CHAPTER SEVEN [5204 words]

Training of FE teachers with occupational/vocational experiences: an approach using collaboration and evidence-based research

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Introduction

The intention of this chapter[1] is to provide an approach to the training of teachers (especially those who have vocational or occupational experiences) in the further education (FE) sector. This sector has the following teaching settings: FE colleges, voluntary and community-sector organizations, commercial organizations and independent training providers, adult and community learning providers, industry, specialist colleges, armed and uniformed services, prisons and offending learning organizations, and other public-sector organizations (Education and Training Foundation, 2014). In 2013-2014, nearly 68 per cent of the provisions in this diverse sector were occupation-related (Frontier Economics Limited, 2014, Table 15).

Furthermore, two other aspects have highlighted the relevance to rethink teacher education in the sector. The first relates to the recent emphasis on vocational training from the Wolf Report (Department for Education, 2011), the Richard Review of Apprenticeships (Department for Business, Innovation and Skills [BIS], 2012a), the Lingfield Report (BIS, 2012b), to the Commission on Adult Vocational Teaching and Learning (Learning and Skills Improvement Service [LSIS], 2013a), and culminating in the establishment of the Centre for Vocational Education Research in March, 2015. The second aspect refers to the international spotlight on the complexities of teaching (Tatto, 2013).

These two aspects on teaching and vocationalism must be viewed in the contexts of FE in England. Despite the importance policy makers place on teaching (DfE, 2010) in England, FE teachers are not mandated to acquire a teaching qualification (BIS, 2012b), though teachers are required to undertake 30 hours of continuous professional development per year (BIS, 2012b). The occupational experiences of FE teachers distinguish them from teachers in the compulsory education sectors. Therefore the occupational/disciplinary experiences and knowledge of these teachers along with their pedagogic activities should be included in their teacher education. Bearing in mind the above contexts, this chapter argues for a collaborative (i.e. reflective peer review) and evidence based (i.e. inclusion of disciplinary and pedagogic experiences through research) approach to teacher education where at present, such practices are inconsistent and under-developed.

The next section relates to relevant theoretical frameworks and the third sector highlights related empirical studies. The fourth section discusses the findings in relation to the foci of the chapter and the final section offers insights and implications.

'Knowledge' theoretical frameworks

This section is delineated using two groups of literature sources: the 'curriculum-related' and the 'typologists'. In the first 'curriculum-related' group, 'powerful knowledge' is offered by Young (2013) as a way of focusing on the significance of knowledge in a curriculum such as teacher education in the FE sector where this chapter argues for the inclusion of occupational/disciplinary knowledge alongside pedagogic knowledge. Young uses Bernstein's (1990) binary classification of vertical (theoretical) and horizontal (tacit and everyday) knowledge. Bernstein uses recontextualisation as a process to explain how vertical knowledge is transmitted via "selection, sequence, pace, and relations with other subjects" (Bernstein, 1990: 185) in a pedagogic setting. Barnett (2006) uses recontextualisation processes – reclassificatory and pedagogic – to delineate vocational teaching and learning and Evans et al. (2010) draw from the previous sources to offer four recontextualisation processes and to explain how knowledge is acquired and applied. These processes are: 'Content' (where theoretical knowledge is selected for learners' learning); 'Pedagogic' (where theoretical and everyday knowledge is included in the curriculum); 'Workplace' (where learners learn whilst working); and 'Learner' (where they use strategies to integrate to use and apply theoretical and work-related knowledge).

The two generic forms of knowledge provide a way of thinking about how the complex varieties of pedagogic practices relating to FE teachers may be included in teacher training and the different types of recontextualisation offer ways of understanding how FE teachers with occupational experiences negotiate teaching and learning processes. The next part of this section provides a more nuanced understanding of teacher knowledge.

In the second group, the 'typologists' offer a wider variation of 'teaching' knowledge. Shulman (1987: 8-9) provides a classification of seven types of pedagogic knowledge ranging from content knowledge (knowledge and skills for learning), curriculum knowledge ('tools of the trade' e.g. knowledge of teaching resources), general pedagogical knowledge (strategies surrounding classroom management), pedagogical content knowledge (how content and teaching are organized, represented and used for specific learners), knowledge of learners (needs and characteristics), knowledge of educational contexts, and knowledge of educational values. Even though this classification centres on compulsory learners in the US, it does offer a way of engaging with teaching knowledge in FE in other countries, especially where teaching training is usually focused on the generic aspects of teaching knowledge such as general pedagogical knowledge and curriculum knowledge, due partly to the diversity of the curricula and the lack of expertise by teacher educators to cover all the disciplines. Verloop et al.'s (2001) typology does cross over with Shulman's in areas such as subject matter, students and their learning, curriculum and instructional techniques and areas relating to compulsory education. However, Verloop et al.'s approach is more focused on teachers' interactive cognitions and with a greater emphasis on learners. This typology is especially relevant due to the diversity of FE pedagogic activities and learners, though both typologies have not given sufficient emphasis to the tacit elements of teaching. Loughran et al. (2003, 856) attempt to codify teachers' professional knowledge using their 12 'Principles of teaching for quality learning' where they "identify and articulate important and hitherto hidden aspects of their practice". Some of these practices such as sharing intellectual control with learners and encouraging learners to learn from peers are relevant to FE as the learners cover a wide range in terms of ages, experiences and needs. Nevertheless, insufficient emphasis has been placed on teachers' biographical experiences especially occupational practices, which are distinctive to FE teachers. Clandinin (1985) offers a space for the inclusion of FE teachers' occupational

knowhow with her concept of 'personal practical knowledge'. In this conception, teachers' personal and professional (for the purposes of this chapter, teaching and occupational) experiences including emotional and moralistic elements are defined. The expansion of Clandinin's 'personal practical knowledge' for the purposes of this chapter at least opens up spaces for discussion of teachers' occupational experiences in teacher education.

Methods

The empirical findings on which this chapter is based result from two projects which were funded by the Work-Based Learning for Education Professionals Centre, UCL Institute of Education, University College London. The Higher Education Academy funded the centre. The projects were approved by the institution and they adhered to the British Educational Research Association ethical guidelines. The first project studied the types and application of teacher knowledge in the FE sector (Loo, 2012) while the second, investigated a structured collaborative approach to supporting FE teachers' pedagogic activities via digitally recorded teaching sessions (Loo, 2013).

The first project employed a questionnaire survey and semi-structured one-to-one interviews (of varying lengths of 45-90 minutes) and the second project used digital recordings of volunteer teachers from FE in their teaching activities involving similar learners over three different sessions. This approach was employed in order to prevent abnormal learner behaviour resulting from the use of digital recording equipment. A questionnaire survey was also administered in the second project. Once the recordings were captured, each teacher chose a recording which best illustrated the teaching contexts and submitted this to a peer review process in focus groups. These groups discussed the teaching activities using a multimodality framework (Kress, 2010) and reflective peer review (Pollard et al., 2008) approach. All the volunteers were former trainee teachers on the Postgraduate Certificate of Education (Post-compulsory/FE) (PGCE) course at the same institution from different cohorts. The principal investigator of the projects was a tutor of the PGCE programme. In the first project, there were eight volunteers and six volunteers in the second one with five participants taking part in both projects. The combined total number was nine.

<Insert Table 3 here>

Of the nine participants, five were females and four males with two in the 30s age group, two in the 40s and five in the 50s. Of the teaching settings, four were in FE colleges, four in adult and community and one in higher education. They had differing lengths of teaching experiences ranging from three to 28 years. Of the nine volunteers, five were in full-time teaching and four were working part-time. The differing disciplines involving them included: art, biology, dance, dental hygiene, health and social care, information technology, journalism, life skills, mathematics, palmistry, physics, psychology and radio production, though the participants were not necessarily limited to one discipline. More significantly, participants' life and occupational experiences included being: civil servant, health and social worker, architect, printmaker, dental hygienist, community worker, graphic designer, homeopath, palmist and reflexologist along with having lived abroad in places such as Japan, Malta, South Africa, Australia, Switzerland and the US.

The findings of the two projects were analysed using qualitative analytical approaches that included noting patterns, themes and trends, clustering of items into categories, using narratives for rich descriptions and interpreting the data (Cohen et al., 2000). Salient details of the participants from the questionnaire and interviews are featured in Table 3. These findings are used in this chapter to provide a new direction to FE teacher training where it is inconsistent and under-developed as regards integrating disciplinary and pedagogic knowledge.

Discussion

The discussion is approached in two parts in order to consider the two issues posed in this chapter. The first part deals with the first issue, which is FE teaching knowledge from evidence based research. The second part relates to the other issue, which is offering a collaborative and reflective peer review approach to FE teacher training.

I will use the two most recent teaching standards to critique the current understanding of teacher knowledge in the training of FE teachers and from the findings of the first project, the import of teaching knowledge in the teacher education curriculum. The previous set of teaching standards by the former Further Education National Training Organisation (FENTO) (1999) included knowledge as one of the three themes, which were: domain-wide knowledge (as applied to all areas of teaching e.g. vocational and academic subject areas), generic knowledge (which related to each standard), and essential knowledge (which related to specific aspects of each standard). This document (FENTO, 1999) provided a prescriptive competence-based listing of such items from pages 5 to 41. It included the notion of three forms of teaching knowledge, which gave an import to teaching knowledge in a curriculum and thus might be used in teacher training. However, the sources and descriptions of such knowledge from research-based literature were not included. Significantly for this sector, teachers' occupational experiences were not viewed as relevant to the standards.

Coming to the teaching and training qualifications published by the former LSIS (2013b), it offers a slimmer document of 38 pages with an emphasis on the learner over three levels with varying programme routes including adult literacy and adult numeracy. This emphasis includes an expectation that a trainee teacher should: link theory such as subject knowledge (including vocational-related areas) and pedagogic knowledge with practice and, learn from other practitioners. The document also recognizes trainee teacher's experiences and skills. As with the previous standard, it has references to teaching knowledge, but, also in common with the previous one, there are no additional explanations about the sources, descriptions and applications of diverse teaching knowledge to teacher training. Despite the relevance of occupational experiences, little emphasis was given to it this either as part of teaching knowledge or its role in a teacher's pedagogic activity. From the perspectives of the two recent standards, there appears to be trend that has moved away from a prescriptive competence-related approach to become a pathway-based series of training programmes over three levels. Positively, both standards mention the need for research, professional development and collaboration.

To an extent, the above standards encompass knowledge types relating to Shulman's (1987) typology such as content knowledge, general pedagogical knowledge and Verloop et al.'s

(2001) knowledge of learners with its focus on their learning. The standards also offer a nod to Loughran et al.'s 'Principles of teaching for quality learning' with the encouragement to learn from peers and an expectation that trainee teacher's biographical experiences are encouraged (Clandinin, 1985). Even teaching knowledge was included as part of the standards (Young, 2013).

Though there are implicit references to the 'typologists' group of literature sources, however, these are related mostly to the compulsory sectors, which are not necessarily specific to the FE sector. Drawing from the findings of the first project (Loo, 2012), and the above literature review, there is a need to explore and expand the typologies of teaching knowledge that are appropriate for FE. Some of the themes identified from this project have relevance to this chapter. One relates to the inclusion of occupational experiences of the trainee teachers thus reflecting the distinctiveness of the FE sector and also giving legitimacy to this significant form of professional experience where it could be incorporated into the pedagogic activities of these trainee teachers in the teaching practices on vocational programmes. The other relevant themes from the project (Loo, 2012) are the opportunities for these teachers and other researchers to carry out research on areas such as teaching knowledge in the sector, disciplinary knowledge in relation to vocational areas, and the sources and applications of the diverse teaching knowledge to pedagogic activities on vocational courses. In short, the project found there should be a more evidence-based approach to teaching knowledge that is relevant to the FE sector.

The next part of this chapter uses findings from the second project (Loo, 2013) to highlight the lessons that may be applied to improve the quality of trainee teachers' pedagogic activities via a collaborative and reflective peer review approach. These findings (as ascertained from the application of thematic and other forms of analysis indicated in the previous section), for the purposes of this chapter, revolve around three themes and they include: the specificities of the socio-cultural-related multi-modes of the session in question ('Taking History'); 'perceptions of reality', and 'learning from peer review interaction beyond the digitally recorded session' (Loo, 2013). Collaboration in this context refers to the project participants discussing their digitally recorded teaching sessions in a peer review environment using a multimodality framework (Kress, 2010). Reflective peer review relates to the constructive and supportive manner in which the discussions take place using structured reflective approach (Pollard et al., 2008).

The remainder of this discussion uses the 'Taking History' digitally recorded session as a device to delineate the aims of this chapter. It was a simulated session of dental practice in the teaching institution, which consisted of partitioned-off cubicles for dental hygiene students to practice their clinical skills. Each cubicle was furnished with the relevant equipment such as dental patient's chairs, lighting and mouth wash facility. The aim of this session was for the students to practice taking the oral history of their 'patients' (who were their colleagues). The use of video recordings and interview demonstrated evidence of the ways in which pedagogic knowledge of learning activities can be developed through a reflective peer review as participant D in this project discovered:

> "I was not aware of it until I watched it myself and particularly this time. These students were not paying attention to me; they were just thinking what is going on in this other room where their colleagues were being examined. Gosh, this was something I have not realised if I did not watch that tape. This is a plus

point of having the tape to play back." (Participant D)

An advantage of this thematic approach ('Perceptions of reality') of replaying of the digitally recorded session was to allow Participant D additional time and space to reflect on the teaching group dynamics and the multi-modes of pedagogic activities. As indicated by Participant D's quotation above, she was not totally aware of the dynamics and pedagogic activities whilst she was 'in-situ'. An example of the group dynamics was the body language and the seeming lack of attentiveness of the students to Participant D's delivery before and after the entry of the student after her viva. During this exercise, the students in the session were empathetic towards one of their colleagues, who had to undergo a viva examination, and its result would impact on her academic outcome. This replay also has the additional advantage for Participant D to discuss with her peers the 'specificities of the session' such as group dynamics (e.g. gaze, posture, facial expressions and voice of the students) and related pedagogic contexts. The replay also provides the trainee teachers/peers opportunities to discuss additional insights relating to her pedagogic activities. Therefore, the impact of a peer/tutor review of recorded teaching sessions may act as a useful tool for reflection and also afford greater understanding by means of critical observation and constructive discussion by the group members (Loo, 2013).

Turning to another theme, 'Learning from peer observation beyond the digitally recorded session', it is useful to examine this interview comment from Participant I:

> "Use of [the digital] camcorder has the advantage of looking at how other teachers teach. The PGCE course did not allow that. At least in this [peer review] approach, one can look at how others do it and then discuss it. It offers a way of bench-marking, gives us more tools and also allows you to be yourself." (Participant I)

The adoption of this approach offers opportunities to observe peers' pedagogic activities (LSIS, 2013b; Verloop et al., 2003), which may inform and improve their teaching. This comparative approach needs to be tempered with the specific variations involving their peers in a reflective peer review environment where such variations may include learners, programmes, teaching settings, regulations and the requirements of a related professional body (as in the case of the dental hygiene programme). Additionally, individual teacher's biographical experiences of occupation, life and pedagogy need to be factored in as indicated in such variations in Table 1 and as this participant suggested:

> "There is so much about the subtlety of teaching which you can't write about in great detail but [it is] much easier to look at it, like a [digitally recorded] session, and to discuss it." (Participant G)

Participant G worked as a part-time art teacher at an FE college with previous work experiences as a community worker to learners of different ages. In the above quotation, she compared the similarities of an art discipline with teaching where a large degree of knowledge and activities could not be easily explicated. These tacit aspects of teaching chimed with Loughran et al.'s (2003) study though not the occupation-related aspects. In this context, the previous point offers a new insight into Loughran's study of teaching knowledge in the compulsory sector. Participant G also indicated that it would be easier to demonstrate, use analogies and metaphors and to provide visual aids to assist in the understanding of this

recorded teaching session. The next quotation on the tacit dimension of occupational teaching offers further insights into the training of teachers with occupational experiences:

> "It is difficult to teach manual dexterity as you need to be like a detective by being able to look into somebody's mouth, describe what you see and be able to say why it is different and work [it] out provided they (the learners) have the theoretical knowledge and that they are able to apply it to the situation. There are transitional stages where the students can apply their theoretical knowledge, each of them to detect and identify deposits on the teeth and how to remove it and having the confidence to remove them. Students are afraid to harm the patient, which [is as] it should be but experienced tutors know the amount of pressure to use and perhaps the angle of applying the instrument. That [in] itself is quite hard to impart." (Teacher D)

Referring to Participant G's use of analogies and metaphors in vocational teaching, Participant D used the analogy of washing up a mug in relation to brushing the inside and outside of one's teeth for dental hygiene purposes. Furthering this investigation of vocational teaching, the above quotation refers to the tacit aspects of teaching dental hygiene. One may ascertain three forms of knowledge are used in this kind of situation: disciplinary knowledge; occupational knowledge; and the everyday knowledge and experiences of the learners. The disciplinary knowledge (Shulman, 1987; Verloop et al., 2001; Young, 2013), in terms of dental hygiene, consists of relevant technical and scientific forms of knowledge. It is technical in the sense that knowledge is required by the learner in order to apply it to this session on 'Taking History'. Scientific knowledge is also required in the sciences such as anatomy, psychology and physiology, which had been covered in other teaching sessions. The occupational knowledge and experiences of the session, as inferred by Clandinin (1985) and explicated by Loo (2012), consisted of two aspects. The first was the support and guidance of the teacher using her occupational experience and knowledge/knowhow, and the second aspect related to the learner's experience in a role-play as patient and/or dental hygienist in a simulated environment and the use of the supporting clinical equipment, instruments, and formalized dental record forms for completion in the taking of a patient's oral history. These teacher and student related occupational/professional experiences serve as a possible learning approach to be a professional dental hygienist. Relating to the previous part of this discussion, these forms of knowledge require further research in order to have a better understanding of this neglected area. The final type of knowledge relates to the everyday experiences (Bernstein, 1990; Loughran et al., 2003) involving the learner's personal experiences of visiting a dental clinic and her/his awareness of the roles of being a dental hygienist.

In terms of how the three types of knowledge may be applied to the occupational teaching and learning in this simulated "Taking History' session, the vertical knowledge or disciplinary knowledge as subscribed by Bernstein (1990), Evans et al. (2010) and Young (2013) offers an entry point into the processes of recontextualisation. This can be the content of the dental hygiene curriculum where the relevant part of it was selected for this recorded session and where the related disciplinary source e.g. anatomy was recontextualised for the purpose of dental hygiene. This process was termed by Evans et al. (2010) as 'Content recontextualisation' and the choice of applying teaching strategies such as demonstration by the teacher and simulated practice by the learner to this session would be called 'Pedagogic recontextualisation'. Bernstein and Young were of the view that the vertical/theoretical and

the everyday/tacit aspects of knowledge would not be modified after the recontexualisation processes. However, others (Winch, 2010; Loo, 2012 & 2014; Muller, 2014) suggest that the two forms of knowledge may be changed and integrated to an extent resulting from such recontextualisation processes. Loo (2014) referred to it as a form of 'ongoing recontextualisation' as it related to the application of disciplinary knowledge (e.g. anatomy) in a different disciplinary subject (i.e. dental hygiene) for the teacher and the learners in this specific simulated session. Referring to the earlier part of this discussion, further evidence-based research is needed surrounding the application of the forms of knowledge that occur in vocational settings. The mutability of the theoretical/vertical and the tacit/everyday forms of knowledge is further illustrated by the two quotations below:

> "Teaching motivates me, gives me a sense of purpose and making a difference as well as informs my occupational practices e.g. creation of an ideal home as a theme with students, parents and teachers as a way of managing art, architecture and teaching". (Teacher C)

> "The transition from practice (as a dental hygienist) to teaching is easier if I practice regularly to keep my confidence level and speed up." (Teacher D)

As detailed in Table 1, Participant C was a practising print maker and architect alongside his part-time teaching in art at adult and community settings and the background of Participant D is indicated above. The mutability of these teachers' disciplinary/vertical knowledge (of architecture and print making, and anatomy and dental hygiene respectively) alongside their pedagogic knowledge, and their everyday/horizontal knowledge of life and related tacit experiences relating to life, occupational practice and teaching are intricately linked as part of ongoing recontextualisation processes. These processes may also suggest that there are symbiotic relationships (Loo, 2012) between occupational, teaching and life experiences as with Teacher C, and occupational and teaching experiences with Teacher D. The final narrative by Teacher I below offers another form of symbiotic relationship between pedagogic, occupational and biographical experiences:

> "I've been a student and lecturer for the past ten years so my experiences have been on both sides of the fence and in homeopathy as a student and seeing how different teachers cope ... invariably, my experiences as a teacher and as a student always apply in my teaching, as I am a perpetual student. My approach to teaching is not to use a big stick and not dumb down to primary and secondary levels but work on delivery and start from learners' world. I believe that my extensive life and work experience gained from living and working in Australia, Switzerland and the US as well as here in the UK has given me a tolerant and curiosity-focused approach to the education process." (Teacher I)

Teacher I, with his details recounted earlier, showed a more conventional symbiotic relationship as investigated by Clandinin (1985) where his three forms of knowhow included emotional and moralistic connections with his learners, which informed his visionary approach to teaching.

The use of the data, quantitative and qualitative, and the thematic analysis from the two projects described above provide 'live' exemplars for this chapter to argue for an evidence-based and collaborative approach to the training of FE teachers with occupational experiences.

Insights and practical curriculum implications

This chapter offers a curriculum solution to the current under-developed and inconsistent approach to combining knowledge and experiences from the disciplines/occupations, pedagogy and life in order to train teachers who have occupational experiences. This approach draws on the empirical research findings of two projects. The chapter builds on the recognition of the importance of knowledge in the teacher education curriculum to call for more evidence-based research to understanding the complexity of occupational learning and teaching from the perspectives of its definition, sources and application. The chapter also offers a collaborative approach to facilitating teaching via reflective peer reviewing sessions of digitally recorded teaching sessions. In addition, it highlights the teachers' learning and teaching activities via the use of recontextualisation (and in particular ongoing recontextualisation) as means to understanding these complexities.

There are implications that arise for teachers, teaching institutions and policy makers. For teachers, this approach offers trainee teachers '360 degree' training opportunities of integrating their disciplinary and pedagogic knowledge with their reflective peer reviews. The call for further evidence-based findings of teaching knowledge highlights the importance of and gives credibility to occupational experiences as part of the complex nature of FE teaching knowledge. For teaching institutions, supportive structures would facilitate the teaching workforce to become informed professionals where research activities may enable them to become 'producers' and not mere consumers of pedagogic knowledge. The teacher education curriculum (of the current 120 and 15 credits system) may include an embedded focus on observations and recordings of real-life teaching sessions, supported by classroom sessions on theories, planning etc. Furthermore, optional modules totaling 45 credits may offer research knowledge and collaborative activities, opportunities to update occupational expertise and exploration of pedagogic strategies towards the improvement of occupational/vocational teaching and learning. For policy makers, the emphasis on knowledge content in the teacher training curricula and the support given to improve research opportunities would professionalize the teaching workforce and hopefully impact teaching quality, and ultimately inspection outcomes.

[1] This chapter is based on the article, Loo, S. Y. (2014). Placing 'knowledge' in teacher education in the English Further Education teaching sector: an alternative approach based on collaboration and evidence based research. British Journal of Educational Studies, 62(3), 337-354.

References

Barnett, M. (2006) Vocational knowledge and vocational pedagogy. In M. Young and J. Gamble (Eds.), *Knowledge, Curriculum and Qualifications for South African Further Education,* (pp. 143-158). Cape Town: Human Sciences Research Council Press.

Bernstein, B. (1990) *The Structuring of Pedagogic Discourse: Class, codes and control.* London and New York: Routledge.

Clandinin, J. (1985) Personal Practical Knowledge: A Study of Teachers' Classroom Images. *Curriculum Inquiry*, 15(4), 361-385.

Cohen, L., Manion, L. and Morrison, K. (2000) *Research Methods in Education.* London: RoutledgeFalmer.

Department for Business, Innovation, Skills and Education (BIS). (2012a) *The Richard Review of Apprenticeships.* London: BIS.

Department for Business, Innovation and Skills (BIS). (2012b) *Professionalism in Further Education: Final Report of the Independent Review Panel.* London: BIS.

Department for Education (DfE). (2010) *The Importance of Teaching. Cm 7980.* London: The Stationery Office.

Department for Education (DfE). (2011) *Review of Vocational Education – The Wolf Report.* London: DFE.

Education and Training Foundation (ETF). (2014) *Professional Standards for Teachers and Trainers in England: Initial Guidance for Users.* London: ETF.

Evans, K., Guile, D., Harris, J. and Allan, H. (2010) Putting knowledge to work: A new approach. *Nurse Education Today*, 30(3), 245–251.

Frontier Economics Limited. (2014) *Further Education workforce data for England: Analysis of the 2012-2013 staff individualized record data.* London: Frontier Economics Limited.

Further Education National Training Organisation (FENTO). (1999) *Standards for teaching and supporting learning in further education in England and Wales*. London: FENTO.

Kress, G. (2010) *Multimodality: A Social Semiotic Approach to Contemporary Communication.* London: Routledge.

Learning and Skills Improvement Service (LSIS). (2013a) *Commission on Adult Vocational Teaching and Learning.* Coventry: LSIS.

Learning and Skills Improvement Service (LSIS). (2013b) *Teaching and Training Qualifications for the Further Education and Skills Sector in England (2013): Guidance for employers and practitioners.* Coventry: LSIS.

Loo, S. Y. (2012) The application of pedagogic knowledge to teaching: A conceptual framework. *International Journal of Lifelong Education*, 31(6), 705-723.

Loo, S. Y. (2013) Professional development of teachers: using multimodality and reflective peer review approaches to analyse digitally recorded teaching practices. *Teacher Development: An international journal of teachers' professional development*, 17(4), 499-517.

Loo, S. Y. (2014) Placing 'knowledge' in teacher education in the English further education sector: An alternative approach based on collaboration and evidence-based research. *British*

Journal of Educational Studies, 62(3), 337-354.

Loughran, J., Mitchell, I., and Mitchell, J. (2003) Attempting to document teachers' professional knowledge. *Qualitative Studies in Education,* 16(6), 853-873.

Muller, J. (2014) Every picture tells a story: Epistemological access and knowledge. *Education as Change,* 18(2), 255-269.

Pollard, A., Anderson, J., Maddock, M., Swaffield, S., Warin, J. and Warwick, P. (2008) *Reflective Teaching: Evidence-Informed Professional Practice.* London: Continuum.

Shulman, L. S. (1987) Knowledge and Teaching: Foundations of the New Reform. *Harvard Educational Review, 57(1),* 1-22.

Tatto, M. T. (2013) Changing Trends in Teacher Education Policy and Practice: International perspectives and future challenges for educational research. *Research Intelligence,* 121, 16-17.

Verloop, N., Van Driel. J. and Meijer. P. (2001) Teacher knowledge and the knowledge base of teaching. *International Journal of Educational Research, 35(5),* 441-461.

Winch, C. (2010) *Dimensions of Expertise: A Conceptual Exploration of Vocational Education.* London: Continuum.

Young, M. (2013) Overcoming the crisis in curriculum theory: a knowledge-based approach. *Journal of Curriculum Studies,* 45(2), 101-118.