class and then you have to work in the VLE and participate in discussions... that's what I am saying... <u>I was in the student's seat here and I have experienced that this requires time...</u> I need to read and then you write etc... so I was imagining what students think when we create... imagine if every lecturer does it. Therefore, it's not...</p>	Following an online course as a student requires a lot of effort.
<i>James</i>	<p>I think that it would be good if we don't add to what the students have... I think that if we want to have a good online discussion, one would replace what happens in class. We don't meet in class because they will have a lot... the readings... Even if its face-to-face they would still have to do it... the problem that we encounter is... somehow there is the culture that some students want to make the grade. If I can read 5 readings and not 7, I go with 5 and still get the grade. I think that... cause even face-to-face, I notice that... this is not the class I observed... there were 6 interested students. As the group increases there are students who tend to remain silent...</p>	
<i>David</i>	<p>In fact, I am teaching a couple of MA taught classes with large groups, 15, 20. Yes, it's always the same 4 students who talk. What I found very useful... thanks to the workshop that we've done with Prof. X... <u>I found it useful the concept of dividing the students in groups of 3... because there yes, they talk.</u> Even when it comes to talking in class... even those who are normally quiet... they do speak out. I found that very useful...</p>	Shares a teaching strategy that he has learnt from another PD course.
<i>James</i>	<p>So, besides your experience, from the perspective of the student, what else did you find useful which new knowledge per se? or new ideas?</p>	
<i>David</i>	<p>Content? In terms of content, there were certain things which I was already familiar with because I had already followed the other workshop. For example, the rubrics... I enjoyed it a lot, although I was familiar but the course was very helpful and now in the past few months, I filled up a couple of APQRU forms for new courses, <u>I used the idea of learning outcomes, aims, sort of. I am paying more attention to that and sort of to make sure that they reflect what I want the students to learn and that the assignment reflect...</u> it's true that sometimes we</p>	Effects of the PD course: - Immediate use of LOs for new study-units - Assignment design is based on the CA Theory i.e.

	Data	Notes
	give assignments that... we don't stop and think that these are reflecting...	aligning LOs with assignments.
<i>James</i>	The concept of CA...	
<i>David</i>	Exactly. I found that very useful, even, sort of... what I am not convinced about... <u>what is the idea that certain verbs are not measurable</u> . For example, if one of the aims, for example, a student will be able to appreciate something... they tell you that this verb is not measurable.	Problems about some verbs used in LOs.
<i>James</i>	Yes. In the same way that certain soft skills cannot be measured... fine I mean, we say develop presentation skills but yes, I have done one presentation... you develop presentation skills? Personally, am not so picky... ultimately, it's more that particular of the course was more to focus a little bit, why are we writing these outcomes? Is it a chore thing? Or there is a value in what we do? And if we are, not creating learning resources... but if we have learning activities... are they really in synch with learning outcomes or sort of, I mean. There are a lot of learning outcomes, the hidden curriculum... they are learning without... unconsciously... if someone is doing research and he went to the Library or he searched in HyDi... we did not document that he is searching in HyDi but that's a skill... the transferable skills.	
<i>David</i>	From one side, I remember Giselle commenting on this, I think. I do partly share her argument that sometimes this makes everything so templatis so... it removes some of the creativity... at the same time then <u>I think they are useful because as an educator they help you to reflect on what you're doing. Sort of, they hold you accountable...</u>	Some concerns about LOs (remove creativity). Appreciates that they help you reflect on what you are doing. Seeing the relevance of educational theory to his academic practice.

Appendix Q - Interview Transcript and Codes

A sample transcript of a mid-course interview including codes.

	Data	Codes
<i>James</i>	Giselle, so basically what I wanted to go through with you today are two things. First of all, the feedback so far on what we've done, both the mechanism of the course and also the contents. I am particularly interested, for example, in which part of the course did impact you and also those parts of the course which you found less useful and interesting.	
<i>Giselle</i>	Umm usefulness... usefulness... I think everything was. The first two where it was very theory based, as you know, I found it a bit tedious, because it is my own personal... the way I teach, I feel is very spontaneous and I don't like unpacking it personally. And so, all the sorts of theories of learning...as I was reading them, <u>although it's interesting, I feel I don't really want to go into it at that level. I do not like unpacking my teaching... I am spontaneous. However, I found the theory parts which are normally considered tedious useful. The theoretical underpinning also, when talking to other academics gives you more standing. The learning theory was very useful.</u> I think you don't always have to enjoy what you're learning. Sometimes it's, you know, this is one of these examples that... it is good to think of it on that level, surface learning, deep learning and all these. That was okay. <u>I'm being honest, I didn't really enjoy doing it, but it was definitely useful. The last one that you did, which was more kind of hands on... that was very much more... what I was particularly looking for.</u> But I've used it already. I've used it. I'm going to be scheduling in a discussion on VLE. <u>So, I've split my class, which is a big class with 50 into groups. And I did that using your instructions. They were very easy to follow. I couldn't have done it before. So, it also makes me think about how to mark the input... how to mark the activity. That rubric, I used one of your rubrics and adapted it slightly. One of the rubrics... so yes, that definitely, that was very useful in a tangible way.</u>	<p>Value the educational theory. Strengthening the teacher identity.</p> <p>Value learning activities that are closely related to the teaching context.</p> <p>Immediate change in teaching practice. Trying a technology-based activity as a result of the course.</p> <p>Developing pedagogically-informed positions about the use of marking rubrics for online posts.</p>
<i>James</i>	The learning theories bit... you had mentioned that in the first interview. Yes. I share your concern about those. I think to a certain extent, it's good that even if you don't go into details that you have the theoretical underpinning...	

	Data	Codes
<i>Giselle</i>	For sure! For sure!	
<i>James</i>	More or less what we've covered was already known to you... you were practising that already but maybe you did not know its academic label. And I think it's good even when talking to other academics, it's like giving it more... more of a standing. Sometimes I think that for several academics teaching is...	
<i>Giselle</i>	Teaching is secondary... I enjoyed it a lot. Most particularly in my situation, is that it's a stimulus for learning constantly. Maybe because I'm early career... maybe 10 years down the line when I've done the same course, 10 times, I'd be a bit jaded. I hope not. But I think it's a matter of renewing the whole thing...	
<i>James</i>	Your personality is that you want to change... you like to improvise... you're not just happy with a lecture. I used to observe your sessions. And I also think that your students used to enjoy your sessions because they used to participate. Okay there may be a few participants who are passive but the majority were with you all the time.	
<i>Giselle</i>	They do. No. It's true. I tend to demand that, you know. In the sense I demand... I expect it. And when it doesn't happen, I am not happy with my performance. I demand that of myself. That is what I meant.	
<i>James</i>	I know that the learning outcomes topic bothered you a bit during our course. But we don't have to be so precise...	
<i>Giselle</i>	<i>Laughs.</i> I know. I know. That's what I mean... however James, <u>having said that, in real life now, in university now, the way we are functioning, learning outcomes are important. You have to be able to articulate your outcomes well enough to set up a new course. So, I mean... I appreciate having to think about it and...</u>	Value the educational theory.
<i>James</i>	How does it compare to the course which you're following at the moment with Prof XX?	
<i>Giselle</i>	I did that last year.	
<i>James</i>	You did that last year then. How does it compare with this one so far?	

	Data	Codes
<i>Giselle</i>	This one... And they're different. Very different. <u>This one is more... much more academic I feel.</u> It's just very different. Prof XX does a lot of workshop stuff and with a lot of discussions which are very useful. Um, <u>you do learn a few useful teaching methods when the participants share things.</u> But um... how can I put it? Online stuff we did nothing. I can see them both running half and half, because you do it so differently. I don't think you can say one is...	PD course is academic compared to a previous course that she followed. Sharing teaching practices from different disciplines.
<i>James</i>	No. I'm not saying one is better than the other... it's more the content, you know, how does it compare to the content...	
<i>Giselle</i>	The hands on... the VLE stuff is not done at all. And teaching online is not done at all. So that's not something that is addressed in his course and you're doing it.	
<i>James</i>	But I imagine you covered constructive alignment and learning outcomes...	
<i>Giselle</i>	<i>Thinking.</i> Um rubrics for sure. Learning outcomes... I don't remember doing it. I'm not saying we didn't do it, but I don't remember. And constructive alignment... definitely not. That's what I meant... it was more academic.	
<i>James</i>	What do you think about this particular course? For the average academic, is it too much? Would you recommend this to other staff?	
<i>Giselle</i>	It depends...	
<i>James</i>	Or do you think? Is it above average? Is it too much. Cause you are inclined to use technology... you know what I mean...	
<i>Giselle</i>	Yes. Yes. Too much, definitely not. The thing is, it depends on the academics. <u>If they're long, well established professors, I can't imagine them doing this.</u> Not because they don't need to... in the sense that... you know, I think they may be at a stage where they can't be bothered to change the way they teach. But definitely for all the new, the early career academics for sure. I think so.	PD not suitable for established academics...
<i>James</i>	What would you change in the course? Is there something? If you have to run the course, what will you change in the course? Apart from the timings that we need to keep... I need to keep	

	Data	Codes
	myself because at times I felt that even you, you might have been lost ...	
<i>Giselle</i>	No. No. It was very clear. It's really well structured. No! Lost no! I noticed when you were busy. When we do not hear from you... like two weeks of passing there's nothing new... James is busy! It doesn't matter. Obviously, everyone is busy. <u>It's very well structured. Very clear. I like the way you set out with your video... your voice with slides as an introduction. You talk us through what's coming next, what's coming next and all the readings are there.</u> The fact that...	Feedback about the PD course Student experience of technology-based teaching.
<i>James</i>	Do you think that there was a lot of readings every single week? Do you think that there was a lot every single week?	
<i>Giselle</i>	<u>It would be easier if it was stretched over two simply because it does need maybe like three evenings of work.</u>	Feedback on the format of the course.
<i>James</i>	That's what another participant told me...	
<i>Giselle</i>	When you... when you were late catching up, it' was easier on us. <u>But when you, when you were at the beginning, when you were always one step ahead, it was a bit tricky keeping up. So, to make it easier and if time is not an issue, two weeks for each...</u>	Feedback on the format of the course.
<i>James</i>	The first week for the original posting and then perhaps another week for...	
<i>Giselle</i>	Exactly! So then, if you, if you've fallen behind, you can catch up in the second week sort of thing. That will be much easier. Other than that, <u>I think it is very well presented and the... the thing is that we're always learning... learning through the process. So rather than you sitting down and you telling us... and then you can use this technique, you're doing it. So, we're learning by how you are doing it.</u>	Modelling of online instruction.
<i>James</i>	That's my... <u>and even for you to pick up ideas. And even if you want to pick up text like the Help Forum text...</u> like the text for that in your course. And even the... for example, <u>the netiquette guidelines... maybe the schedule...</u> you want to copy text. I mean that's the idea... because this is the problem I think with the university... I think you need templates which will make life easy for you.	Interviews used to explain what I am doing.

	Data	Codes
<i>Giselle</i>	It does I suppose...	
<i>James</i>	The templates you need... I mean this text is good... just adapted it from one study-unit to the next. Just replacing text...	
<i>Giselle</i>	Just adapt it. Tweak it.	
<i>James</i>	In fact, that is what I was preparing this week... because <u>one of the aspects which I am covering now is coping with the online workload</u> . So, some strategies which you may sort of consider so that you can save a little bit of time. You know... it's very difficult to run a course the first time. The preparation is enormous. Particularly identifying quality resources. But I think honestly... probably the next time you run the same course with the resources ready the second time, the third time... it should get easier.	Interviews used to explain what is coming up.
<i>Giselle</i>	Cause most of it is there...	
<i>James</i>	Most of it is there. It's just tweaking it then. Obviously, you need to update any new resources that come up...	
<i>Giselle</i>	Ehe.	
<i>James</i>	<u>So, are you trying to use the online discussion that you wrote about in the course?</u>	
<i>Giselle</i>	<u>Definitely, it's planned for next week. I haven't used it yet.</u> What's going to be interesting is that this semester I have two courses running and then actually do some action research comparing the two. If you remember, I run this course on sociology of cyberspace.	Intention to introduce the online activity.
<i>James</i>	Yes. The Facebook activity. Yes, I remember that...	
<i>Giselle</i>	And this is the second cycle. So, I've got this secret Facebook page and all my students are part of the group and what I do is blended. So, we use Facebook as online real time interface for sharing, which then continues. So, whereas usually, as you know in your observation, I used to get the students to discuss and then feedback. <u>Now, they discuss and post. And what that gives me, which is enriching, is that it remains there.</u>	Pedagogical benefits of online discussions.

	Data	Codes
	<p>So, students last year, my experience was that students would go back during the night, or in the morning, three o'clock in the morning and post. So, it kind of continues... now they take to that really easily. I've already done that last week. I had my class discussion. I don't need to push them, it just happens. What I'm going to be doing in my contemporary sociology, which is a very big group, it's 50. <u>I'm going to get them to discuss through VLE this time. And I hope I'm wrong. But my suspicions... is that they won't take to it as well as they did to Facebook.</u> It will seem like a chore. It could seem like work. Whereas Facebook is more normal life. I hope I'm wrong, but anyway it's going to be... whereas Facebook is much more kind of spontaneous, organic. And I'm actually there in the room anyway when they're posting. I'm in the classroom and then they keep posting afterwards. <u>The VLE one is going to be different. I'm going to give them a text and using your guidance of our last session, I'm going to split them into groups and I give them something to discuss. And I've got a marking rubric to mark their interventions and they know that it's part of their assessment. That's much more formal. They know they're working for their final mark.</u></p>	<p>Thinking about the potential benefits of VLE discussions vs Facebook discussions.</p> <p>Shares her plans about the use of online discussions in VLE.</p>
<i>James</i>	Are you planning to give them the rubric?	
<i>Giselle</i>	Yes, they have it. It's on the VLE already.	
<i>James</i>	Good. Are you replacing a couple of face-to-face sessions or is it additional to what you are doing in class?	
<i>Giselle</i>	<p>At the moment, its additional. At the moment what it's replacing is the way I used to mark it. Cause last year, it used to be... I'd give them a text. It's a reading-based course, so getting them... to get them to really engage with the text. I used to give them a very short written task. Not really summary but more kind of telling what the key points are. Come up with a question, that sort of thing. And I used to mark them. A huge amount of work. I used to have 50 or 55 every week... or every two weeks sometimes. So, I was thinking mainly to get... to save myself that work because then they have an exam at the end, 50/50. I would try to get them and <u>this would be more enriching I think, rather than, than them working on their own and just... this would be more of a forum and a discussion where one of the rubrics I've used gives them marks for coming up with their own original ideas for posting on others.</u></p>	<p>Evidence of thinking on the pedagogical benefits of the VLE discussion forum.</p>

Appendix R - Themes, Codes and Representative Quotations

Table of themes showing selected associated codes and representative quotations from participants' forum posts and the mid-course interviews. Some of these quotations were included in Chapter 6 and 7.

THEME 1: Academic development addressing the needs of academics

1.1 Activities related to the teaching context.

- Immediate changes in the professional practice.

- Revised LOs in module descriptors.

When I looked at the course outline, I was actually surprised that I did not include any learning outcomes in it...The learning outcomes which I have now set out below are thus new ones; they are not a revision of a prior set. (Sam – Topic 3 Forum Post)

- Tried a technology-based teaching activity.

I have done a forum. More or less I followed the programme that I sent you. I did some changes just to make sure everything is clear and in order. It went well. I was very happy. And more importantly for me is that the students were very happy. I think I will do some changes... With 25 students, I think, my solution would be to group them... For me it was also a way, sort of, to encourage them to explore something in a little more depth which you cannot really do in a 2-hour class. I think that the most positive thing is that it encouraged those who are usually more quiet to sort of be able to participate a bit more fully. (David – Interview 2)

First part of the course covered an important aspect i.e. engaging students online and how to mark their participation. So, I've split my class, which is a big class with 50 into groups. And I did that using your instructions. They were very easy to follow. I couldn't have done it before. So, it also makes me think about how to mark the input... how to mark the activity. That rubric, I used one of your rubrics and adapted it slightly. One of the rubrics... so yes, that definitely, that was very useful in a tangible way. (Giselle – Interview 2)

The reason for this flood of online workload is a very successful experiment I tried out with my first-year class of 47 students. I used the skills taken from this (James') study group and set up a series of 4 reading-based fora. My aim was to get my students to engage critically with short texts (x 4) which then formed the basis of follow up lectures and face to face discussion in class. (Giselle – Topic 5 Forum Post)

In this regard, I have prepared the following sample online lab demonstration which you may access and view by clicking on the link (screencast) (Omar – Topic 6 Forum Post)

- Intention to change the teaching practice.

- Intention to introduce an online activity.

With regards to the amount of work being asked for, perhaps you are right. I suppose one needs to try out things and see how and then they work or not. (Edward – Topic 4 Forum Post)

I used to ask students to write a 1-page critical synopsis of the text, answering particular questions like: What is the main point? How can it be of use to understanding society? Ask one question to the author... etc. - so this year I'll alternate the old plan with this new online activity. (Giselle – Topic 4 Forum Post)

- Academics value learning activities that are closely related to their teaching context.

- Talking about the discussion prompt activity.

An element of trying to do something practical and understand what the VLE can offer. (Edward – Interview 2)

- Prefer activities that are relevant to the context of the academic.

The last one that you did, which was more kind of hands on... that was very much more... what I was particularly looking for. (Giselle – Interview 2)

Cause you've already covered how to engage the students and that's probably one of the most important and you also covered how to mark their participation... (Giselle – Interview 2)

1.2 Just-in-time academic development.

- Learning needs addressed during the course.

I have created a short video about assigning students into separate groups. Please visit the Help Forum (below the Class Announcements) in the course area. Hope you will find this useful. Let me know if you have queries on this. We can set up a short face-to-face meeting to help you. (James – Topic 4 Forum Post)

I shall address Fr Peter's comment regarding tips for large group online discussions in my reply to Sam's contribution. (James – Topic 4 Forum Post)

With regards to the technology for the chats, I don't know to be honest. I expect I would ask IT Services for advice on what is available within the VLE framework. I'm a great believer in the University having a good centrally-designed platform that we can use for our teaching purposes. I suppose there could be the option of introducing a wiki somewhere. (Edward – Topic 4 Forum Post)

The UoM VLE has a wiki and chat facilities. You can have student groups working on both the wiki and chat. I'll prepare the next Tech Tips on wiki and chat. Am not too sure if chat is rich in features as Google Hangouts. (James – Topic 4 Forum Post)

- Learning needs addressed during the interviews.

- Suggested the use of podcasts and YouTube videos for language courses.

In language, maybe links to some podcasts which are available? Maybe? (James – Interview 2)

Ehh... perhaps. (David – Interview 2)

YouTube is full of this stuff... at times, we should not underestimate what's available in YouTube. At times, there will be the short bits... particularly 10-minutes or 5-minutes it could... (James – Interview 2)

Yes. Yes. That's true. (David – Interview 2)

- Discussed the pros and cons of providing direct links to journal readings.

But within the context of a study-unit where you have full-time students... would you still suggest that we provide all the material on VLE? Or sort of, would you suggest to say Okay, you have these readings... go look up the books or look up the articles on your own and then come and discuss on VLE for example... sort of would you provide the material on VLE? (David – Interview 2)

Personally, the material... where I can provide a reading or a link to a reading on the Library subscription... there is a learning. I personally prefer... I am making it easy and provide you with a direct link to the library journal because I know that you know how to look for... but from the student side... I would give them the reference and let them find it. Because I think that it is part of the learning... (James – Interview 2)
- Discussed the separate/visible group features in VLE.

Now regarding the group, I haven't yet experimented with VLE... (David – Interview 2)

That's a feature which is available. You can even have invisible groups. You could have the same questions... And they don't see each other...? (James – Interview 2)

Yes. They don't see each other, but each group is seeing its contributions and you can monitor group A, group B, group C... (David – Interview 2)
- Provided feedback on time-saving strategies when facilitating online discussions.

Because another option could be... maybe for future sessions you consider dividing them in small groups... say four or five groups. Each group discusses things separately and then they come up with one posting... (James – Interview 2)

But how do you know who is working? There's always one who is working more than the rest... (Giselle – Interview 2)

You can look at the interactions. We can always look at the interactions and sort of you can skim through rather than reading through each individual... (James – Interview 2)
- Explained how forum subscriptions work and the benefits of using the Class Announcements forum and the Q&A forum.

... there was a moment when the feedback was coming in, in the inbox no? And then it stopped... (Nathan – Interview 2)

I will explain that... I also sent some emails... something which maybe some people have not discovered in the VLE is... if you don't post in a discussion forum, you don't receive anything... this is not like the class announcements... In class announcements, anything which you post, everybody is subscribed... there is a forced subscription... so students, really and truly, by default will always receive anything which you post in the Class Announcements. So, whenever I wanted to reach all, I always posted in the Class Announcements... (James – Interview 2)
- Suggested the use of short lecture recordings.

That's true! That's true! I asked you... this is important because I was thinking of doing a series of lectures... but these will be too long if they are 2 hours long. It will be too long right? (Omar – Interview 2)

Divide these if you can... I would have shorter videos. (James – Interview 2)
- Suggested the involvement of students in the preparation of learning resources.

We have a particular module, for example, with first years... how to use certain instruments and normally that takes a 2hr session... how to use certain instruments, for example, power supply... (Omar – Interview 2)

Why don't you get a student or a couple of students and prepare recordings? Nowadays they use a smartphone to record a good quality video... (James – Interview 2)

- Suggested the recording of learning resources to support students following evening courses.

The idea of recording a derivation is not a bad idea... I had bought that tablet... so I can write on it and they can see it... because I saw something similar... (Omar – Interview 2)

- Suggested strategies to manage large group online discussions.

The group size... I wanted to discuss this with you... you had a discussion with... (Peter – Interview 2)

From what I have read, research, when there are large groups what are the options? Most of the time, elsewhere... (James – Interview 2)

- Suggested the provision of sample assignments to support students.

One can also consider for example, providing sample graded assignments. You scan a 'A' grade essay, 'B' grade essay and 'C' grade essay and post these on the VLE, so that your students will have a clear idea of your expectations and there will be no surprises. (James – Interview 2)

This is very interesting. I never thought about this. (Sam – Interview 2)

- Explained the flipped classroom pedagogy.

...maybe you can consider an element of the flipped classroom. Not sure if you know about the concept of flipped classroom. This means that certain information which remains... certain concepts that remain from one year to the next... (James – Interview 2)

This is a good idea... (Sam – Interview 2)

1.3 Flexible academic development

- Lack of time to follow the PD course (David, Edward, Giselle, Nathan & Omar – Interview 2)

Again, at times we are in a rat race, that I don't have much time... (Edward – Interview 2)

But when you, when you were at the beginning, when you were always one step ahead, it was a bit tricky keeping up. (Giselle – Interview 2)

I was frustrated that I did not have enough time...I don't know the others... how they're coping? But I am not coping. Which means... there needs to be part of a sabbatical that focusses on this... not research. On this! (Nathan – Interview 2)

- Flexibility in terms of time-frames for completing learning activities.

Your course compares well. Yours was more reasonable with time-frames...even because you were more flexible with us... (Edward – Interview 2)

- Concerns about soft deadlines for completion of activities.

...when there were people who posted late, sort of, in your mind... that's behind me. I wouldn't like to go back to it. When you work on activities late, it will be less engaging. When we did not keep to the deadlines, it may have helped others to relax. (David – Interview 2)

I thought about it...even on timing... if you were doing this with normal students, this has to be done weekly. Otherwise, there won't be commitment... (Nathan – Interview 2)

- Provision of concise learning resources.

And usefully you gave us notes as well... That was useful, to have those notes because that saves time from a lot of readings... I think I am like students... to have one reading sort of... I empathise. (Edward – Interview 2)

- Feedback on the duration of the course.

...for example, instead of having a session every week, the session will be extended to two weeks... so we would have one week to read the stuff and then the second week to write and discuss... (David – Interview 2)

It would be easier if it was stretched over two simply because it does need maybe like three evenings of work. (Giselle – Interview 2)

Maybe every 15 days it would have been better, like, first week for us to read and then assimilate the content and then the discussions etc. (Peter – Interview 2)

THEME 2: Interdisciplinary academic development

2.1 Sharing teaching practices from different disciplines.

- Intention to adopt new teaching strategy in their subject.

- Giselle's post on her use of background music videos during class discussions prompts Edward to consider the use of music in his history lectures.

I like to use music videos as background music during group discussion sessions - I find that students seem happier to discuss in small groups when there is music in the background. (Giselle – Introductions Forum Post)

I like your idea of background music videos; that could work really well for a history discussion with so many good pieces available of historical music scripts. Will try it out. (Edward – Introductions Forum Post)

- Intention to engage in peer class observation.

- Comparing teaching practices led to expressed intentions to engage peer class observation.

David this is a fascinating subject and one day I might just join the study-unit. Since our two fields are kindred it is fascinating for me to see how you go about it and how you have reflected upon Bourner's aims. (Edward – Topic 1 Forum Post)

Indeed, Edward - our subjects are closer than we think, although the methods we use are probably very different (owing to the nature of our sources). But it would be an interesting exercise to sit in each other's classes. (David – Topic 1 Forum Post)

- Academics value interdisciplinary PD.

I mean, that's useful that sometimes you have time, with peers from different faculties, you compare notes and you get another perspective... so that was useful. In fact, that was one of the useful aspects of the course... that you hear the ideas of others... what others are doing on what I will be doing. (Edward – Interview 2).

It's enriching. And also getting to know other academics I never came across. (Giselle – Interview 2)

...even the fact that you are discussing with people from different fields, there will be commonality... there will be things which are totally different because of the different discipline... because we work in silos sort of, we don't usually talk with lecturers from different faculties. (Omar – Interview 2)

THEME 3: Mediation of educational theory

3.1 Connecting educational theory to practice.

- Activities supporting reflections on educational theory.

- Reflecting on the implications of educational theory on the teaching practice.

Sticking with the study-unit... I think that my teaching is informed by the Cognitivist Learning Theory as well as by the Social Constructivist Learning Theory. In one way or another, I use several (if not all) of the nine processes that lead to learning listed in Gagne's table on page 2. (David – Topic 2 Forum Post)

The teaching/learning techniques in the discussion and workshop session would therefore fall into the social constructionist learning theory... This is in contrast with the teaching/learning techniques in the formal lecture sessions which sit clearly within the Cognitivist Theory of Learning, rooted in the processes of thinking, memory and retrieval. (Giselle – Topic 2 Forum Post)

My teaching practice tends to base itself on the "Cognitivist Learning Theory" since I often start with the objectives of the lecture, I briefly revise material on which to build my arguments/discussion, deliver the new material based on previously learned concepts (e.g. in other study units) and test if the students are understanding the material by using test cases or examples. (Omar – Topic 2 Forum Post)

In this sense, I seem to be embracing the Associative Learning theories. But I would like to think that student learning embraces the social constructivist theory that I have read about this morning. ... I would like to think that situative learning takes place on an archaeological excavation where students work for four weeks in the field under supervision at the end of their first year. (Nathan – Topic 2 Forum Post)

As per constructive learning theories, "problems should be ill-defined or ill-structured, meaning that it is not just an easy problem but one that is like problems in the real world". Again, this has given me food for thought, since I always tried to structure students' problems as clear as I could, to make sure that there is no room for ambiguity. The drawback is that this does not mirror the actual problems faced in real life. Now I appreciate that clearly-worded problems may be relevant when the objective is to make a student revise a particular concept, however, "ill-defined" problems could be more relevant when expecting students to apply theory to a particular context. (Sam – Topic 2 Forum Post)

- Learning resource on educational theory helped him reflect on the assessment practice of a senior professor.

Why does this guy come up with these questions, slightly ambiguous? But when I read those readings I realised that, in the world a problem will not be... just replicate this one, but you need to apply it to that complicated situation. (Sam – Interview 2).

- Learning resource on educational theory helped him reflect on the student background.

The expectations of the students when they were showing... we tend to consider, all students the same but in reality, they are not. One of the biggest shocks is that I am teaching students that I know nothing about... from which school they come from, A-levels and O-levels... That gave me a shock in a good way... it makes you aware of... the needs might be different... they might be really different. (Nathan – Interview 2)

- Applied educational theory to teaching practices.

- Applied knowledge of CA theory and learning outcomes to existing and new study-units and in assessment design.

I have substituted here the verb “trace” (which is not observable) with “summarize” in the actual study-unit description, where this LO would aim towards the deep end of the levels of learning. (Peter – Topic 3 Forum Post)

When I looked at the course outline, I was actually surprised that I did not include any learning outcomes in it! The learning outcomes which I have now set out below are thus new ones; they are not a revision of a prior set. (Sam – Topic 3 Forum Post)

I filled up a couple of APQRU forms for new courses, I used the idea of learning outcomes, aims, sort of. I am paying more attention to that and sort of to make sure that they reflect what I want the students to learn and that the assignment reflect... it's true that sometimes we give assignments that... we don't stop and think that these are reflecting the CA theory. (David – Interview 2)

The course helped me reflect about LOs that promote transferable skills. The LOs in my study-units are focussed on disciplinary content. It did not occur to me that the skill of presenting a report could be listed as another LO of the study-unit. (Omar – Interview 2)

To change the outcomes etc, how you did these... (Peter – Interview 2)

So, you found it helpful... how to create learning outcomes and constructive alignment...? (James – Interview 2)

...now I am gradually changing according to... more professional... but this involves a lot of work. (Peter – Interview 2)

- Applied knowledge of the deep/surface learning concept in teaching and assessment design.

And those terms... surface learning or deep learning... I used those terms with students after seeing the video. You can make it simple... you just surface learn but it's not going to be promising for you as students at university etc etc. (Nathan – Interview 2)

The difference between deep and surface learning. That was very useful for me and therefore, when I prepared exam questions especially for fourth years, where you expect a level of maturity. I tried to prepare questions that will not simply get students to tell me what's in the notes that I gave them in class. (Sam – Interview 2)

- Intention to adapt teaching practices based on acquired knowledge of educational theory.

- Introduce activities to help students engage in deep learning.

The main change I would effect would be to distribute more work to them in terms of finding out what exists out there and bring two opposing-view (alternative) groups to debate and other would serve as facilitators or reviewers. (Steve – Topic 2 Forum Post)

I occasionally adopt such approach, when asking students to solve problems in groups during the lecture, and then providing class feedback after all groups have attempted the problem/s. ...Having said this, I only organise such activities when time permits this. Given that now I understand better how such tasks make sense in

a theoretical context as well, I shall make it a point to grant more importance towards these activities. (Sam – Topic 2 Forum Post)

- Intention to introduce learning activities which involve the application of theory.

So, this was interesting for me, that... you don't say this student is good and this student is not... I think this helps... the way I place the subject, I will try to introduce more application to the theory... I can add more weight to lab work... (Omar – Interview 2)

- Academics value the educational theory.

I enjoyed reading the article about the theories of learning. Through it, I have acquired a background to the rationale behind some particular teaching strategies (some of which I practice myself, others I have never practiced). For instance, the importance of drawing on past experiences of students as suggested by cognitivist learning theory, or occasionally inviting a guest speaker (maybe a practitioner in the particular topic) that may get you closer to a "community of practice". (Sam – Topic 2)

I think they are useful because as an educator they help you to reflect on what you're doing. Sort of, they hold you accountable... (David – Interview 2)

I found the theory useful as well as its application in the activities you gave us. (Edward – Interview 2)

...although it's interesting, I feel I don't really want to go into it at that level. However, having said that, it was very useful ...in university now, the way we are functioning, learning outcomes are important. You have to be able to articulate your outcomes well enough to set up a new course. So, I mean... I appreciate having to think about it... (Giselle – Interview 2)

I have realised... let me tell you... the problem is this... we entered the teaching profession without, for example, I entered the teaching profession without knowing anything about... how this should be done. So, I think it's crucial... the theoretical underpinning of something that you do... If you arrive at that point you are missing the fact that you should still need to understand the theoretical underpinning of what you do... if this comes naturally fine but you still need to understand this. (Nathan – Interview 2)

...the method of writing a report or how to present something, there will be other social skills, and those are also important (Omar – Interview 2)

Many things were new to me. We were trained as researchers, not teachers. (Peter – Interview 2)

It was very useful for me... you had the first part focussed on theory. That was very useful. That was a lacuna in my case. I have not met many of the things that you mentioned. I have not followed a B.Ed or a PGCE... so for me that was important. ...I found these at the right level for me to be able to do the tasks that you required us to do. (Sam – Interview 2)

THEME 4: Developing pedagogically-informed positions on teaching and TEL

4.1 Student experience of technology-based teaching.

- Modelling of online instruction.

In these classes, I have experimented with VLE, but the results have not been satisfactory so far. (David – Introductions Forum)

My burning question was always, but how can I use VLE in a meaningful? ...sort of like... and I think through this course I started to discover, sort of, ahh, okay, this is really sort of, a good way of how you could use in a more sort of, it's not just you can access the material but sort of, like to integrate. ... when you look at VLE and see all those features, you say: I don't have time for this... with this course it really facilitated that process... (David – Interview 2)

I can see that this exercise James has set is a great way of getting me to think critically about the text - a good one to adopt, I reckon. (Giselle – Topic 1 Forum Post)

I think it is very well presented and the... the thing is that we're always learning... learning through the process. So rather than you sitting down and you telling us... and then you can use this technique, you're doing it. So, we're learning by how you are doing it. (Giselle – Interview 2)

- Online learning requires a lot of time and effort.

What I realise for example, it requires a lot of time... as much time as if you're delivering this face-to-face, you know. It requires a lot of time... I was in the student's seat here and I have experienced that this requires time... It's very, it's time consuming. A lot of people have this impression that you are using the VLE to save time. But in reality, it is even more time consuming because if you give a lecture you just go in there and you have 2 hours and you're more or less done, whereas with this you have to monitor it every day or every few days... (David – Interview 2)

- Online learning requires more clarity in terms of expectations.

That I understood, that you need to be very clear what is expected online... online more than in class... (Edward – Interview 2)

- Experiencing online discussions as a student.

Even the fact that the discussion was taking place online... this was the first time, I was in a forum. That was interesting... (Omar – Interview 2)

- Student experience of the online course showed him a new model of teaching and learning.

...the idea of... the style of lecturing is completely different. Emphasis from teaching to emphasis on learning. Students absorbing and building the study-unit themselves with the lecturer. That was, I think, the principal breakthrough... more emphasis on the learning rather than teaching. (Peter – Interview 2)

- Learning resources of the course supporting the development of pedagogically-informed positions on teaching and TEL.

Thank you for your time and effort to create a 'one-stop-shop' where so many resources are put together for us. (Edward – Topic 6 Forum Post)

Thank you, James, for the mine of very useful hints and information. (Giselle – Topic 6 Forum Post)

4.2 Peer Learning.

- Learning through discussions.

- Advancing their knowledge about teaching and learning.

Interesting insight Giselle - which implies that through virtual interaction we can encourage more participation on part of students, who are usually silent in class. (Sam - Topic 1 Forum Post)

Thanks for the point you raised that "Recall is not quite the same as learning by rote"... although it may seem obvious, I did not actually think consciously about this when going through the readings. (Sam – Topic 2 Forum Post)

Fr Peter he had one of his posts where he explained how he divides his class... I saw those very relevant. I do not remember the detail... but it was one of things which I marked or I made a copy of that so that I refer to that in the future. The idea of peer to peer, I think that's useful... that sometimes you have an opportunity to listen to others and to speak to others... to see what they're doing... (Edward – Interview 2)

- Participants helped each other to clarify some aspects of their online discussion plans.

I have a question about your last sentence, where you encourage student to post more than the minimum requirement of posts and tell them that the best two will be selected for marking purposes. How would you deal with a situation where a lot of students (and you did say you have large groups) opted to post a lot of comments? And more importantly, how would you make it easier (i.e. more time-efficient for you as the marker) to decide on which would be the best posts in a way that balances subjective and objective criteria?" (Edward – Topic 4 Forum Post)

- Peer feedback provided ideas for future teaching practices.

Thanks for this Sam - I especially like your bulleted list of characteristics of responses which will be credited - very useful, I may well borrow that. (Giselle – Topic 4 Forum Post)

Still, perhaps some revisions in my text could improve the original prompt - and this is the advantage of discussing our work in this forum. (Sam – Topic 4 Forum Post)

- Inviting feedback from peers.

...in some of my classes I do not even get one question (except "Could you repeat..."). Could it also be the case that us lecturers may at times discourage students from raising questions in class, for example if we try to cram the lecture with material? (Sam – Topic 2 Forum Post)

The issue of students not asking questions is complex. Certainly, there is the element of them not wanting to seem 'foolish', by asking a lame question. I counter this by playing up my own Achilles heel - spelling! I am slightly dyslexic and often have problems sorting out vowels on the whiteboard - so I tell them this right at the start, and, you know, Sam - it impacts positively on the classroom dynamics - they always pipe in to correct any errors :) ... and I think it helps put them at ease about not being perfect the whole time. (Giselle - Topic 2 Forum Post)

One of the "don'ts" cited in the table of the Higher Education Academy reading is "Allowing students to be passive". This is one aspect which I should work upon! But

then it is hard to encourage students to take a more active role, especially when lecturing to larger audiences, as we at Faculty X are usually expected to do. Any feedback from other participants regarding this last paragraph, is particularly appreciated. (Sam – Topic 2 Forum Post)

Hi Peter...thanks for your insights. I am particularly intrigued by how you build a study-unit together with your students. Can you elaborate on that? Thanks! (David – Topic 2 Forum Post)

In your learning outcome d, you use 'appreciate' as your verb. Is this on our 'approved list'? (Giselle – Topic 3 Forum Post)

I have a question about your last sentence, where you encourage student to post more than the minimum requirement of posts and tell them that the best two will be selected for marking purposes. How would you deal with a situation where a lot of students (and you did say you have large groups) opted to post a lot of comments? And more importantly, how would you make it easier (i.e. more time- efficient for you as the marker) to decide on which would be the best posts in a way that balances subjective and objective criteria? (Edward – Topic 4 Forum Post)

- Peer encouragement/support.

And I highly appreciate your point when you said that you consider as one of the priorities when students relate the material covered in one study-unit within the general objectives of the degree and topics discussed in other study-units. (Peter - Topic 1 Forum Post)

This is a very interesting approach to build up a friendly environment in class where students can feel more comfortable to take a more active part, Giselle! Well done! (Sam – Topic 2 Forum Post)

I like the way you have thought carefully about surface and deep learning when you designed your Learning Outcomes. This is something I should do to mine, and maybe improve them. (Giselle – Topic 3 Forum Post)

I liked your approach of engaging students before you start with the formal lecture – for instance by showing photos which they can relate to. And in addition, you link these “warming up” interactions to the formal lecture – which shows that the procedure does not merely serve for embellishment purposes! (Sam – Topic 3 Forum Post)

I enjoyed reading your discussion question. I liked the way in which you linked the Scriptures and the Charlie Hebdo Paris Shooting in the same task. I also liked the rubric at the end. I think that it is a very concise and pragmatic way of assessing postings - which students should find clear enough. (Sam – Topic 4 Forum Post)

I particularly like the way you encourage students to 'take on a role' and comment on the Charlie Hebdo from different viewpoints - might borrow that one :) (Giselle – Topic 4 Forum Post)

b) The rubric is quite detailed - and simple / clear at the same time. Well done. (Sam – Topic 4 Forum Post)

I agree with David: passion for the subject and competence are, according to me, what drives students to say: "I want to be like that particular lecturer". (Peter - Topic 1 Forum Post)

Thanks for your reply Sam. I do the same when I give reading lists - I divide them into compulsory and further reading. (David – Topic 2 Forum Post)

4.3 Reflections on conventional teaching practices.

- Reflecting on teaching.

Aim 4: facilitate character building/personal development, I must admit that this has never been a conscious aim of mine as a lecturer, however, on reflection, I realize that when I emphasise the importance or sticking to deadlines, of sharing opinions and ideas within discussions... these are all done with the aim of showing the students the importance of following expected norms within academia... (Giselle – Topic 1 Forum Post)

But, thinking about it now ... it is usually me asking the questions ... they do engage and answer... but there are not many questions posed by the students ... so, critical engagement is weak. (Giselle – Topic 2 Forum Post)

- Reflecting on teaching strategies with larger classes.

However, if the number were to exceed 20 students, I would probably need to change the teaching strategy, although the learning aims & goals would remain the same. (David – Topic 1 Forum Post)

- Concerns about teaching.

Unsure about the idea of different assessments to accommodate different learning styles. Wants to avoid compromising academic rigour. (David – Interview 2)

Concerns about marking rubrics.

Sometimes, I think that it's easy to use because it saves a lot of time. At other times I see this as something too mechanical.... (David – Interview 2)

Like, it is not a personalised assessment... (James – Interview 2)

That's it! And sometimes that's why I refrain from using it. (David – Interview 2)

Concerns about the student preparedness for self-directed learning.

...as soon as you tell them that this week we are not going to meet because it is a reading week for example, they tell you, so we are not going to do anything? Or what are we going to do? Sort of, if you are not there to hold their hands to walk, some will find it confusing still. (Edward – Interview 2)

Learning outcomes may remove creativity.

From one side, I remember Giselle commenting on this, I think. I do partly share her argument that sometimes this makes everything so templatised so... it removes some of the creativity... (David – Interview 2)

- Intention to change teaching practices.

- Intention to maintain active learning throughout the whole session.

I need to work harder on maintaining the active learning mode that we have during the 'exploration and discussion' part and carry it over into the lecture part of the sessions. (Giselle – Topic 2 Forum Post)

- Intentions to change teaching practices to increase student engagement.

The restructuring of study-units is a result of reflection about teaching and learning concepts discussed during the PD course. (Edward – Interview 2)

However, I have never asked or encouraged students to reflect on what they're doing and on how their understanding is developing, maturing, or changing (cf. page 4). That might be worth a try in the future. (David – Topic 2 Forum Post)

I would consider to periodically assign them with small design projects / assignments which are not part of the final assessment, in order to allow the students to make mistakes without penalty and rewarding their effort along the course of the study unit. (Omar – Topic 2 Forum Post)

- Intentions to enhance the use of the VLE.

Add student support links: This is a great suggestion which I will try to implement as soon as possible. Since help is 'out there', might as well direct students to it. (Edward – Topic 5 Forum Post)

Using 'Class Announcements' and 'Frequently Asked Questions', can save work as well. I intend to make future use of these features starting from next academic year. (Sam – Topic 5 Forum Post)

4.4 Reflections on technology-based teaching.

- Pedagogical benefits of technology-based teaching.

- Expressing views about increased student engagement when organising online discussions.

Hi Edward - Like David, I found that some students are more comfortable asking questions/commenting via cyberspace... I feel it has a lot to do with 'feeling safe' - cyberspace offers the opportunity to re-read and edit. (Giselle – Topic 1 Forum Post)

- Advancing thinking about the potential use of online discussions.

In our case, if classes are very interactive, online methods may be useful to help shy students express their opinions/ideas. So online methods of teaching may actually complement what we already do. (David – Topic 1 Forum Post)

- Using the flipped classroom model when teaching large groups.

Hundreds of students... I wouldn't be comfortable. In those lectures you could do the flipped lecture because you can't bring in your students if you have 200 sitting behind the screen... (Giselle – Interview 2)

- Concerns about marking online posts: preference to award marks based on the quality of posting rather than participation.

...the way I was thinking of assessing the participation in the forum was ultimately still very much content-based rather than participation-based. I don't know. That's one of my concerns when tackling... (David – Interview 2)

- Expresses some scepticism about student/peer learning in online discussions. Not all contributions are correct.

But something else I am sceptic about... and this came out of the readings... sort of, in an online forum, there is a different approach where the student is learning from other students... and to be realistic... not all posts will be posts which you learn from... some will write something which is incorrect. (Sam – Interview 2)

Given the large groups that I teach, I wouldn't have time to monitor all student postings. I am not confident about the quality of student learning through online discussions if I don't monitor these. (Sam – Interview 2)

- Reflecting on the use of technology - how are the different group dynamics affected on the VLE. Ask questions about technology hindering dynamics.

...your presentation goes from the students to the lecturer etc... there's this live contact... when we use technology like that, would it, um, be a hinderance to that dynamics? (Peter – Interview 2)

- Needs time to assess the pedagogical benefits of online discussions.

I am not sure about switching my F2F discussions in class with technology-based discussions. I will reflect on the online discussion I designed during the PD course and try it in class to see if it works better than what I am doing in class. (Peter – Interview 2)

- Reflecting on the benefits and challenges of implementing of classroom response systems.

I intend to use many of them (referring to learning technologies presented in topic 6) - but the one that screams YES! to me is the classroom response system. This for three main reasons: 1) it offers a solution to the communication challenges posed by very large classes, 2) it directs me to think more clearly about the material the class is focused on and 3) it combines a process of personal reflection on the part of the students, then discussion in small groups and reassessment of their initial response...

The biggest challenge would be for me to think about the question I pose. It would require one response from two options. This is not easy to do in the Humanities, but forming the question would help crystallise the concepts that the reading focuses on. The aim is to get the students to think critically about these concepts. There is rarely a right or wrong answer - but the most important learning and teaching moment would be getting the students to think about why they answered in the way that they did, and to defend their answer within their small groups.

It would then be fun to repeat the classroom response count, to see if and how the classroom discussion has altered things. (Giselle – Topic 6 Forum Post)

- Barriers to change teaching.

- Workload associated with the use of learning technologies.

Shared reflections on online discussions and workload.

In some of the material that James has supplied, it was suggested that students would be expected to engage in multiple postings throughout the week. I'm not sure whether this is reasonable. Students are typically following other modules (some of them are even employed on a part time basis), and in that case, I myself would opt to allocate a particular day towards a particular module to get some significant amount of work done. (Sam – Topic 4 Forum Post)

At (name of faculty), the number of students participating in our undergraduate courses can easily exceed 100. The problem that students may feel lost among all the postings, may be easily solved by splitting the participants into groups...

I have thus designed the discussion prompt and the rubric, in a way to reduce the lecturer's required time commitment as much as possible. Clearly, it is not possible to assess each and every post, for example as per Rubric Sample 6 (whilst acknowledging that the latter is a very detailed and insightful table). (Sam – Topic 4 Forum Post)

Helped him think about teaching strategies. Managing workload when organising online discussions

I try to introduce the element... some kind of online activity, for example, one of the seminars... we try and do it that way.

This is an option, and elective... so the group will not be very big, normally 15... it should be manageable... (Edward – Interview 2)

Recording videos takes lot of time – does not have time for this. Uploading my own videos would definitely take much of my time, which I cannot afford, at least as long as admin work continues to inundate us HoDs. (Peter – Topic 6 Forum Post)

so ... I think I need to improve my time saving skills ... but really, with a class this big, the scale of the response is unavoidable. What do you think? (Giselle – Topic 5 Forum Post)

If I were to opt for a class discussion, I think I would divide students into 15 groups of around 7 students each, and then it would be the main task of each group to post a summary of their interactions. I would allocate marks primarily on the basis of this summary. I would also leave it up to the students to share the workload and consider selecting their own "moderator" who would summarise the postings. However, I would also have a look at the actual individual posts within the forum, just to "check" that the interactions did actually take place. (Sam – Topic 5 Forum Post)

I think that it is essential to consider the amount of work which an online activity will require on part of the lecturer. (That was the main reason why I opted for multiple choice exercises, where students' responses are corrected and marked straight away, without significant additional input from the lecturer). (Sam – Topic 5 Forum Post)

The tasks given to students but for which no marks are given relate essentially to reading key literature and familiarize themselves with an (mentions subject) report – but I hardly have the time to engage with that reading because the syllabus is vast. Am I happy about this? NO. Do I have the time to change it? NO. My teaching academic effort (an institutional measure of the teaching contribution of each academic) is currently 54 and increasing! (Nathan – Topic 3 Forum Post)

I would like to introduce more student discussions in class, but in reality, how much time do I have in class to do this? The syllabus is vast. There is plenty of content that I need to cover. (Nathan – Interview 2)

I need a lot of time to redesign my study-units and prepare content for an online format. Even revising a few LOs takes a lot of time. (Peter – Interview 2)

- Institutional policies/processes and departmental cultures impacting changes in teaching.

From the university aspect... is it okay for the university, in the sense that, you tell them that I am spending my time with the students online rather than face-to-face? You know how it works with TAEs (Teaching Academic Effort - an institutional measure of the teaching contribution of each academic) etc. So, they won't tell you that you are trying to skim. The reality is that it is the either way round. (David – Interview 2)

I consider (referring student postings in online discussions) that as an assignment but maybe the head of department or... I would like to use this in the master's course where there are few students, maybe 20. And it could be that I use that. And again, subject that there will be the approval. (Sam – Interview 2)

Something important, here... who does not have idea how these things work, like I did not know what it involves... he tells you... 'online forum... the students discuss and the lecturer is just reading... sort of the lecturer is organising this to avoid work'.

Who does not know what it involves, that's how he will interpret that... I don't want to be interpreted like this. (Sam – Interview 2)

One more thing, that as an HoD, I am very much aware of is that University does not cover non-direct contact hours in our computation of TAE. This definitely keeps lecturers away from using these technological aids as much as is desired. (Peter – Topic 6 Forum Post)

TAE issue – Peter raised this in his contribution and I think it is a very valid point in fact. The wording in the Collective Agreement on this (particularly e-learning) is ambivalent. (Edward – Topic 6 Forum Post)

What I really find a stumbling block is assessing students. Each group of students is different. After the first couple of lectures, we lecturers would know what best assessment mode to use with the particular group we are lecturing to. But university administration requests that assessment mode is indicated well in advance. I can't decide to change mode according to the particular group. (Peter – Topic 2 Forum Post)

IPR issue - There is also the related question of who owns the material that I post online / VLE: the University or me? Can my teaching material be used even if I am no longer at the University of Malta? (Edward – Topic 6 Forum Post)

Intellectual Property Rights - Pls refer to the UoM Intellectual Property (IP) Policy 2014 (pg.8). The copyright on learning resources that are entirely produced by you remains with you. (James replying to Edward)

...where I often ask students to discuss, to evaluate or to express an opinion after reviewing evidence. But this has often been criticized by fellow examiners as they feel that the student is not showing what knowledge (of the mentions subject) has actually been gained, especially in final synoptic examinations. (Nathan – Topic 2 Forum Post)

With reference to flipped classes there is also an additional hurdle. If part of the lecture is shifted to videos and notes uploaded via VLE... one would presume that this would reduce the contact hours entailed for the course. I am not confident that there is a system through which one can do this in an effective manner. For instance, the academic-effort-computation which is filled out by academic staff, mainly depends on contact hours. (Therefore, if one shifts a one-hour lecturing out of a 28-hour course to VLE tasks, this will still imply a lower academic effort computation). Given this, I am still sceptic about uploading my own presentations with voice-overs, and asking students to go through them in advance. (Sam – Topic 6 Forum Post)

- Access to VLE & personal technologies impacting TEL

One problem I envisage here is the issue of access to the VLE due to the timing of the course. This is generally a first year, first semester study-unit. Every year I find there are students who have not been given access to the VLE, sometimes into the third week of the semester. It is getting better, but it is still an issue. (Edward – Topic 6 Forum Post)

...we have this situation where we are... this is the week for add/drop... so you still have students who are attending... if you are planning something like this, I think you have to leave it towards later, um, the idea that I organise some form of seminar and put that online... it would have to come later. (Edwards – Interview 2)

However, not all students possess laptops and smartphones. Such teaching-learning exercises would hinder full participation. I also have the impression that not all lecture rooms are equipped with monitors. (Peter – Topic 6 Forum Post)

- Student's response to technology-based learning.

And if you mention, you know, the book... even a paper on the VLE, yet an electronic thing, they still won't read it. What's wrong there? Is it a question of laziness only or it is because of the way they learn and understand, and we have not as yet understood this. This is something which I am thinking a lot about whilst doing these courses... (Edward – Interview 2)

- Lack of technical skills

Another suggestion which I may put into practice is the automation of the assignment. My difficulty is that these kinds of tasks are handled once every semester – and therefore I tend to forget the procedure as to how to go about this. (Sam – Topic 5 Forum Post)

THEME 5: Strengthening teacher identity

...although it's interesting, I feel I don't really want to go into it at that level. However, having said that, it was very useful ...in university now, the way we are functioning, learning outcomes are important. You have to be able to articulate your outcomes well enough to set up a new course. So, I mean... I appreciate having to think about it... (Giselle – Interview 2)

I do not like unpacking my teaching... I am spontaneous. However, I found the theory parts which are normally considered tedious useful. The theoretical underpinning also, when talking to other academics gives you more standing. The learning theory was very useful. (Giselle – Interview 2)

Many things were new to me. We were trained as researchers, not teachers. (Peter – Interview 2)

...the idea of... the style of lecturing is completely different. Emphasis from teaching to emphasis on learning. Students absorbing and building the study-unit themselves with the lecturer. That was, I think, the principal breakthrough... more emphasis on the learning rather than teaching. (Peter – Interview 2)

It was very useful for me... you had the first part focussed on theory. That was very useful. That was a lacuna in my case. I have not met many of the things that you mentioned. I have not followed a B.Ed or a PGCE... so for me that was important. ...I found these at the right level for me to be able to do the tasks that you required us to do. (Sam – Interview 2)

I entered the teaching profession without knowing anything about... how this should be done. ...So, all of sudden... you say... ahh okay... this is it? This I do... this I don't do... crucial no? ... this is like you want to become a chef but you don't know anything about the chemistry of food. No? If there is... some solid base... okay, you say... this is not a question of taste? But if you know something else, you will be even more geared to provide something better...So, I think it's crucial... the theoretical underpinning of something that you do... (Nathan – Interview 2)

Appendix S - PD Course Activity and Participation Reports

VLE screen shot of the PD course activity report (1st October 2014 to 30th August 2015). The report shows the number of views for each activity and resource.

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Computed from logs since Thursday, 1 October 2009, 3:26 PM.

Activity	Views	Last access
 Class Announcements	182 views by 10 users	Monday, 10 August 2015, 3:21 PM (3 years 24 days)
 Help Forum	69 views by 7 users	Friday, 19 June 2015, 3:45 PM (3 years 76 days)
 Welcome to class! Finally we are meeting as a group!	113 views by 9 users	Monday, 1 June 2015, 12:10 PM (3 years 94 days)

GENERAL INFORMATION

 Syllabus	15 views by 8 users	Sunday, 9 August 2015, 9:13 AM (3 years 26 days)
 Schedule	16 views by 8 users	Tuesday, 5 May 2015, 8:53 AM (3 years 122 days)
 Netiquette for Online Discussions	14 views by 10 users	Friday, 13 March 2015, 1:59 PM (3 years 174 days)
 VLE Training & User Guides	7 views by 7 users	Wednesday, 14 January 2015, 12:38 AM (3 years 233 days)
 Glossary	45 views by 7 users	Tuesday, 31 March 2015, 7:07 PM (3 years 156 days)

1. INTRODUCTION

 Week 1 - Facilitator's Presentation (10 mins)	28 views by 11 users	Wednesday, 14 January 2015, 12:39 AM (3 years 233 days)
 Required Reading: The Learning Aims of Higher Education (30 mins)	38 views by 11 users	Wednesday, 14 January 2015, 1:17 AM (3 years 233 days)
 Video: A Vision of Students Today (5 mins)	14 views by 10 users	Wednesday, 14 January 2015, 2:01 AM (3 years 233 days)
 Required Reading: Drivers for Technology Enhanced Learning (10 mins)	16 views by 11 users	Wednesday, 14 January 2015, 2:06 AM (3 years 233 days)
 Introductions Forum (20 mins)	298 views by 12 users	Tuesday, 28 July 2015, 1:29 PM (3 years 37 days)
 Facilitator Guided Discussion on Learning Aims of Higher Education (60 mins)	265 views by 11 users	Tuesday, 28 July 2015, 1:29 PM (3 years 37 days)

2. UNDERSTANDING LEARNING & LEARNERS

 Week 2 - Facilitator's Presentation (13 mins)	12 views by 8 users	Wednesday, 21 January 2015, 11:27 PM (3 years 225 days)
 Videos: 'Teaching Teaching & Understanding Understanding' (20 mins)	9 views by 8 users	Wednesday, 21 January 2015, 11:41 PM (3 years 225 days)
 Required Reading: Approaches to Learning (10 mins)	11 views by 9 users	Thursday, 22 January 2015, 12:01 AM (3 years 225 days)
 Required Reading: The Higher Education Academy: Deep & Surface Approaches to Learning (15 mins)	12 views by 8 users	Thursday, 22 January 2015, 12:03 AM (3 years 225 days)
 Required Reading: Theories of Learning (35 mins)	20 views by 9 users	Sunday, 22 February 2015, 11:14 AM (3 years 193 days)
 Discussion: Approaches to Learning & Theories of Learning (90 mins)	211 views by 11 users	Tuesday, 28 July 2015, 1:29 PM (3 years 37 days)
 Video: Memorisation or understanding: are we teaching the right thing? (45 mins)	4 views by 4 users	Sunday, 16 November 2014, 6:18 PM (3 years 291 days)

3. PEDAGOGICAL MODELS & FRAMEWORKS FOR TEL - Part A

 Week 3 - Facilitator's Presentation (8 mins)	8 views by 7 users	Tuesday, 13 January 2015, 4:51 PM (3 years 233 days)
 Required Reading: The Higher Education Academy: Constructive Alignment (20 mins)	10 views by 6 users	Friday, 5 December 2014, 11:20 AM (3 years 272 days)
 Required Reading: Applying Constructive Alignment to Outcomes Based Teaching & Learning (30 mins)	15 views by 6 users	Tuesday, 17 March 2015, 2:46 PM (3 years 170 days)
 Required Reading: Constructive Alignment Notes (40 mins)	9 views by 5 users	Tuesday, 17 March 2015, 2:46 PM (3 years 170 days)
 Discussion: Applying the Constructive Alignment to my study-unit (105 mins)	278 views by 9 users	Friday, 7 August 2015, 6:33 PM (3 years 27 days)

4. PEDAGOGICAL MODELS & FRAMEWORKS FOR TEL - Part B

 Week 4 - Facilitator's Presentation (16 mins)	12 views by 9 users	Wednesday, 22 July 2015, 3:41 PM (3 years 43 days)
 Community of Inquiry Framework: Notes (15 mins)	8 views by 5 users	Wednesday, 22 July 2015, 4:05 PM (3 years 43 days)
 Asynchronous & Synchronous E-Learning (15 mins)	8 views by 7 users	Wednesday, 22 July 2015, 4:19 PM (3 years 43 days)
 Online Discussions: Notes (10 mins)	8 views by 5 users	Wednesday, 22 July 2015, 4:30 PM (3 years 43 days)
 Rubrics for Online Discussions: Samples (20 mins)	9 views by 6 users	Wednesday, 22 July 2015, 4:41 PM (3 years 43 days)
 Designing & Assessing Online Discussions (90 mins)	283 views by 8 users	Friday, 7 August 2015, 6:33 PM (3 years 27 days)
 Video: Facilitating Online Discussions - Dr Sarah Haavind	6 views by 3 users	Wednesday, 22 July 2015, 4:47 PM (3 years 43 days)
 Reading: Avoiding Web Discussions Pitfalls	5 views by 5 users	Monday, 2 February 2015, 10:31 PM (3 years 213 days)
 Sample Rubrics for Different Activities	6 views by 5 users	Monday, 2 February 2015, 10:31 PM (3 years 213 days)

5. THE CONVERSATIONAL FRAMEWORK, ONLINE WORKLOAD & OERs

 Week 5 - Facilitator's Presentation (7 mins)	7 views by 7 users	Saturday, 6 June 2015, 3:39 PM (3 years 89 days)
 Video: The Conversational Framework (12 mins)	7 views by 7 users	Sunday, 17 May 2015, 10:40 AM (3 years 110 days)
 Required Reading: The Conversational Framework (30 mins)	5 views by 5 users	Wednesday, 22 April 2015, 4:14 PM (3 years 134 days)
 Video: Strategies for Managing the Online Workload Part 1 (12 mins)	6 views by 4 users	Saturday, 2 May 2015, 3:44 PM (3 years 124 days)
 Video: Strategies for Managing the Online Workload Part 2 (12 mins)	4 views by 4 users	Wednesday, 22 April 2015, 4:29 PM (3 years 134 days)
 Required Reading: Strategies for Managing the Online Workload (20 mins)	8 views by 6 users	Saturday, 2 May 2015, 3:44 PM (3 years 124 days)
 Required Reading: Open Educational Resources (5 mins)	11 views by 5 users	Saturday, 2 May 2015, 4:25 PM (3 years 124 days)
 Online Workload & OER (90 mins)	100 views by 8 users	Sunday, 26 July 2015, 3:49 PM (3 years 39 days)

6. FLIPPED CLASSROOM, LEARNING TECHNOLOGIES, ASSESSMENT & FEEDBACK

 Week 6 - Facilitator's Presentation (12 mins)	5 views by 1 users	Thursday, 30 July 2015, 6:06 AM (3 years 36 days)
 Video: What is a flipped class? (1 min)	12 views by 3 users	Thursday, 30 July 2015, 6:21 AM (3 years 36 days)
 Video: Chemistry Lessons Flipped (1 min)	10 views by 2 users	Thursday, 30 July 2015, 6:22 AM (3 years 36 days)
 Video: PowerPoint & Flipping the Lecture (3.5 mins)	9 views by 3 users	Thursday, 30 July 2015, 6:24 AM (3 years 36 days)
 EDUCAUSE: 7 Things You Should Know About Flipped Classrooms	11 views by 3 users	Thursday, 30 July 2015, 6:28 AM (3 years 36 days)
 Guidelines for Virtual Classroom Software	5 views by 2 users	Tuesday, 28 July 2015, 6:37 AM (3 years 38 days)
 Using Google Docs as a Collaboration Tool	7 views by 2 users	Tuesday, 28 July 2015, 6:38 AM (3 years 38 days)
 Guidelines for Presentations with Voiceovers	6 views by 2 users	Tuesday, 28 July 2015, 6:38 AM (3 years 38 days)
 Presentations with Voiceovers, Screencasts & Podcasts	7 views by 2 users	Saturday, 8 August 2015, 10:27 AM (3 years 27 days)
 Classroom Response Systems	13 views by 2 users	Saturday, 8 August 2015, 10:32 AM (3 years 27 days)
 E-Submissions & E-Marking	8 views by 2 users	Tuesday, 28 July 2015, 6:40 AM (3 years 38 days)
 Digital Natives & Digital Immigrants - Use of Laptops in Class	5 views by 2 users	Tuesday, 28 July 2015, 6:40 AM (3 years 38 days)
 Using the technologies mentioned this week for a study-unit.	140 views by 4 users	Monday, 10 August 2015, 3:20 PM (3 years 24 days)

Participation report showing the number of views and posts by each participant throughout the PD course.

Participant	Introductions Forum		Topic 1 Forum		Topic 2 Forum		Topic 3 Forum		Topic 4 Forum		Topic 5 Forum		Topic 6 Forum	
	Views	Post	Views	Post	Views	Post	Views	Post	Views	Post	Views	Post	Views	Post
Nathan	12	2	4	1	14	2	5	1	7					
Peter	21	2	45	11	20	7	55	3	39	6	26	2	29	1
David	44	11	23	6	24	6	27	1	20	1	1	0	3	0
Giselle	62	11	29	6	22	3	36	4	24	5	10	2	20	1
Steve	14	1	1	0	10	2								
Omar	28	7	35	3	23	1	19	1	31	3	8	2	17	5
Sam	22	5	25	9	21	8	24	7	33	9	14	2	5	2
Edward	41	5	24	3	0	0	4	0	41	9	7	1	27	1
Lillian	14	1	7	1	1									

Topic 1 Forum - Learning Aims of Higher Education

Topic 2 Forum - Approaches to Learning & Theories of Learning

Topic 3 Forum - Applying Constructive Alignment to my study-unit

Topic 4 Forum - Designing & Assessing Online Discussions

Topic 5 Forum - Online Workload & OER

Topic 6 Forum - Using Technologies mentioned this week for a study-unit



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Dashboard / Research Study: Technology Enhanced Learning, Teaching & Assessment
/ 4. PEDAGOGICAL MODELS & FRAMEWORKS FOR TEL - Part B
/ Designing & Assessing Online Discussions (90 mins)



Search forums

Designing & Assessing Online Discussions (90 mins)



This is a facilitator guided discussion. I will be participating in this discussion as a 'master learner' and skilled online facilitator. This does not mean that I will respond to every post. It does mean that I will engage in discussions with participants and, if necessary, provide feedback to those whose posts do not adequately respond to all the discussion questions.

Guidance

- Before participating in this discussion, complete the required readings for the week.
- Good discussions demonstrate analysis and meaningful connections to own practice and include references to the readings, others' posts, or own experience. As you contribute your original responses and replies, work on your academic rigor by including analyses and references.

Learning Outcomes

By the end of this activity, you will:

- write a discussion prompt that stimulate engaging, substantive, and compelling discussions.
- identify a rubric to assess the online discussion.
- receive feedback from your peers on your discussion prompt.

Part A - Develop & Post your Discussion Prompt (due by Saturday evening of this assignment week) [60 mins]

Select one of your undergraduate study-units. You will design an online discussion to help students achieve one or more learning outcomes of the selected study-unit.

Develop a discussion prompt for the online discussion. The discussion prompt (at the moment you are reading a discussion prompt!) should include:

Develop a discussion prompt for the online discussion. The discussion prompt (at the moment you are reading a discussion prompt!) should include:

- the learning outcome/s of the discussion i.e. the purpose of the discussion.
- the pre-requisites of the discussion i.e. any tasks that students should complete before participating in the discussion.
- the questions or activities that will be tackled through the online discussion.
- expectations in terms of number and quality of postings required from each student.
- information about your role and participation in the discussion.
- time-frames for completing the different phases of the online discussion.
- a rubric which will be used to assess the students' contributions.

Post your discussion prompt by Saturday evening.

Part B - Replies to Others (due by Tuesday of this assignment week) [30 mins]

After posting your original response, check out what others have written and engage with at least one participant. Seek clarifications and provide feedback/suggestions to at least one participant.

Discussion	Started by	Replies	Last post
Discussion and Interpretation of Measured Results		0	Sun, 15 Feb 2015, 6:01 PM
Discussion post		13	Fri, 6 Feb 2015, 10:15 AM
Week 4 Commentary		0	Fri, 6 Feb 2015, 9:30 AM
Reading Biblical Texts		1	Thu, 5 Feb 2015, 7:46 PM
Discussion Question - Value and Growth Investing		7	Wed, 4 Feb 2015, 4:17 PM
key texts in contemporary sociology		5	Mon, 2 Feb 2015, 4:20 PM
Designing & Assessing Online Discussions		6	Sun, 1 Feb 2015, 9:43 AM