

Chapter 4: A conceptual framework of the occupational pedagogy of teachers (3969 words)

Introduction

This chapter follows the previous two literature review chapters on occupational knowledge and its applications from the perspectives of teachers with the relevant occupational experiences. Using the relevant concepts reviewed in the previous two chapters, this chapter aims to provide a conceptual framework of an occupational pedagogy of teachers.

This chapter has three sections. In this introduction section, it includes a recap of the relevant theories around the topic of investigation. The rationale for this is for the reader who may not want a detailed investigation of the conceptualisations of occupational pedagogy in the previous two review chapters but want to understand the conceptual derivations of the conceptual framework. The next section focuses on the description of the conceptual framework with an accompanying figure (Figure 1). The third section rounds up this chapter with a summary.

In Chapter 2 a dual professionalism concept (Handal, 1999; Robson et al., 2004; Peel, 2005) was used to review the literature sources of knowledge concerning the occupational pedagogy of teachers. From a pedagogic delineation of knowledge, teaching knowledge may include knowledge of the relevant disciplines (Becher, 1994; Bernstein, 1996; Smeby, 1996) such as psychology and sociology for the education field. This type of knowledge may be explicit or codified in nature (Shulman, 1987; Nonaka and Takeuchi, 1995; Bernstein, 1996; Polanyi, 1996; Verloop et al., 2001; Loughran et al., 2003; Collins, 2010). Included in the relevant disciplines may be theories of learning, which teachers require to understand how learning may take place and that the related pedagogic strategies/approaches may result from the choice of the learning theory (Becher, 1994; Bernstein, 1996; Smeby, 1996). This theoretical knowledge may be hierarchical in nature (e.g. physics) or it may have its specialised language (e.g. social sciences) or have its mode of transmission (e.g. crafts). The latter form known as horizontal knowledge structures have concepts and procedures, which are formally articulated (e.g. economics) or that the concepts and procedures may be informally articulated (e.g. social anthropology) (Bernstein, 1996). In these forms of knowledge, they may occur in explicit or tacit formats. Teaching knowledge may also include other forms of explicit knowledge. These are general pedagogical knowledge (consisting of principles and teaching strategies for classroom management and organization), pedagogical content knowledge (which is a combination of content and pedagogy), knowledge of the learners, knowledge of the educational contexts (e.g. of the team members and teaching institutions) and knowledge of educational values (Shulman, 1987). Other forms of teaching knowledge may be tacit in nature, which require a language of articulation (Loughran et al., 2003) regarding the information, concepts and perceptions that inform teachers' practices. These pedagogic activities and the various forms of knowledge may exist individually or in collaborative formats (Loughran et al., 2003). Besides teaching knowledge being explicit and tacit in nature,

there is also the cognitive variety where teachers intellectually interact with their professional learning and development and with stakeholders such as their learners and colleagues (Verloop et al., 2001; Loughran et al., 2003). Teaching knowledge may also include a teacher's wider life experiences (Clandinin, 1985) and occupational practices (Loo, 2012). These forms of professional know-how are dynamic and process-driven where a teacher may acquire, develop and apply her/his knowledge base over time in varying pedagogic contexts (Banks et al., 1999). The relationships between the teacher and her/his knowledge base are changed as a result of the interactions with the teacher and the external contexts such as colleagues, learners and the changing educational policies (Loo, 2012). Banks et al. (1999, p. 95) describe these interactions as a "complex amalgam of past knowledge, experiences of learning, a personal view of what constitutes 'good teaching and belief'" over a period. It ought to be emphasised that a teacher's belief system may be closely associated with her/his approach to pedagogic practices.

Knowledge concerning occupational practices also requires a base of disciplinary or theoretical know-how that may be explicit in nature. However, so that the theoretical knowledge is used for occupational practices, it requires a process of application to specific work contexts and the environment it operates in (Bernstein, 1996; Loo, 2012). This occupational knowledge base also includes knowledge of procedures, skills (e.g. interpersonal and intrapersonal ones which are usually tacit in nature), techniques, transversal abilities, project management abilities, personal capabilities and occupational capacity/awareness (Eraut, 2004; Winch, 2014). In short, an occupational knowledge base consists of a wider spectrum than a pedagogic knowledge base. It includes a worker's prior and past know-how (including theoretical and procedural knowledge and experiences), understanding (of work and specific project contexts) skills (technical and non-technical), her/his dispositions and the perceptions of the work environment she/he operates in. The occupational know-how involves codified and tacit types.

The other two forms of knowledge – pedagogic and occupational – may be applied through the processes of recontextualization (Bernstein, 1996; van Oers, 1998; Barnett, 2006; Evans et al., 2010; Loo, 2012; 2014). They can be changed through selecting, relocating and refocusing aspects of the chosen knowledge to be used in another setting. For example, singular knowledge (e.g. psychology and biology) is used in another setting. From the teaching perspective, a learning theory such as cognitive constructivism advocated by Bruner from the discipline of psychology is used in an educational setting. This setting includes contexts relating to the academic level of the programme, the types of learners and the specific part of the curriculum in which this knowledge is applied. From the occupational perspective, biology as knowledge from the natural science may be applied in the dental hygiene occupational setting. Teachers on such as programme will use related aspects of the disciplinary knowledge (from the singulars) to deliver a session on the relevance of the workings of the kidneys to dental health. From the perspectives of the recontextualization process, the nature of the disciplinary knowledge is changed and similarly as perceived by the users (e.g. teachers and learners) in that particular occupational area (Loo, 2012; 2014)(contrary to Bernstein (1996)). The area may include regions or generic modes such as education and dental hygiene). From a teaching perspective, the know-how can be embedded in the teaching without the learners explicitly knowing the specific part of the specifications the content is drawn from (i.e. invisible pedagogy) or the content is made

known to the learners by the teachers (i.e. visible pedagogy) (Bernstein, 1996).

The recontextualization process is posited in dynamic environments, involving people in socio-cultural dimensions and is context related and can be creative (van Oers, 1998). It occurs in pedagogic and occupational activities that are related to work-related programmes from technical and vocational education and training (TVET), university and professional levels (Loo, 2016). This process of selecting, relocating and refocusing knowledge occurs in both teaching and work-related activities. The varieties of occupational know-how consist of explicit (e.g. disciplinary knowledge and organisational procedures) and tacit (e.g. interpretation of a work activity) forms. They also cover experiences (e.g. past work-related ones), skills (e.g. detecting and removing tooth deposits in dental hygiene), abilities (e.g. problem-solving) and dispositions (e.g. patience) (Eraut, 2004; Evans et al., 2012; Winch, 2014). The explicit/codified and tacit types of know-how may change from one type to another through collaborative working (Nonaka and Takeuchi, 1995). There are also different forms of recontextualization processes. These include content recontextualization (relating to the specifications of a programme), pedagogic recontextualization (relating to teaching), learner recontextualization (relating to the strategies that are employed by the learner to acquire and understand the required knowledge), and workplace recontextualization (relating to work settings) (Evans, 2016; Evans et al., 2010). The acquisition and application of occupational knowledge do not occur in a linear fashion and that there are different pathways (Loo, 2012; 2014). Thus, a teacher of dental hygiene may teach on the programme at the same time as practising in that occupational area. She/he may not necessarily have a teaching qualification at the start of the teaching career, but this may be acquired at a later date. The nature of her/his knowledge/know-how is changed from the person's perspective through specific and contextual applications of that know-how especially in relation to the occupational relevance.

In addition to the recontextualization process, there are related concepts that offer additional insights into how a teacher with pedagogic and occupational experiences can apply her/his know-how. These concepts include knowledgeable practice (Evans, 2016), which is developed through formal and informal learning, in the workplace and outside. They also cover practice architecture (Kemmis and Green, 2013), which is carried out in organisations, institutions and settings where a teacher can use her/his 'sayings', 'doings' and 'relatings', and Systems 1 and 2 (Kahneman, 2012) where the former is intuitively based on past experiences and the latter, relies on rational and cognitive interactions.

The above delineations of knowledge and its applications of the occupational pedagogy of teachers will form the basis for a conceptual framework in the next section.

Description of the conceptual framework

This conceptual framework starts with two dimensions as indicated by the dual professional notion. This structuring approach is used purely as a discussion device as the commonalities and entanglements of the two dimensions of pedagogic and occupational practices may not be easily dissociated in reality. Accordingly, the next two sections will be devoted to the teaching practice and occupational practice respectively. As this framework relates to the pedagogic activities of teachers who have

current and/or previous work-related or occupational experiences, so they come with this industrial experience as well as the teaching experiences. Figure 1 begins on the left-hand side with these two practices.

<Insert Figure 1 here>

Teaching practice

From the standpoint of the teaching practices, the teacher will need to acquire knowledge of her/his teaching activities (as an epistemological basis). This knowledge refers to the concepts (such as learning theories) that are required in understanding the contexts that may be found in the teacher's pedagogic setting.

'Context' (Chaiklin and Lave, 1996) can involve sociological forces around temporal dimensions for instance work conditions, type of teaching institution, academic level of the teaching programme, types of learners and colleagues and characteristics of the occupational area. There is also a perceived sense of movement between these contexts with the deliverer's teaching (Cole, 1996). The above notions of context may also be applied to the definition of knowledge (both teaching and occupation-related) where relevant know-how is applied to specific work (i.e. teaching and occupational) contexts or where knowledge is recontextualized to fit the specificity of the work activity. So this framework is dynamic and is process-driven. Similarly, this framework is fluid and dynamic, and even though a framework is described as a series of processes from a starting basis to an end, however, it does not mean that a teacher's journey will necessarily take that particular path. It is dependent on the specificities of the teacher. For example, a teacher on a health and social care programme at a TVET level and teaching at a further education (FE) college may have gained her/his occupational experiences in the past and has decided to go into teaching. She/he may teach on a related occupational programme initially without a teaching qualification. Indeed until 2012, an FE teacher in England was required to acquire a recognised teaching qualification, but since then, a teaching qualification is no longer mandatory (Department for Business, Innovation and Skills, 2012). For teachers at the higher education institutions (HEIs) in England, a teaching qualification is not mandatory though there is a trend of HEIs supporting their deliverers in obtaining teacher training which has the approval of the Higher Education Academy (HEA) (Loo, 2016). A teacher may also re-visit parts of the conceptual framework as a result of pedagogic or occupational 'triggers' or incidents such as an unintended 'failure' or consequence for example in the pursuit of a teaching strategy to a group of learners in the taking of oral history of patients in a simulated dental hygiene session.

Returning to teaching knowledge, it may be derived from other disciplines such as psychology, sociology and business management. Examples may be learning theories such as social constructivism and behaviourism from these disciplines¹. This theoretical/disciplinary knowledge or knowledge relating to the 'singulars' needs to be recontextualized so that it can be used as theoretical knowledge for teaching purposes. This type of recontextualization may be termed content recontextualization where the selected parts of the theoretical knowledge are then relocated for the purpose of educational activities. This type of theoretical knowledge is dependent on the nature of the disciplinary know-how. If the selected knowledge is from psychology, then this may be classified as a hierarchical variety of the vertical pedagogic knowledge. If it is

from sociology, this, according to Bernstein, may be classified as a horizontal knowledge structures variety of the vertical pedagogic knowledge. These two forms of vertical knowledge offer insights into how the related recontextualization processes occur. Because these forms of knowledge are used for an occupation-specific context i.e. education, these knowledge require a content recontextualizing process where they are then modified for educational purposes. For example, a learning theory such as social constructivism needs to be refocused to meet the needs of education. The social contexts such as knowledge of the learners need to be factored into the curriculum to relate to the academic level of the curriculum. Part of the social constructivist approach is to identify and understand the level of know-how the learners bring to the educational setting and from there create intellectual scaffolding activities to help them to engage with acquiring new knowledge. In this approach, the teacher will need to ascertain their knowledge from the pedagogic aspect at this present stage. This theoretical knowledge after the recontextualization process can now be termed pedagogic knowledge where the theoretical knowledge is relocated for teaching. This process has significance for curriculum formation where the curriculum for the teaching of an occupational programme needs to be produced. This may be known as curriculum stage. A detailed delineation of this will be in Chapter 10 in the training of teachers.

The pedagogic knowledge needs to be applied for teaching purposes, and the process by which this is done is known as pedagogic recontextualization. It is the process where pedagogic knowledge is selected and refocused ready to be used for example in a series of lessons or one-day long session, depending on the format of the programme. This process of preparing pedagogic knowledge for use in teaching sessions is part of the application of pedagogic knowledge. Included in the pedagogic recontextualization process is the preparation of the pedagogic knowledge for teaching. This process involves the various types of knowledge that relate to the recontextualized theoretical knowledge or pedagogic knowledge.

The other type of know-how –work knowledge - is related to the work experiences of a pedagogic nature. It includes experiences of organisations such as their systems and protocols of working in different teaching institutions, experiences of being mentored, coached or via peer learning. It has individual and collective dimensions. These forms of know-how can be explicit or tacit in nature, and it can consist of skills (such as interpersonal, thinking and learning), knowledge resources (from the Internet and colleagues), understanding (of situations, contexts and stakeholders), and decision-making and judgement. Notions of ‘knowledgeable practice’ and ‘practice architecture’ regarding the organisational practices such as mentoring system and the articulations with peer teachers and stakeholders are helpful in understanding this complex activity. Also related to this type of work knowledge, is the recontextualized disciplinary knowledge or pedagogic knowledge.

Both types of know-how are included in this complex process for application in teaching, which is known as applied pedagogic knowledge. Also included in this complex mix is the teacher’s belief or vision as this will influence the choice of an appropriate teaching strategy/approach to a particular cohort at a specific level and subject area etc. in the final recontextualization process - integrated applied recontextualization. The above application phase may refer to the use of regions and or generic modes of recontextualization from Bernstein’s viewpoint. Before finishing this

description of the teaching practice, I will next describe the occupational practice before finalising this explanation of the conceptual framework.

Occupational practice

The other dimension relates to occupational practice. This dimension relates to the working and learning processes of an occupational worker. It is relevant for those who are involved in the teaching of the relevant work-related programme as they can rely on their occupational know-how to inform their learners. It follows a similar process like in the teaching practice dimension as described above. A worker (and eventual teacher from the perspective of this investigation) acquires the relevant disciplinary knowledge (such as physics and biology) so that it can be used in the relevant occupation (such as gas fitting, dental hygiene or emergency medicine). Again, like in the other teaching practice dimension, this is an epistemological stance. Through a process of content recontextualization, this theoretical knowledge is selected and relocated for the appropriate occupation. This recontextualized knowledge is termed occupational knowledge. For example, the relevant aspects of physics such as gas flow knowledge will be used for the learners/workers for gas fitting work. This know-how from the user's perspective is different to the disciplinary knowledge form as it is contextualised to the specific occupational needs. From the learner's perspective, this disciplinary know-how is contextualised to her/his specific occupation and is, therefore, different to someone who knows this know-how purely from a disciplinary perspective.

This form of knowledge is used to frame a curriculum as part of its specifications. Like in the teaching practice dimension, this is the acquisition phase of the conceptual framework using singulars form of vertical discourses from a Bernsteinian perspective. Aspects of the occupational knowledge are again selected, relocated and refocused for work purposes through a process of occupational recontextualization. This second recontextualization process also includes a combination of occupational knowledge and work knowledge. Occupational knowledge might consist of recontextualized disciplinary know-how that is relevant to the specific occupation such as anatomy and psychology in dental hygiene.

Work knowledge of the occupational nature refers to the know-how of organisational systems, protocols and other aspects of know-how that are other than occupational know-how. It has individual and collective dimensions. These forms of know-how can be explicit or tacit in nature, and it can consist of skills (such as interpersonal, thinking and learning), knowledge resources (from the Internet and colleagues), understanding (of situations, contexts and stakeholders), and decision-making and judgement.

In this conceptual framework, one can argue that the occupational and work knowledge of a user (e.g. a general practitioner) is specific to her/him. The specific occupational and work experiences (e.g. initial clinical training and experiences of patients that are specific to the GP) are different to those in the same occupational area (e.g. general practice). The notions of 'knowledgeable practice', 'practice architecture' and 'systems 1 and 2' offer richer understandings of this complex activity concerning the institutional protocols, the 'sayings', 'doings' and 'relatings' of the workers and the decision-making processes in carrying out the occupational activities.

The complex amalgam of occupational and work knowledge of an occupational nature via the occupational recontextualization process becomes applied occupational knowledge, which we now turn to.

Occupational pedagogic knowledge

Occupational pedagogic knowledge is a result of the complex interaction between applied pedagogic knowledge and applied occupational knowledge via the integrated applied recontextualization process. Needless to say, a teacher with occupational experiences teaching on a work-related programme may not consciously relate to the above forms of knowledge and the processes. The discussions in the following chapters (Chapters 5-9) following this one will offer insights into how these teachers of work-related programmes from the three academic levels (i.e. TVET, university and professional) relate to this complex activity. This conceptual framework aims to provide deep insights into how this type of teacher acquires and uses the various forms of know-how or capacities (e.g. knowledge, experiences, abilities and skill sets) in the different types of recontextualization processes to formulate the appropriate teaching strategies/approaches.

The two types of applied knowledge – pedagogic and occupational – are the results of the context recontextualized process from theoretical knowledge to knowledge for either teaching or occupation-related settings and from those stages, recontextualized from the two knowledge types and work knowledge (of both teaching and occupation-related) to produce the applied pedagogic and occupational knowledge. These two types of applied knowledge are finally recontextualized via the integrated applied recontextualization process to create Occupational Pedagogic Knowledge (OPK) or Occupational Teachers' Capacities² (OTC). From this final form of know-how, the teacher will ascertain the relevant teaching strategies/approaches. The strategies are dependent on several contextual factors such as the type of occupational area, academic level of an occupational programme, types of learners, accreditation of professional bodies, types of occupational artefacts and the teacher's belief/vision (to name a few). As indicated in the previous two literature review chapters, some of these teaching strategies/approaches include demonstration, simulated environments (e.g. simulated dental hygiene work setting), field trips and problem-based scenarios³.

At the start of this chapter and a reminder at this point, the framework exhibits dynamism and fluidity in differing directions along the framework (Figure 1). A teacher can re-visit any of the stages of the framework (and not necessarily at the beginning of the two practice dimensions) resulting from either teaching or occupational triggers/incidents. This ongoing reflective process may offer different perspectives, which the teacher can utilise in future teaching activities such as a different choice of teaching strategy or a different ordering of teaching sequence from a specific part of a curriculum specification over a period.

Summary

This chapter started with a reminder of the definitions of occupational knowledge (both pedagogic and occupational) and the related applications using a dual professional approach initially for discussing purposes following the literature reviews from the

previous two chapters. It then offered a description of the conceptual framework of the occupational pedagogy of teachers with the accompanying figure 1.

¹ For a visual representation of the major learning theories and their relationships with each other, please refer to ‘Theories of Learning’ on the website: <https://ioe.academia.edu/SaiLoo>.

² The term, ‘capacities’ is taken from Bernstein (1996, p. 73) to denote in this study to include abilities, capabilities, dispositions, experiences, judgement, knowledge, protocols, skill sets and techniques.

³ There are related codified sources (especially textbooks), which deal with teaching strategies/approaches though not specifically linked to occupational or vocational pedagogy. The two textbook sources include Huddleston, P. and Unwin, L. (2013) *Teaching and Learning in Further Education: Diversity and change*. Abingdon: Routledge. [Chapter 5] and Fry, H., Ketteridge, S and Marshall, S. (2014) *A Handbook for Teaching and Learning in Higher Education: Enhancing academic practice*. Abingdon: Routledge. [Part 3: Teaching and learning in the disciplines (Some of these 13 disciplines include occupational ones such as engineering, nursing, health and social care, and medicine and dentistry)]. The other source for teaching strategies/approaches is a report by Lucas, B., Spencer, E. and Claxton, G. (2012) *How to teach vocational education: A theory of vocational pedagogy*. London: City & Guilds Centre for Skills Development. [This report defines vocational pedagogy as “the science, art, and craft of teaching. Pedagogy also fundamentally includes the decisions which are taken in the creation of the broader learning culture in which the teaching takes place and the values which inform all interactions” (p. 115). It acknowledges that “vocational pedagogy and practical knowledge is an under theorized area of education” and that there is “no comprehensive vocational pedagogy currently exists” (p. 115). Finally, the report offers a “proof of concept” and not a comprehensive theory of the subject (p. 115). It appears to be focusing on teachers and learners and that the role of knowledge (section 8.2.1) merely plays a part without a comprehensive discussion of vocational knowledge. In summary, one may suggest that the report offers a comprehensive survey of the teaching strategies in the FE sector rather than specifically of vocational education].