The development of TESOL teacher beliefs and knowledge in an ICT-enriched CPD environment

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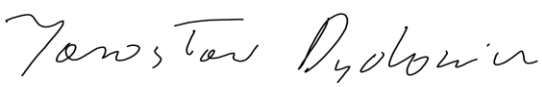
Thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Education (EdD)

2014

The work submitted in this thesis is solely that of Jaroslaw Dydowicz.



Dedication

This EdD thesis is dedicated to all members of my family, especially to my father Edwardo and my wife Asia.

I would like to thank my supervisor Dr Norbert Pachler and my examiners, Professor Andrew Brown and Dr Robert Vanderplank.

There are many other people who have helped me during the EdD and I would like to extend my special gratitude to Declan Cooley, Gail Jaraki, Garry Robson, Lucyjane Padget and Agata Rajtmajer. Your kind support was indispensable to complete this work.

Abstract

This thesis investigates the professional development of TESOL teachers during a postgraduate peer-taught course in English Philology at the Pedagogical University in Krakow, Poland. The analysis, conducted on the basis of a Grounded Theory approach, examines how an ICT CPD course influenced the professional development of forty newly-qualified Polish teachers of English as a Foreign Language, who engaged in peer teaching as a central component of the course.

The research uncovers and examines teacher beliefs and knowledge in a setting characterised by a high degree of autonomy. The study proposes that the participants, in order to present themselves as competent and self-assured ELT professionals, acted upon the notion of the 'good teacher' through both the tacit and the explicit CMC-based negotiation of a collaboratively structured teaching model consistent with their beliefs. In the process of designing ICT-rich English lessons, the participants, guided by their beliefs, ascribed value to subject-specific pedagogical knowledge and skills, foregrounding pedagogy and normalising the technology. The role of autonomy is confirmed as a prerequisite for the kind of practice which supports and enables the pedagogical development of teachers in such an ICT CPD.

The thesis offers an original contribution in its presentation of a new construct for understanding teacher belief in the context of technology-related settings. The Technological Pedagogical and Content Beliefs construct (TPACB) attempts to capture the relationship between different types of teacher beliefs, and complements a parallel knowledge construction model - Technological Pedagogical and Content Knowledge – by offering a proposition which illuminates the nature of the interplay of the beliefs relevant to the field of TESOL and other areas of education. In addition, the study proposes a model for an ELT CPD practicum which encourages development in pedagogical knowledge and beliefs while promoting the integration of ICT into practice.

List of abbreviations:

CMC – Computer Mediated Communication
CoP – Community of Practice
DV - Digital Video
ELT - English Language Teaching
GT - Grounded Theory
ICT - Information and Communication Technology
IFS- Institutional Focus Study
TESOL - Teaching English to Speakers of Other Languages
TPACK/ TPCK - Technological Pedagogical and Content Knowledge
TPACB- Technological Pedagogical and Content Beliefs
TPACKAB- Technological Pedagogical and Content Knowledge and Beliefs

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OUTLINE OF THE THESIS

This thesis traces the changes in the professional development of Polish TESOL teachers participating in a postgraduate ICT CPD course in English Philology at the Pedagogical University in Krakow, Poland. The teachers were asked to author and peer-teach advanced English classes to other participants using a purposefully designed course website which featured CMC and DV components.

Chapter 1 provides an introduction outlining the exploratory nature and aims of the study. It presents the professional motivations behind both the design of the advanced English language course and the conceptualisation of the ensuing research. The area of the research is established: teachers' understandings and actions in an ICT CPD peer-taught English language course. The relevance of this study to my professional practice is outlined and the main reasons for the adoption of Grounded Theory as a research method are introduced (later developed in Chapter 4). The focus of the research is delineated through a broad research question: How did this ICT CPD course influence TESOL teachers' professional development ?

Chapter 2 addresses the context of the study and provides details of the participants and the setting. This chapter locates the study within the scope of the requirements for a professional doctorate. The characteristics of the participants (extended by the pen-portraits in Appendix I) and the researcher's role are described. The chapter continues with the elucidation of the peer-based, technology-rich format of the teaching and learning practices in which participants engaged in language development while honing their pedagogical skills. A description of how the course was modified from its usual format is given. The participants' detailed roles and actions as language teachers and language learners are offered together with a presentation of how the participants utilised CMC and other technologies in the course. The chapter concludes with an outline of the research data and the procedures of their collection, further extended in Chapter 4.

Chapter 3 contains a presentation of the theoretical perspectives. The chapter offers a literature review of the issues germane to the themes emerging from the research as a result of the GT procedures and subsequent engagement with the literature. I examine the issues relevant to teacher professional development, namely, professional knowledge and beliefs, and their relationship to teacher practice. As a result of the reiterative engagement with the literature and the data, the theme of teacher beliefs became the focus of this review; the secondary theme, to the extent that it overlaps, is teacher knowledge. Both themes were addressed using a number of empirical studies. The chapter establishes a perspective on teacher beliefs within ICT CPD for TESOL teachers. In particular, much attention is focussed on various types of teacher knowledge and beliefs. A gap in the literature is identified, namely, the limited attempts to capture the influence of ICT CPD training on teacher beliefs relating to technology use. Thus, the thesis sets out to offer a contribution in the field of TESOL to extend our understanding of belief and knowledge formation and the relationship between them. In addition, the literature discussion problematises the link between teacher motivation and teacher autonomy.

Chapter 4 begins with the presentation of the research questions, the background to their formulation, and their fit with the chosen method. The chapter offers a detailed account of

Grounded Theory (GT) as a methodology and a research method. Issues concerning the use of the method, the researcher's bias and the limitations of the study are accounted for in the reflective portrayal of the research process. Data collection procedures (the nature of the data, sampling, division and chronology) are accounted for. The GT coding and the analysis of the data are documented. Ethical considerations including exertion of pressure on the participants, confidentiality during and after data collection, ownership of data, sampling participants, and means of obtaining the Institute's permission are addressed. Appendices V and IV feature further information on the data characteristics and the research tools.

Chapter 5 presents the results of the study and offers a discussion of the findings concerning the influence of the ICT CPD course on TESOL teachers' professional development in a setting where the participants were required to use digital technology. Its two main sections (5.3 and 5.4) organise results relevant to the research questions. The literature perspectives are brought together with my key findings to offer new insights into the researched environment. A number of quotes from various sources of data (e.g. CMC, interviews and questionnaires) are drawn on to exemplify and buttress the points raised throughout the discussion. The analysis centres on the changes in teacher beliefs and practice supported by collaborative work on a teaching model (the extensive authoring of material, regular CMC feedback on the lesson content and pedagogical actions) which is maintained and negotiated by the participants via CMC and the examples set in the classroom. The following beliefs and related concepts are considered: the conceptualisation of a good teacher and good lessons, beliefs about ICT and DV in teachers' CPD practice, and teacher emotional states.

The chapter analyses the teachers' quest to conduct meaningful classes and discusses how their reflective practice (supported by CMC peer-and self-critique) encouraged actions congruent with personal beliefs. As an original contribution, the chapter offers a refining of the concept of TPACK (Section 5.5), by presenting the Technological Pedagogical and Content Beliefs construct (TPACB) as relevant to the integration of technology in educational settings.

Chapter 6 provides a summary of the findings relating to the question of how the course influenced the teachers' professional development. The changes in TESOL teacher knowledge and beliefs are reiterated, and the main findings as relevant to the ICT CPD setting for TESOL teachers are summarized. In addition, the key aspects of a new model for understanding teacher beliefs in ICT-enhanced settings are laid out. further, a tentative model for an on-site peer ELT ICT-aided practice, which was tested in the course and enhanced theoretically through this research, is presented. The model is designed to promote positive TPACB development and TPACK growth with the intention of increasing the integration of technology in teacher practice in the face of possible contextual limitations.

Chapter 7 reflects on the research process, discusses some limitations of the study and offers suggestions for future research related to the validation and potential development of the proposed TPACB construct. A particular avenue for exploration is suggested, namely, the investigation of approaches by which TPACB can be combined with TPACK to aid CPD design and the integration of technology.

1 CHAPTER 1: INTRODUCTION

This chapter introduces the research setting, outlining the aims and conduct of the research process. It also presents the main research question and its justification.

1.1 General aims and justifications of the research

This research focuses on Polish postgraduate TESOL students participating in an MA level ICT CPD course. All course lessons were designed and conducted by peer-teachers at the Institute for Modern Languages, Pedagogical University of Krakow as a partial fulfilment of a programme required MA course in English Philology. As I explain in detail in Chapter 2, the scope of the two-term advanced English classes was extended by adding an element of peer teaching and technology in a response to teachers' feedback requesting a change in the integrated-skills language course. The course, with the endorsement of the Institute, took the form of a technologically-enhanced advanced English teaching practice.

The research had also been prompted by my personal involvement in CALL training, particularly the evidence I gathered on the inadequate application of technology in teaching by trainees in their teaching practice. By investigating the process of lesson preparation and teaching through an exploratory study, I attempted to reflect on what type of course design promotes the pedagogical and language development of novice language teachers. The study therefore also informs the development of curriculum design for pedagogical courses and thus proposes a way to integrate ICT in CPD in TESOL training.

The course which is in the focus of this research had not been created with the purpose of being investigated - this decision came in the second term of the course as a reaction to the overly positive feedback expressed by the participating teachers both in person and in a short mid-term questionnaire (see section 1 of Appendix XIII). Consequently, I put forward the proposal for a study which, drawing on Grounded Theory (GT), mounted a detailed analysis and interpretation of the English teachers' cognition and activities in order to explore the main research question of how the ICT CPD course affect TESOL teachers' professional development.

In particular, through an attempt to analyse teachers' understandings and uses of ICT in their classroom teaching practice, a perspective on their professional development was sought in the environment where more autonomy is offered to teachers who act as the course co-designers and lesson content providers. Thus, one of the initial foci of the research was the use of a particular kind of technological resource. As the research progressed, through focussing on how

the participants engaged in designing and teaching lessons I uncovered some of the beliefs that accompanied their practice. As a consequence, teacher pedagogical beliefs, relevant to their practice in a technology-rich context, became the primary interest of this thesis.

The aim of the study was, given this, to carry out a Grounded Theory analysis of the teaching practice within the classes and to extrapolate from it an understanding of how the course was affecting the participants on a professional level. I paid attention to the formation and development of teachers' understanding of ICT's role in teaching/learning processes and the ways in which the participants integrate ICT into practice. The resulting findings illuminate the processes through which teachers assemble their professional knowledge, skills and beliefs.

Finally, the research results aid professional practice by helping to design better ICT-based courses for language teachers within the Institute and beyond, corroborating and possibly extending the validity of relevant frameworks and adding to the TESOL literature focussed on understanding teacher beliefs in the digital age.

1.2 The character of the study and the research process

The study was exploratory in nature and the participants' beliefs about pedagogy and ICT were examined together with the accompanying actions. The study placed an emphasis on relationships between the cognitive processes, personal dispositions, institutional factors and tool design, all of which may influence the attempts of the teachers to become competent integrators of technology [1] in their teaching practice. These issues were explored in an attempt to better understand the development of their ICT-related knowledge, beliefs and skills.

Though the course was a pedagogical intervention, the study itself was not; I had not changed the course conditions with the intention to conduct a study. The research was drafted late in the course and the actual data gathering, with a still tentative research question in mind, took place only towards the end of the second term of the course. However, the conclusions do set out recommendations for structuring a new in-course teaching practice for TESOL teachers, and suggest ways in which the potential of the design can be harnessed to enhance the development of reflexive professional practice.

I used Grounded Theory (see Grounded Theory section 4.3) to help frame an analytical focus on the socially constructed, inter-subjective character of the environment in which the teachers

[1] In this thesis, whenever I refer to technology, I am addressing digital technology (e.g. internet, computers, multimedia projectors, speakers, and relevant software).

operated, and the understandings and practices they employed in their attempts to present themselves as competent ELT practitioners (Charmaz, 2000, 2006; Clandinin & Connelly, 2004; Connelly, Clandinin & He, 1997; Strauss & Corbin, 1994) Grounded Theory was a good choice for the research question asked as I was interested in exploring the setting rather than applying a theory or testing a hypothesis. Consequently, I allowed concepts to emerge from the data, which helped me develop my own exploratory frameworks for addressing the research questions. This was possible as Grounded Theory offers an opportunity to take a fresh perspective on the research questions through generally inductive analysis.

Since all teachers were also acting as their peers' students and critics, the setting encouraged a high level of reflexivity, aiding the maturation of practice through careful observation of their own and their peers' successes and failures. In a way, this format encouraged a deep engagement with teaching practice. This certainly turned out to be an authentic teaching experience as opposed to beginner-level micro-teaching sessions the participants had experienced during their prior training. A number of other processes were in play during the course; however, it was during the Grounded Theory analysis that the processes relating to developing beliefs of participating teachers emerged as core themes. As their linguistic development has not been addressed, the data gathered did not foreground any of the language learning aspects, such as the development of particular language systems, e.g. the learning of grammar or vocabulary. Though an improvement in L2 proficiency was meant to guide the teaching, I did not record or analyse any instances of language learning itself as that would necessitate a shift in the scope of the research. Consequently, the research in principle focuses solely on the issues surrounding the pedagogical development of the participants. The figure below presents the research process.

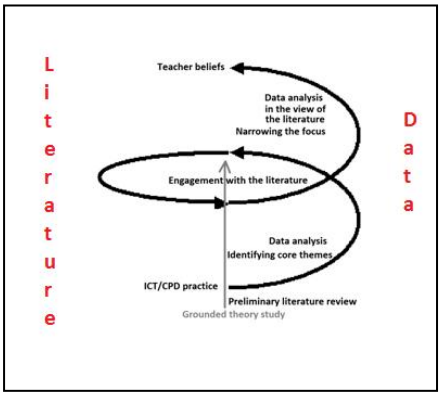

Figure 1:1: - Research process: narrowing the focus through data analysis in view of the literature review

The initial focus of the research was on the application of a particular technology and its effect on teachers. However, the main research question was deliberately broad and exploratory in

nature namely, what happens when TESOL teachers are asked to design lessons with technology in a CPD, course. The choice of Grounded Theory methodology allowed me to remain open to new developments throughout the entire research process and use new literature to adjust my research questions according to the unfolding analysis. As a result, the technological focus diminished and a new focus in the area of teacher cognition, in particular teacher beliefs and related concepts, emerged as relevant to explicating teacher practice in the researched CPD context. Both the literature review and the analysis reflect this new development. However, due to the formal limitations on the thesis, the study in its final re-worked form presents only the findings addressing the specific research questions after the focus was narrowed.

2 CHAPTER 2: THE RESEARCH CONTEXT

This chapter presents the research context and locates the study in the scope of the professional doctorate. It introduces the participants of the research and outlines the role of the researcher. The design of a CPD course conducted in a form of a new on-site peer-led ICT-aided ELT practice is drafted and the key aspects of the conduct of the research are introduced. The chapter concludes with the sketch of the research data, furthered in sections 3.7 and 3.8 in the following chapter.

2.1 Research participants and the new on-site peer ELT ICT-aided practice

2.1.1 The participants and their prior training

The professional context and research context are the same, as the study was conducted in the Institute in which I was employed at the time of the research. The Institute of Modern Languages of Krakow is a division of one of the leading teacher-training universities in Poland (a status recently conferred on the Institute). Students are offered MA in English and programmes run in four main areas: Literature, Translation Studies, History/Culture and Language Teaching. All of the courses feature ELT components and are offered as continuous professional development opportunities for those who need to expand their teaching qualifications.

A cohort of forty Polish students in the first year of their MA in TESOL became my sample (see section 4.5.1 for sampling procedures). The majority of students were female and all were in their mid-twenties. All were qualified teachers, held a BA in TESOL and were continuing their education i.e. becoming qualified to teach beyond primary and lower secondary level in the Polish educational system. To characterise a typical representative of the cohort, I have included two brief pen-portraits of representatives of the course participants- Maryśka (female) and Szczepan (male) - in Appendix I.

The course, which was planned to be a two-term practical English class (focussing on speaking and listening) became, when conducted through peer-teaching, a de facto on-site teaching practicum[2]. Since technology plays an important role in the course and this research, it is worth noting that most teachers had participated in an obligatory full-year ICT course, usually followed by one in Technology Enhanced Language Learning (TELL), during their BA-level training and had already taken part in 150 hours of school-based teaching practice. The material covered during

[2] i.e. observed teaching practice realised as a part of teacher training

ICT courses depended to a large degree on the individual tutor leading the course and varied from instruction in basic programming to thematic workshops on using technology to facilitate the teaching of particular language skills.

2.1.2 The researcher's role

My role during the classes was mostly one of observer and I refrained from offering any pedagogical support. However, at times teachers requested equipment or software-related help from me which I granted in order to resolve rare incidents of technological failure. I maintained a low profile to give the teachers a sense of autonomy in managing the course and the motivation to provide the quality of teaching that would satisfy both the course requirements and their peers' expectations. I was acting on the assumption that this cooperative teaching effort, supported by CMC-aided peer feedback, would have a positive impact both on the teachers' professional development and their teaching performance.

I decided to refrain from giving feedback during and after the classes for three reasons: 1) feedback given by participants online was of high quality and in fact more extensive than any I felt I could provide; 2) the vast majority of students made no request for my feedback despite their freedom to do so; 3) I judged that the students' sense of responsibility for the course might be diminished if they believed that they could rely on supervisory feedback from an authority figure. Consequently, any influence I had on the setting, either through my presence or the provision of the online tools and the course principles (presented below), were likely to have only an initial and later rather general regulatory effect.

2.2 The redesigned on-site peer ICT-aided ELT practice

Throughout this research I use the term on-site peer ELT ICT-aided practice to refer to a teaching practice conducted by the participants of this research within the Institute using peers as students. The CPD course central to this study was 1) an attempt to act on the observation of my fellow teacher mentors (including myself) that ICT is currently underexploited by teachers and 2) an effort to understand factors which may have a bearing on the teachers' decisions to use technology in their practice. Though the design of the practice may be seen as an innovative spin on microteaching, it was not meant to follow the principles of microteaching as the lessons:

- were never conducted as teaching 'simulations',
- were the full length of the entire class-time available,
- did not include feedback from the tutor,

- were not focussed on practising any targeted teaching techniques.

In previous years, this course was run as advanced English integrated skills class in which participants read either a CPE level textbook or a compilation of materials provided by the tutor. On this occasion, the format of the course was extended by adding a pedagogical element to what normally would have been taught as an advanced English course. CPD courses have an established tradition of using peer tutoring and peer feedback (see e.g. Kennedy, 2005; Mishra & Koehler, 2005; Slater & Simmons, 2001). The rise of such designs resulted from criticisms of traditional CPD contexts and forced educators to adhere more closely to constructivist ideas by positioning teachers in more central roles as active contributors in the knowledge construction processes. However, university-run, peer-authored and taught practicum using digital media (with a purpose-built CMS) at an MA level is not encountered as frequently. In addition, this course was the first attempt of this kind at the Institute and as such aimed to address both language related demands of the syllabus and provide the participants with the opportunities for pedagogical ICT practice.

From the language learning perspective, the aim of the course was to provide language practice at an advanced level, integrating all language skills, though mostly speaking and listening. All of the teachers had previous experience designing and running classes according to syllabuses given in schools. Consequently, it was reasonable to request that the participants take turns in collaboratively designing and teaching course lessons first in groups and then in pairs. What follows is a brief presentation of the structure and assumptions of the course.

I developed this experimental two-term course in response to the needs and requests of students who were already working on intensive reading and vocabulary modules; students wanted an opportunity to take part in integrated skills classes with an emphasis on communication. The heart of my course design was the structuring of the classes as a collaborative integrated skills course. Consequently, teachers were granted autonomy as co-designers of the course, providing all its content and significantly contributing to its form. Though not intended as a teaching practicum as such, this course, as is explained below, gradually took on the characteristics of an on-site peer ELT ICT-aided practice, offering a chance to develop teaching skills while engaging in genuinely advanced language practice.

All teachers were required to team-teach one 90-100 minute lesson per term. In the first term, teachers delivered lessons to their peers, working in groups of three to five, and in the second term participants team taught in pairs. Classes took place on weekend afternoons and evenings. Two groups of twenty teachers met weekly for two hours of teaching per group; designated student pairs or small groups taught a lesson, which they prepared outside contact class time.

The teachers stated in the interviews that the preparation time for each lesson was usually in the range of 20-30 hours. Investing this amount of time on preparation and teaching was clearly an important factor in the teachers' personal development. Interestingly, when asked in anonymous online questionnaires all confirmed this time investment as necessary for the creation of classes (Appendices VI and VII).

The format of the language class was designed to meet the requirements of the syllabus by providing an integrated skills course for listening and speaking skill development. I set the prerequisite that students exploit YouTube videos as a resource in lessons - and consequently practice the pedagogical and ICT skills necessary to gather, sort, convert, organise, upload and handle digital material. Students were required to work together, as noted, to plan a lesson that featured clips from YouTube - of any length, on any topic and for any language aim they chose - using an online lesson planning form (see Appendices II and III) which I designed for that purpose and included in the course website.

The peer-taught setting of the course necessitated that the students act as language teachers and language learners simultaneously and interchangeably. The table below presents the typical activities participants engaged in before, during and after the class, and their interchanging roles (as teachers and students):

ROLES	Before classes	During classes	After classes – at home
LANGUAGE LEARNERS	• No preparation was required on the part of the students when they acted as language learners.	• Participating in lessons • Observing practice in order to provide feedback in the form of comments, (noting ideas for own practice)	• Giving feedback on teachers practice via CMC • Doing language homework assigned by the teachers
LANGUAGE TEACHERS	• Designing lessons; learning language and mastering the content of the classes • Uploading lessons onto the online platform	• Teaching lessons • Observing own practice and students reaction for later reflection posting and reactions to comments provided by peers	• Writing self-reflection about own practice via CMC • Reacting to comments via CMC (reflective feedback)

Table 2:1: Teacher and student activities in the course

The students who in a given class had taken on the role of classroom teachers shared their reflective statements via CMC (Appendix III - screenshot 3). Those who had played the role of classroom language learners provided feedback online giving their evaluations of the activities and classroom management and their responses to the content of the lesson. I suggested that they address at least the following two issues: 1) teachers' fulfilment of the stated aims of the lesson, 2) students' reactions to the lesson and their suggestions for improvement. The participants shaped the syllabus as topic-based featuring integrated skills practice. Thus, their course gradually morphed into a collaboratively taught and assessed practicum.

Consequently, the course adopted a dual objective. Firstly, it aimed to facilitate excellence in the oral examination at the end of the year in which, according to the Institute's format, students would have to present their views on given topics and engage in a discussion with a partner in front of their examiners. Secondly, it provided an opportunity to practise vocabulary studied in other practical English courses through writing elaborate CMC exchanges. As became increasingly apparent, the language learning aims were slowly superseded and to some extent supplanted by professional development aims. The participants began to focus more on the emergent group-promoted pedagogical aims (seen in CMC inter-student communications) i.e. to use the classes as an opportunity to conduct teaching practice at an advanced level, and to acquaint themselves with the use of digital video and attendant technologies. Consequently, for the Institute, the uniqueness of the course lay in the fact that genuine language practice was coupled with teaching practice using online digital video and CMC.

2.2.1 Establishing the professional development scheme

Although I did not provide continuous modelling, I met novice teachers for a brief demonstration, in which a potentially controversial topic was presented from multiple angles using YouTube videos. Additionally, dramatised clips from a well-known film, a music video clip and an advertisement were shown to complement the presentation. I anticipated that the result of such a demonstration would be twofold: Participants would see 1) that even taboo topics can be processed in educational settings provided they are presented in an appropriate format and through carefully chosen videos, and 2) that digital video can provide advanced students of English a rich source of videos covering literally any conceivable topic from all sorts of viewpoints. This demonstration, I surmise, carried an element of novel practice in the Institute, which normally did not encourage technology integration.

Apart from the above demonstration, my overall instructions for class preparation and delivery were, deliberately, very general: 'Plan and teach a language class for peer teachers using

YouTube as a primary resource'. The whole process would entail designing, teaching, reflecting on, uploading, and if necessary, improving the lesson. However, the design of the accompanying course website, CMC tools and the material upload procedure offered a certain amount of guidance and imposed some limitations as it certainly embedded my pedagogical conceptualisations of how to teach an advanced integrated skills English course (see sample screenshots of the course website Appendices II and III).

2.2.2 The use of technology in the course

The classes took place in a computer room with over twenty participants in each consecutive group. During the classes, the teachers needed to connect a laptop or desktop to a projector and speakers and make sure that the material (e.g. audio, visual, textual) they had brought, usually on CDs or flash drives, played properly. Typical problems involved lack of flash player, unconverted videos, lack of PDF reader, no sound, a copy of shortcuts rather than full files, and image only displayed on a laptop, etc. Though the materials were available online on the course website, the low bandwidth available in the Institute (below 1 Mbps shared between 40 computers) prevented teachers from using materials directly from the course website.

An online lesson planning form (see Appendix II) was designed as a backend of the website to collect and manage all lesson materials (e.g. videos, handouts, PPT presentations, Mp3 files and interactive quizzes) in a systematic and standardised way. The participants had prior knowledge of lesson planning through their BA studies in TEFL (e.g. objectives and outcomes for each task, anticipated difficulties during given stages, controlled vs. free practice, presentation-practice-production sequence, etc). Consequently, the form was not designed as a rigid lesson template to capture and address all the complexities of the lesson planning process. For the teacher using the frontend of the website, this tool was a means for conducting the lesson in a flexible way, i.e. deciding which lesson materials would actually be used. Alternatively, it served as a bank for lesson plans and all gathered materials and videos. I provide sample screenshots of the tool together with a brief description in Appendix III (screenshots 1-5).

At home, teachers located and downloaded videos, converting the video format, if necessary. Other out of class work included finding the appropriate players, converting MS Word documents into PDF format and uploading the lesson plan by completing the form mentioned above. It’s worth noting that teachers could use any number of videos, provided they fitted into the lesson-time. Before the end of the second term, all the teachers were asked to review their lessons and transfer them to a new online platform (see Appendix III, screenshot 5) with the intention of making them available to a wider public audience, not restricted to the Institute.

2.3 Outline of the research data

The nature of the data is influenced by the fact that the course had not been designed to be the focus of my doctoral research. The idea of investigating the course as a subject of my doctoral study emerged towards the end of the second term, with the research proposal drafted only at the end of that term. Beliefs cannot be directly observed and I relied on the teachers' accounts to analyse changes in their beliefs. In the case of the CMC (see Appendix XIII - sections 2 and 3) the teachers' accounts were based on incidents experienced in the classes and were usually posted immediately after the lesson. As the research questions were not established prior to the course, the participants were polled on the issues directly relating to research questions only at the end of the course. Despite these limitations, I managed to collect rich and relevant data from multiple sources.

The data gathered are largely extrapolated from the stated perceptions of the participants, and they rely on the accounts given in the questionnaires and interviews (see Appendix VI and VII). In order to triangulate this data and saturate the emerging categories I also analysed other sources such as the submitted lesson plans, teachers' comments about their peers' teaching extracted from a CMC discussion forum, CMC comments about the course overall, observation notes and mid-term feedback. I conducted informal interviews with staff members, in particular those responsible for the pedagogical and linguistic training of the participants. Finally, two years later I collected reactions to the findings from a sample of those participants who were then in-service teachers. Consequently, by analysing swathes of data pertaining to various stages of the course, I was able to provide continuity and breadth in data sampling.

3 CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

In this chapter, guided by the research questions, I examine the issues germane to teacher professional development, namely professional knowledge and beliefs and their relationship to teacher practice. Key literature in the areas bearing on the research (ICT/CPD) is discussed and an in-depth review is conducted of the themes which emerged during a Grounded Theory method analysis.

While much of the educational literature has focussed on the common characteristics of and distinction between teacher beliefs and knowledge, there have been few attempts to capture the interplay between the two by concentrating on the actual practice of foreign language teachers in collaborative ICT CPD settings. What is often missing is an attention to teacher beliefs regarding the use of technology, despite the growing body of research suggesting their importance in decision-making processes and practice.

An analysis of theoretical perspectives reveals the complexity of in-service TESOL teacher pedagogical development and highlights knowledge and beliefs as key factors in the use of technology. This analysis was conducted in order to contribute to a greater understanding of decision-making processes regarding the integration of technology into pedagogical practice. The subsections outline the context of the ICT CPD training, discuss teacher identity and teacher cognition, demonstrate a link between teacher autonomy and motivation, and provide a perspective on teacher knowledge and a focus on teacher beliefs, reflecting on their types and the possible interlocking relationship between knowledge and practice.

As a result of the reiterative engagement with the literature and the data, the theme of teacher beliefs became the focus of this review; the secondary theme, to the extent that it overlaps, is teacher knowledge. Both were addressed using a number of empirical studies.

3.2 Understandings of teacher-learning in ICT CPD contexts

As I discuss in the following sections, a significant proportion of the learning of teachers relates to their development in the spheres of knowledge and beliefs. In turn, knowledge and belief formation often rely on how learning and teaching contexts are interpreted. Thus, to better understand the ways in which teachers' professional development occurs, I first present the key elements of the theories of symbolic interactionism, constructivism and connectivism.

3.2.1 Theoretical perspectives

SI has not, of course, been without its critics – from 'within' as well as without. As far as the former are concerned most of these have concerned methodological issues, revolving around differences between preferences for qualitative approaches to researching social interactions and those that were more scientific and quantitative (Meltzer, Petras, & Reynolds, 1975). Stryker (1987) offers a comprehensive account of such disputes from earlier stages in the paradigm's development. Regardless of methodology or school of thought, however, these days symbolic interactionism can be said to encompasses both a qualitative and quantitative tradition, though one that will most often reflect 'an approach that strives to understand human behaviour, not to predict and control it, nor to have more statistical knowledge of it' (Musolf, 2003, p. 91) for its own sake. Going further, Callero (2003) addresses the main criticism of SI from without, i.e. the view that it is burdened with analytical constraints that prevent it from staging analyses of forms of power that produce and shape the localized micro-context. Callero (2003) argues against this that recent sociological approaches to the self within a symbolic interactionist paradigm reflect emphases on power, reflexivity, and social constructionism. Recent literature on teachers' professional identities provides, as we will see, evidence that symbolic interactionism has survived the criticisms of it to prosper and develop in such a way as to make it a suitable framework for this area of research (Beijaard, Verloop, & Vermunt, 2000; Swann, 1987)

A useful operationalisation and extension of the SI approach, then, is offered by constructivist ideas deriving from its premises which shed light on the processes of learning. For Glasersfeld (1989), there are two central, interconnected constructivist ideas:

1. Knowledge is not passively received but actively built up by the cognising subject;
2. The function of cognition is adaptive and serves the organisation of the experiential world, not the discovery of ontological reality.

Glasersfeld (1989) therefore modifies traditional notions of how we learn, by proposing that our active efforts to revise our pre-existing knowledge, centred on the personal organisation of sought-for meanings, are more important than the straightforward integration of external elements of the surrounding reality. Connecting the two ideas above to educational contexts, the teacher interpretations of the CPD environment would appear to be crucial in how teachers construct knowledge and form beliefs.

Additional dimensions appear when teacher learning takes place in ICT-enhanced educational context. This is why, more recently, researchers such as Starkey (2010) have called for the modernising of teaching theories which, in large part, rely on old pre-digital pedagogies and hinder teachers' innovative use of pedagogical content knowledge. She points to connectivism

as a learning theory more appropriate to an understanding of knowledge creation in web 2.0 technologies. Downes (2007), building on the ideas of connectivism, views learning as network creation and sees connectivist learning and knowledge construction as inclusive of the teacher's modelling and the learner's reflection, thus requiring movement between the existing knowledge networks and the structuring of new ones. Despite the substantial criticism connectivism has received (Kerr, 2007; Kopp & Hill, 2008; Verhagen, 2006) and its questionable status as a theory according to Whetton's criteria (1989), it nevertheless updates and extends our perspectives on knowledge creation in a digital age.

Thus, the elements of symbolic interactionism, constructivism and connectivism offer an interesting perspective in grounding two interconnected themes of the study – the development of teacher beliefs and teacher knowledge in an ICT-rich CPD context. However, how people view themselves has an impact on their identity. A particularly interesting theory related to identity formation is self-discrepancy theory (Higgins, 1987), which proposes that there are three self domains- the actual self, the ideal self and the ought self. The attributes of the actual self are believed by the individual to exist, those of the ideal self are yet to be attained (these may be in the form of wishes) and those of the ought self are forced upon the individual (these represent duty or obligation). Additionally, the theory has it that there are two standpoints on the self - the own personal and the significant other (e.g. an authority or a family member). Higgin's (1987) theory provides a way of understanding and possibly predicting how differences between representations of the self can lead to various types of emotional discomfort. The actual self constitutes a self-concept, whereas the ideal and ought self, both in own and external (belief of how others would like one to be) perspectives, act as self-guides. A practical application of the theory would be to organize CPD in such a way that patterns of self-belief are identified in order to narrow the discrepancies in teacher training, e.g. uncovering tacit beliefs about self, profession, and other teachers, and thus prompting the adaptive development of realistic expectations towards self, students and other staff members.

3.2.2 Applying CoP in CPD

Any conceptual outline of the environment of this study would be incomplete without mentioning that the context could be viewed through the lens of the Community of Practice (CoP) (Lave & Wenger, 1991). According to Holmes and Meyerhoff (1999, p. 182), Community of Practice participation can be understood as 'a process by which individuals acquire membership in a community whose goals they share'. The studied setting discussed in this work bore the characteristics of a CoP, with the very limited role of the tutor and a self-nurtured community of

practitioners who shared goals and engaged in teaching practice on multiple levels, including less formal ones, to achieve those goals.

Lave and Wenger's (1991) concept assumes that learning also takes place at the periphery of settings, i.e. beyond the envisaged and planned contexts, and thus learning is also important on the informal and tacit levels. Communities of Practice clarify the relationship between knowledge and belief creation and engagement in practice by stressing that the initially peripheral aspects of participation in communities of practice gradually become more legitimate and complex. Thus, within the context of the institutional CPD, the trainees in the research faced increasingly challenging teaching actions, and as a result, developed situated knowledge and beliefs, as they were learning within peer-relationships in a relatively autonomous environment.

This community, in fact acting in the capacity of community of learners, was formed in a CPD setting to handle a novel and uncharted learning/teaching situation in which teachers were asked to use new pedagogical ICT strategies in a classroom of their peers to benefit both their peers' and their own pedagogical and language learning. This was possible in the studied context due to the duration and intensity of the course. This kind of setting is also thought to facilitate teacher learning (Hammond et al., 2008; Lee, 2011) as participants benefit from being exposed to their peers' use of ICT, a notion also confirmed by Pachler et al. (2010). The CPD setting of the study granted significant autonomy to the participants, which allowed them to establish themselves as a CoP acting within and beyond the imposed structure of the syllabus, e.g. by forming ad hoc informal peer support networks to address the challenges of the course. Despite the egalitarian nature of the course conditions, Kennedy (2005) warns that CoP can take a form in which dominant members impose their understandings on others. As I argue in the Results and Discussion Chapter, this lack of clear structure empowers the members in their development as they observe their peers and exchange ideas, thus supporting their CPD learning.

3.2.3 Integrating ICT in teacher CPD

The above design is a positive move away/change from the limited but lingering understanding of what CPD constitutes, well exemplified by the ICT CPD Landscape report (Pachler, et al. 2010) in which 65% of respondents claimed that it was only hardware and software skills training which were most beneficial to them. It is worth noting that there was hardly any mention of the need for particular subject-oriented pedagogical ICT workshops to address domain-focussed teaching issues. CPD courses of this nature, especially if taking place over an extended period of time, are particularly helpful in developing explicit and reflective pedagogies (Almås & Krumsvik,

2007; Schibeci et al., 2008),while short CPD courses are generally less effective (Livneh & Livneh, 1999). Thus, practices where observation and feedback - including peer feedback -are present may contribute to teacher growth (see e.g. Hustler et al., 2003)

Based on the above, a two-semester subject specific CPD course should offer a greater chance of professional development for the participants, but only if it is conducted in a way that creates opportunities for active engagement. However, even short CPD courses which reverse teachers' usual roles as 'passive receivers' may lead to some beneficial results. For example, the study conducted on a group of 166 ELF teachers participating in CPD seminars (Lee, 2011) demonstrated that teachers can benefit from a participatory model of CPD in which they are presenters and contributors rather than passive receivers in traditional, transmission based approaches, which according to Lee (2011) is still the dominant paradigm in the area of ELT CPD.

Though the length of CPD training has an effect on its results, it is vitally necessary to enable teachers to see technologies as valuable for their students' learning, and therefore meaningful to them. Once this belief is established teachers are more inclined to use ICT in their practice. Thus, CPD may be more effective if it focuses on those applications of ICT that are relevant to student learning (Ottenbreit-Leftwich, Glazewski, Newby, & Ertmer, 2010). CPD situated in workplaces, similar to the setting of this study which replicated a school's typical 'computer room', encourages people to make the decision to integrate technology into their teaching (Kopcha, 2012). Teachers themselves report on what they think contributes to a successful CPD experience; research data obtained from teachers' reflective reports by Kabilan, Adlina, and Embi (2011) indicates four main facets of meaningful professional development experience:

- envisioning of professional development
- gaining and enhancing skills
- sharing and exchanging
- socializing

Thus, if the CPD has a collaborative format, it offers multiple opportunities for sharing and exchanging personal knowledge and beliefs in ways which are meaningful to the teachers. Teacher collaboration may be encouraged through the overall design of the course and through the use of technologies such as server-based applications (e.g. a lesson planning tool offered in the course) and CMC (computer mediated communication - e.g. in the form of threaded discussions).

3.2.4 Teacher identity in CPD designs

CPD by definition entails the professional development of participants, and as much of the literature on teacher education stresses the role of identity in professional development it is not possible to ignore teacher identity when discussing teacher learning. Heidegger (1969) provides a good starting point for educational situations when he writes that one's identity can be constructed with reference to others' expectations. Hoyle et al. (1999) outline a number of self-processes which act and react together in the creation of a coherent self-system. For Orlofsky, Marcia and Lesser (1973) these processes need to change from an external to an internal locus to allow one's identity to define itself. Leary & Tangney (2003), meanwhile, talk about the capacity for self-reflection being linked to the development of the awareness of self, and Swann (1983) stresses the importance of self-verifying one's self-view as a key to identity formation. For Cohen et al. (2004) high self-worth facilitates the effectiveness of one's learning. Perhaps the most interesting observation is made by Miller (2009), who in a comprehensive analysis of field literature references to identity noted that one of the recurrent aspects was the influence of others in self-defining one's identity. If this is the case, then the process of identity formation in teachers may hinge on developing self-worth and gradually separating it from an over-dependence on what others expect and tying it to self-value systems. All of these processes are expected to be present in CPD environments which utilize self-assessment, peer observation and peer-feedback as a means to support professional development.

Considering teacher identity in CPD contexts may help to explicate the processes accompanying teaching and learning. For Wenger (1998), identity is a 'pivot between the social and the individual' and in an earlier elaboration on identity, Lave and Wenger (1991) claim that the process of one's learning revolves around the structuring of one's identity. Thus identity formation and the process of learning are closely linked and the former should be taken into account when designing CPD for teaches. Ardizzone and Rivoltella (2006) propose the existence of 'an identity challenge' that results in two new ways of re-defining teacher identity: the 'lateralisation of presence' understood as resigning from the 'central' role in the classroom, and the 'distribution of self', which they explain to be 'a system of roles' a teacher needs to adopt to meet the complexity of new ICT-enhanced classroom challenges. These challenges are indeed significant as ICT is often imposed in a top-down manner into educational contexts.

Collaboration and reflection as supported by CMC may sustain changes in teacher identity. Pachler (2007) notes that learning does affect teacher identity, and he sees effective learning as achieved through collaboration. In turn, effective learning may be a prerequisite to becoming what Westwood (2008) calls the 'effective teacher', one who is sensitive and responsive to the needs of individual students. Self-reflection may sharpen the understanding of students' needs

and create a greater desire to meet them. Tigelaar et al. (2008) emphasise collaborative reflection, as it supports the generation of deep insights which may uncover implicit beliefs and values which impinge on teacher professional identity. Collaborative reflection, though not necessarily a concomitant feature of collaboration, is nevertheless not likely to arise without it. Thus, the vectors of identity transformation are construed dialogically, by addressing both the internal and external loci of control of both teacher activities and teacher identity.

Depending on the requisite skills to be developed, different types of CPD may be offered. The course formats may have different effects on teacher identity development. Kennedy (2005) identified nine key models present in the literature on teachers' CPD:

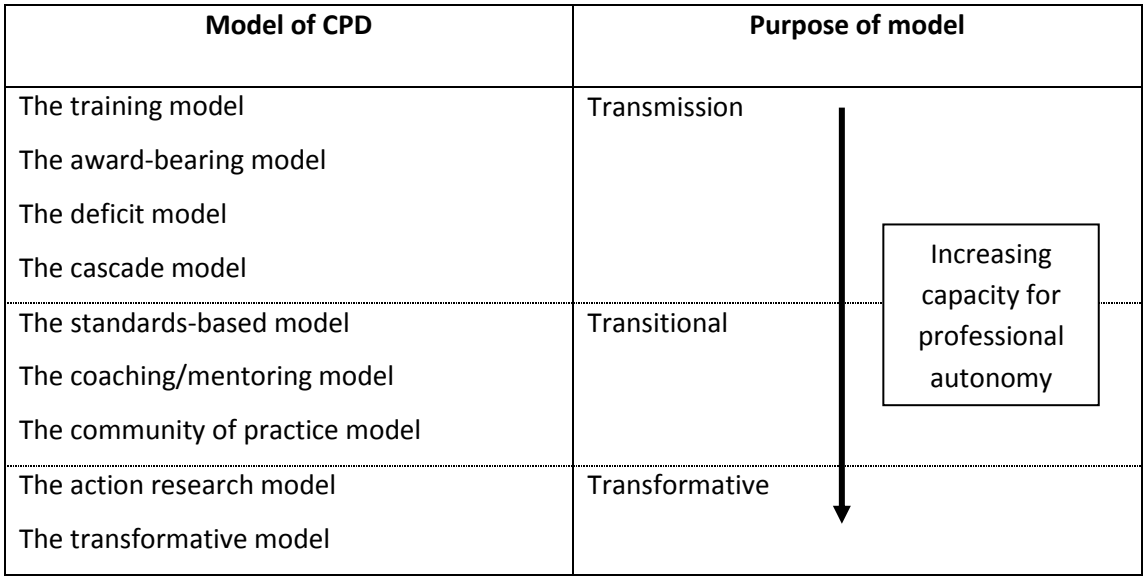

Figure 3:1: Kennedy's (2005) spectrum of CPD models

The above classification points to the capacity of CPD to support transformative practice and is relevant to this research as it demonstrates that teacher autonomy (problematised in the next section) is an important factor in CPD design. In addition, the overall design and the amount of the autonomy granted to teachers in the course places the CPD under investigation between the transitional and transformative spectrums. The course design shared characteristics with the CoP model and had the potential for the teachers themselves to shape and transform practice. This empowerment relied on a high degree of autonomy and allowed for the active shaping of teacher actions, beliefs and knowledge by both the individual and the peer group. In addition, teacher identity may indeed be structured in response to the purpose of a course model and what are the connected, perceived expectations of others towards the self. Additionally, it may be influenced by contextual factors such as the amount of autonomy granted. In this way, teacher identity transformation may be both encouraged and solidified in an environment in which peer feedback, collaboration and self-reflection via CMC are all built into CPD. However, an aspect not included in Kennedy's model is the extent to which ICT helps or hinders the move

along the transmission-transformational continuum. Technologies are not neutral and influence the contexts in which they are used (Schirato & Webb, 2003), and through their design they may promote or curtail the participants' autonomy and influence their motivation both in CPD settings and beyond them. I discuss the role of autonomy and motivation in teacher learning in the next section.

3.3 Problematising the link between teacher autonomy and teacher motivation

3.3.1 Defining and operationalising teacher autonomy

Pearson and Hall (1993) define teacher autonomy as the perception of the control teachers can exert over the environment and their own work. Autonomy has been found to be one of the central needs of teachers (Nero, 1985).It is therefore necessary to consider it carefully in both the training and work contexts. However, as Rogat, Witham, and Chinn (2014) argue, this need is not commonly addressed, mostly due to the design of the school tasks and resources. They concluded that teachers are more likely to engage and develop their autonomy if the curricular context is inquiry-based. Additionally, such an environment supports student agency. In this way a perceived level of teacher autonomy links to the level of learner autonomy experienced. However, this is not to say that teacher autonomy can be equated with student autonomy as, despite some possible similarities and links, they are independently existing concepts, and depend on the different roles assigned to learners and teachers (Barfield et al., 2001).

A particularly useful definition of autonomy is provided by Barfield et al. (2001). Autonomy is defined as a socially constructed, continual process of inquiry in which teachers engage during their professional activities. The key indication for strengthening teacher autonomy is that support must be offered both within and without institutional settings. The authors are right in stressing a pro-active character to the development of autonomy; teachers have to continually search for new solutions as they face educational problems within the boundaries set for them. As a result, both teacher and learner autonomy are re-interpreted.

Many other researchers have attempted to define and operationalise teacher autonomy (e.g. Friedman, 1999; Pearson & Moomaw, 2006; Rogat et al., 2014; Skaalvik & Skaalvik, 2014) in order to gauge its importance and the influence it may exert on teachers' practice. In a large scale empirical study into teacher self-efficacy and perceived autonomy (n= 2569) Skaalvik and Skaalvik (2014) demonstrated that teacher autonomy correlates positively with job satisfaction and engagement. These findings are also supported by earlier studies (Brunetti, 2001; Kim & Loadman, 1994; Pearson & Hall, 1993) which indicate such a relationship, particularly in the area of job satisfaction. Curtailing teacher autonomy may result in lower motivation (Dörnyei &

Ushioda, 2011) whereas, as Roth, Assor, Kanat-Maymon, and Kaplan (2007) demonstrated in a study of 132 teachers and 1255 students in Israel that, when adequate autonomy is provided, teachers are more likely to engage in self-determined teaching, which may in turn result self-determined learning (Roth et al., 2007).

Teachers must be given opportunities to interpret the level of autonomy granted to them and must understand how they can use it to facilitate teaching. Providing teachers with free choice does not automatically translate into teachers exercising autonomy. For teachers to utilize autonomy, they must be engaged in reflective practice which will allow them to recognize the potential for autonomy both for teachers themselves and their students. In addition, it is unlikely that teachers who do not experience autonomy in their training will jump at the opportunities provided to them later in their work and become self-directed, motivated practitioners. Exercising autonomy within one's practice is a skill which involves understanding how it can benefit teaching and thus be worthwhile to practice. I will next examine the role of motivation and how it may link to teacher autonomy.

3.3.2 Interrelation between autonomy and motivation

Teacher motivation is important when considering CPD designs as it has been empirically recognized as a factor influencing student motivation (Carbonneau, Vallerand, Fernet, & Guay, 2008; Christophel, 1990; Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000). However, the focus on teachers is relatively new in educational psychology, as previous work concentrated on general job-related motivation. For example, two key authors in the field of job design, Hackman and Oldham (1976), identified three main factors influencing motivation. The first, meaningfulness of the job, they argue consists of three sub-components: 1) the variety of skills to gain, 2) the completeness or wholeness of the task and 3) the significance of the task for the lives of other people. The second main factor is personal autonomy, which allows one’s own initiative and personal decision making capacity to be exercised, increasing responsibility for the job. The third factor is feedback, which allows for reflection on one's effectiveness. The above factors may be used to identify the motivating potential of tasks in teaching or CPD situations. Going further, because these factors are interrelated, designing CPD with all three may create synergy and increase participant motivation. Indeed, the meaningfulness of tasks may be more easily achieved in an autonomous situation, provided effective feedback is offered.

Other authors have proposed different components of motivation, pointing to its social dimension and attempting to explicate the processes through which tasks that are inherently non-motivating can become motivating. In their key work on motivation, Ryan and Deci (2000)

proposed that intrinsic motivation is supported by autonomy, competence and relatedness to others. Some extrinsically motivated behaviour can gradually become more self-determined provided they are internalized. This process of internalization is sustained if the environment provides support for the development of autonomy and competences. The authors propose that in order to maintain high levels of motivation among teachers, a work environment has to meet three basic human needs: feeling connected to others, having efficacy and being able to exercise agency. If these conditions are met, even behaviours which are not intrinsically attractive have a greater chance of being internalized.

3.3.3 Establishing a link to teacher self-efficacy

Another way of looking at motivation was presented by Dörnyei and Ushioda (2011) in their comprehensive review papers on teaching and teacher motivation. They identified four main motivational aspects:

1. Intrinsic component- teachers are propelled by their willingness to share knowledge and values
2. Social contextual factors- existing both at school and society levels
3. Lifelong career- career path encourages new steps of professional development
4. Powerful negative influences – various factors such as stress, limited autonomy or low self-efficacy

Of particular importance is the intrinsic component, which is closely related to feelings of effectiveness and competency. These feelings are often presented by the term efficacy, which according to Dembo and Gibson (1984) can have personal and general dimensions. Personal efficacy refers to an individual's view of themselves as an effective teacher whereas general efficacy refers to teacher beliefs about an overall ability of teachers to support student educational success.

Fives and Alexander (2004), who reviewed empirical work based on the models developed by Dembo and Gibson (1984), and Bandura (1997) identified antecedents of teacher efficacy and teacher commitment. They discovered that, among other factors, school climate, the teachers' sense of autonomy and involvement in decision making, and the stress on mastery of content over performance are linked to teacher efficacy. Thus, teacher efficacy and teacher commitment are also necessary as they also are closely related to teacher motivation, which has been proven to influence student achievement (Eccles & Wigfield, 2002). What is also relevant for this study is that sufficient self-efficacy must be established or reinforced during CPD in relation to the use

of particular technologies- especially in regard to teachers who do not routinely use/integrate ICT in their teaching. Teacher efficacy beliefs will be further explored in section 3.7.2 .

In sum, though different authors have proposed various ways of understanding motivation, what emerges from their studies is a complex and dynamic type of teacher belief which can be influenced provided the following characteristics are present:

- The context allows for autonomy in a supportive social setting
- The design of the activities incorporates feedback and promotes reflection
- The tasks to be carried are meaningful to someone's professional career or life or are a benefit to the community

A teacher may feel more motivated to carry out those tasks which feature the above characteristics. A strong sense of efficacy complements the development of motivation. Efficacy may even be conducive to motivation, spurring actions as the feeling that one wants to do something necessary is then coupled with the belief that one is able to do it and do it well. Such a combination is particularly useful in educational situations where new technologies are involved, though it also requires additional components such as Technological Pedagogical and Content Knowledge (Mishra & Koehler, 2006) and the positive beliefs to foster technology integration.

In turn, ignoring the discrepancies between how teachers see themselves and who they would like to be (Higgins' (1987) actual vs. ideal self), may lead to negative emotions and negatively affected motivation. Conversely, addressing them could either help to close the perceived discrepancy or to prepare teachers to better accept the existence of such gaps. In a CPD setting this could be achieved through uncovering these selves and defining them, comparing them with those of others and with professional standards, as well as developing discourses which process them in a way which is not threatening to professional self-worth. Addressing these discrepancies can be facilitated in environments in which teacher autonomy is supported, as it allows for freer practice and reflection.

In sum, empirical research confirms that the exercise of autonomy can help teachers develop the tools necessary for building student autonomy and, as a result, increased student motivation. This relationship is reciprocal, as motivated students positively influence teacher motivation. For example, creating CPD environments which require teachers to engage in autonomous practice, e.g. producing digital aids for their students, may help to build motivation, which can then be carried into workplaces. This could be achieved in CPD which provides rough guidelines of practice, supports the teacher's own process of discovery, accepts the results of

such work in a variety of formats, and yet still insists on adherence to subject pedagogy and high-quality results.

Teacher reflexivity in a collaborative environment is conducive to the process, as it allows for the surfacing and processing beliefs related to such practice. However, this is a daunting task as teachers lives are increasingly more controlled and limited in terms of professional choices and strict curricular guidelines. Granting significant autonomy to teachers in workplaces is rather unlikely in times of advancing de-professionalization of teaching under the guise of quality control and standardization of educational procedures. Nevertheless, recognizing the links between teacher autonomy and teacher motivation and how they may impact student autonomy and motivation is an important step towards changing the current trends.

I will now consider the relevant aspects of technology present in the study with a perspective on its collaborative and reflective character as evidenced in CMC and DV -rich settings.

3.4 The use of technology in structuring the learning and teaching environment

The value of technology in teaching has been recognised by a multitude of authors (Abbott, 2001; Beatty, 2013; Fletcher, 2003; Gitsaki & Taylor, 2000; Goodson, 2003; Hamzah, 2004; Kolodziejska, 2004; Leask, 2001; Levy & Stockwell, 2013; Mellar & Kmabouri, 2004; Moras, 2001; Nakata, 2011; Warschauer & Healey, 1998; Westwood, 2008; Zhao, 2005a, 2005b; Zhao, Smith, & Tan, 2005c). However, there are voices that call ICT an as yet 'ill-structured domain' (Mishra & Koehler, 2003) and although ICT has been widely addressed in recent years, the question of how to develop ICT teaching skills is relatively new (Reinders, 2009). The need for CPD in the area of ICT is reflected in the recent finding (Moeller & Reitzes, 2011) that only 8% of teachers integrate technology fully into their teaching. Though the level of integration is dependent on many contextual factors, the current figures are hardly satisfactory, especially considering the current saturation of educational institutions with hardware and software, both by personal devices and those provided in situ. The literature concerning the aspects of technology which were important in the course under discussion are considered below.

As outlined Chapter 4, the CPD course utilised a course website which was comprised of two major components: digital video (DV) and CMC. The first component, digital video, was embedded within the course website, and coupled the video clips (chosen by the participants) with online lesson plans, which were created collaboratively by the teachers, both online and offline. The second component, CMC, was also a feature of the course website (two threaded discussions continued throughout the entire course) and was used after each lesson was taught. In the next two sections I will look at the literature on DV and CMC as they relate to learning and teaching contexts relevant to the course.

3.4.1 Technological component 2: Computer-Mediated Communication (CMC)

3.4.1.1 Introduction

The first major component of the course website, namely computer-mediated communication (CMC) has been long valued in educational settings. The nature of the CMC present in the course at the heart of this research can be characterised as: 1) text-based, 2) asynchronous, 3) anonymous and 4) non-editable. Additionally, it featured a many-to-many interactional design allowing various forms of collaboration in the form of multi-level threaded discussions. If CMC rests on established pedagogical principles), it effectively enhances language learning processes (Hamzah, 2004). CMS as woven into the course encouraged feedback that was mutual - a type

that can help structure the learning community (Roberts, 2006) and empower learners. This claim is supported by Garrison and Anderson (2003), who conclude that if CMC is learner-centred, it allows for collaboration between the members, which to Daradoumis et al. (2006) is particularly useful if exercised in small groups since it further facilitates learning.

3.4.1.2 CMC's role in collaborative and reflective learning

According to C. Daly and Pachler (2007), collaborative online discussion as a form of CMC can have a catalytic role in developing critical thinking. Burston makes the relevant observation in the area of foreign language (FL) (2006) that in addition to developing language skills, FL learners benefit from collaborative practice in terms of their cognitive and socio-linguistic development. C. Daly and Pachler (2007) also see the potential of CMC in its capacity to support CoPs; CMC allows for greater agency to be exerted and thus fits within the constructivist framework of learning. They add that transformation and development in teacher learning take place through 'engaging with dominant discourses, professional redefinition and growing reflexivity' and that CMC can play an essential role in this process (Daly & Pachler, 2007). In a similar tone, Warschauer's (1997) sociocultural approach enhances understanding of CMC-supported collaborative learning, and sees its main advantages including heightened reflection and critical thinking.

Schön's 'reflection-in-action' (1983) portrays reflective practitioners as those who have developed an ability to distinguish effective from ineffective practice. Turner and Simon (2007) give the example of 'critical reflection', which surpasses the personal levels of investigating the self and draws on professional knowledge (2007). Outside of the individual's internal reflective processes, Richert (1990) writes that the structure of the practicum itself influences a participant's mode of reflection. As Jodłowiec (2005) admits, universities cannot offer an environment which enables teacher students to experience authentic classroom teaching, though through a peer-taught practicum we may offer a chance to explore close-to-life teaching. Thus, it would seem that CPD that allows for collaboration and reflection (enhanced by CMC) has the greatest likelihood of impacting teacher learning.

Moreover, collaboration may share a common domain with reflection. Dewey (1910) called unreflective actions a form of enslavement, pointing therefore to the need for reflective practice in education. Dewey's extreme statement in the context of teacher training was more recently addressed by Moore (2004), for whom reflexivity is the capacity to explore 'initial understandings' through various frames and discourses in order to bring them to new levels of conceptualisation. Teacher reflexivity in Moore's view is also the ability to position the self in the context of one's entire life, to connect to personal biography and to embrace what stems from

having once been a learner too. In this manner, the private and external selves are combined offering additional opportunities for more encompassing views. C. Daly and Pachler (2007) build on Moore's understanding of the 'reflexive turn', which is characterised by the ability to embrace one's emotions, and attribute the agentive role in learning to the reflexive turn.

Sometimes, CMC may take more informal forms, where colleagues collaborate spontaneously outside of an official training format. Such less-formal collaboration often leads to an increase in expertise and technological knowledge, as Galloway (1997) rightly observes. Collaborative learning is currently more familiar to teachers since, according to Mellar and Kmabouri (2004), teachers work more collaboratively nowadays than they used to as they see the benefits for their individual learning (Richards et al., 2001). Collaboration among teachers also increases job satisfaction and self-esteem (Sala, 2006). Though teachers do not always construct knowledge through engaging in collaborative practice, there are still benefits. For example, Hargreaves (1995) writes that individual practice can be juxtaposed with that of others, allowing for critical reformulations while collaboration between individuals encourages reflection on one's own practice and improves the quality of teaching and learning. When this kind of collaboration is supported by CMC, there are indications that many of these advantages are compounded. Kamhi-Stein (2000) writes that CMC used in a practicum (teaching practice) supports teacher pedagogical development and Zhao (2005a) adds that CMC may increase the critical receptivity of participants. Johnson, Johnson, and Smith (1991) note positive interdependence and individual accountability as further benefits of CMC in teacher training.

3.4.2 Technological component 1: Digital Video (DV)

The second major component of the course website, namely, digital video, (largely in the form of YouTube), was exploited as the main source of content for lessons in the CPD design offered. Video and digital video have been used in ELT classroom for many years with many authors advocating the benefits for learning and teaching foreign languages (see e.g. Dymond & Bentz, 2006; Quintero García & Vincente-Rasoamalala, 2007). In addition, as Uden and Beaumont (2006) hypothesise, video can offer a good input for problem solving and Zhao (2005a) sees video materials as offering 'natural and context-rich linguistic and cultural materials'. The value of video for language learning has been further corroborated in Weyers's (1999) study, which demonstrated that using video to teach English increases communicative competence in language students. Zhao et al. (2005c) add that digital and video technologies offer the teacher more control than other media used in education both in terms of manipulation of content and linking to other resources. Consequently, with digital video utilized as the main source of lesson content, the ensuing classes should be more engaging, allow for reflective practice and increase

communicative competence. But these benefits can only be realized if the materials and techniques are suitable for the students.

There are multiple ways to use DV which have proved to aid student language development. An effective technique for improving student comprehension in ELT contexts is digital story telling (Dreon, Kerper, & Landis, 2011; Robin, 2008), which can also serve as a versatile means of input for FL learning (Herron, Hanley & Cole, 1995). For example, soap operas have long been used with great success due to their great cross-cultural appeal and accessibility (Quintero García & Vicente-Rasoamalala, 2007). South, Gabbitas, and Merrill (2008) concur that video narrative can provide good context. However, Herron (1994) argues that in order for video input to be profitable for students it has to be structured by teachers, since viewing videos alone cannot be expected to produce beneficial results in L2 teaching. This claim is not justified, as even the unstructured exposure of students to any input, including DV, may benefit them provided it is offered at the right level. Following Krashen's (1985) model of i+1 for FL students such input should be 'comprehensible' or, as Vygotsky's (1978) model of Zone of Proximal Development (ZPD) makes clear, benefits can still be achieved with the help of 'more capable peers'. That is not to say that pedagogical structure is not necessary. For example, Herron, York, Cole and Linden (1998), in an experimental study of 67 college students, demonstrated that such structure can be achieved through incorporating Ausubel's (1968) concept of an advance organizer with the video, which results in improved comprehension scores in subsequent tests. In the above study, advance organisers constituted a task-based introduction to a topic structured in such a way as to activate students' mental schemata and help connect new information to what was already known using multimedia, thus increasing retention by fostering meaningful learning.

Some authors also point to possible drawbacks in the use of digital videos in teaching. Joyner (2003) writes that flaws of instructional design are particularly noticeable in visual and audio media. Mamede-Neves (2006) warns that the mere presence of multimedia does not guarantee that the materials are didactically sound. Gallimore and Stigler (2003) hold the view that most teachers have not realised the potential residing in the application of video technology in classrooms. Persico (2006) stipulates that video is particularly useful in raising curiosity in students but on its own is not likely to support the development of higher-order skills (e.g.. critical thinking).

Though the above claims may all be valid, in today's classroom and in teacher CPD the debate should not focus on whether to use DV but how on to use it to structure learning and teaching using the potential it offers. For example, DV also offers opportunities for teacher training; Rich and Hannafin (2009), Picci, Calvani, and Bonaiuti (2012) and McFadden, Ellis, Anwar, and Roehrig

(2014) demonstrate that video annotation techniques promote the development of reflective practices. Dawson, Dawson, and Forness (1975) conducted two experiments which showed that video recorded student feedback influenced teacher behaviour, which had a reciprocal effect on improving students' academic performance. Other researchers demonstrated the potential DV authoring has in developing critical thinking and literacy skills (Goodman, 2003; Hull, 2003). However, along with all the possible uses of DV, we should remember Miller's (2007) analyses of DV enhanced literacy practice in ELT, which demonstrated that teachers need support and structure in DV-enhanced learning environments.

Digital video has also been used in teacher education as a tool to increase reflection (Armbruster, Anderson, & Mall, 1991), to develop ESL teaching ideas (Dhonau & McAlpine, 2002), to create films by in-service teachers (Manner & Rodríguez, 2010) and to engage in digital storytelling (Thang, Lin, Mahmud, Ismail, & Zabidi, 2014). Miller (2007) postulates the use of DV authoring tools to advance teacher professional development. Video has been used and researched for some decades in various contexts, including its effects on student learning. For example, Traphagan, Kucsera, and Kishi (2010) investigated the effects of webcasts on students' attendance and learning and found out that although attendance declined actual student performance and satisfaction increased. This is somewhat perplexing observation, however, may be pointing to a shift in learning which is taken out of the classroom and into the private lives of the students, who by increased engagement and exposure to language outside of the organised settings manage to increase their performance.

3.4.3 CMC and DV's role in the ICT CPD

So far we have considered evidence that both the authentic content supplied by digital video and the potential offered by CMC may motivate peers for a stronger collaboration in ICT CPD settings. The combination of the technologies facilitates the active contribution and involvement of the course members, allowing the circulation and negotiation of ideas and hence scaffolding reflection and contributing to the development of reflective practice, leading to the feeling of greater accountability in front of other participants. Above and beyond the ability of collaboration, feedback and reflection to influence knowledge and practice, Richards and Farrell (2005) suggest that through assuming responsibility for their own development teachers can engage in self-directed learning which can trigger deep pedagogical and personal insights and possibly transform their beliefs.

Digital video offers a number of opportunities for TESOL. However, it is strictly reliant on the in-class accessibility of technological media such as computers, projectors, speakers and software

(as opposed to images which can be printed). Thus, it introduces an inherent element of uncertainty connected with its successful use. This perspective is even more important when considering novice teachers in a peer-taught CPD, as the participants' risk is higher when they perform in front of other teachers. Navigating such an environment requires mastery of the technological components involved in DV use, together with extensive content research to meet the needs of demanding peers. Hence, understanding other teachers' needs came to the fore and in collaborative contexts CMC performs a useful function, as discussed below.

Last but not least, such a combination of technologies allows the participants to structure the course in a way they find meaningful to them and their peers, which according to Kafai and Resnick (1996) is particularly effective as a training method. Considering the meaningfulness of technology-enhanced practice, four of the attributes of meaningful learning listed by Ashburn and Floden (2006) emerge as particularly viable in this research: content centrality, authentic work, construction of mental models and collaborative work. However, in the context of CPD it is authentic and collaborative work, supported by the lessons they structured utilising YouTube and then processed pedagogically with CMC, that appear to be the core of meaningful practice in this research. Thus, when teachers are granted the agency to decide for themselves, they see meaning in what aids their current learning and future practice, from the perspective of how they will be able to benefit their students. Such practice may be strengthened when peer feedback is provided and self-reflection encouraged on the basis of performance that is sculpted by the teachers themselves during post lesson CMC.

In sum, the literature indicates that despite possible drawbacks, the technologies used in the course offer a potential for aiding teacher and student development through structuring collaboration and reflection (CMC) and providing a rich input which can be processed in multiple ways (DV). Authentic and meaningful experiences offered through exposure to CMC and DV provide a good basis for the creation of more collaborative and reflective educational settings . However, the use of technology has to be carefully implemented and it needs to rest on solid pedagogical principles to bring the desired pedagogical results.

3.5 Cognition in teacher development

The role of teacher cognition must also be considered in order to portray a fuller picture of factors that have a bearing on professional practice and development, both in the classroom and during teacher training. For Golombek (2009), the study of teacher cognition is mostly concerned with understanding what teachers ‘think, know and believe’, but the extent to which these are separable is the subject of much debate in the literature, a discussion which I present

below. Borg (2006) defines teacher cognition as an 'often tacit, personally held, practical system of mental constructs'. Elsewhere he observes that the mental lives of teachers impact their instructional choices and decisions (Borg, 2009a) and notes that the affective dimension of language teacher cognition has been given very little attention in the research (Borg, 2006). He also points out that the relationship between teacher cognition and student learning remains uncertain and there is no agreement as to what types of cognition may support learning (Borg, 2006). Another central point is evidenced by Phipps and Borg's (2007) study which confirms that teachers' experiences as learners affect their cognition and these cognitions influence both teacher learning and their later pedagogical choices, a theme which I develop in the sections on teacher beliefs. Borg (2009b) lists three key factors shaping teachers' cognition: teacher learning, teacher practice and early teaching experiences. This claim would not be complete without noting that the relationship between these factors is reciprocal and the ways in which teachers think, know and believe shape their practice both as learners and as teachers.

Perhaps the most interesting study in FL teacher cognition is that of Warford and Reeves (2003). The researchers examined trainee teachers' cognitions by analysing the metaphors nine students used to talk about their conceptions of TESOL. Three categories of metaphor emerged: those for describing how students had moved into the field of language teaching (e.g. one had 'fallen into it'); those for describing the English language, mainly as a source of power (e.g. as 'ammunition' for the teacher); and those for describing English language teaching (e.g. teachers' 'blindness' to students). The trainees were also notable for the way in which they expressed their conceptions through folk linguistic theories, or adaptations of expert theories or systems. For example, the students frequently used the language of constructivism and learner-centredness to express their conceptions of TESOL. A further characteristic of the trainees in this group was their 'presentism', their inability or unwillingness to adopt an outlook on their prospective careers that transcended the day-to-day: '...very few...dared to visualise, with confidence and clarity what their in-service experience might be like' (Warford & Reeves, 2003). The authors argue that it is precisely these methods of representing trainees' conceptions of TESOL – metaphors, folk linguistic theories and presentism – which can be examined to understand pre-service teachers' cognitions.

Other studies have investigated the extent to which the beliefs and cognitions carried by trainees into their courses may or may not be subject to fundamental change. For example, Gutiérrez Almarza (1996) tracked the learning of four trainee teachers on a PGCE (Post Certificate in Education) course in the UK. The findings of this study highlight the distinction between the cognitive and behavioural changes which may be induced by teacher education programmes. In behavioural terms, all four students adopted the specific teaching methods taught in their course, in the interests of conformity to assessed standards. Cognitively,

however, the trainees varied in their acceptance of the prescribed approach to teaching. These variations were attributed to the different cognitions about language, learning and teaching they held prior to training. One student, following the completion of her training, 'saw herself free from the constraints imposed by the context of the classroom, she was back in a position in which she could continue to explore the ideas she had about language prior to the beginning of the course' (Gutiérrez Almarza, 1996, p. 69).The prior cognitions of at least some of the students were not, therefore, necessarily transformed - not that observable classroom behaviour would have given assessors any awareness of this. These considerations are significant in two highly researched areas, both of which are of interest in this study: what influences teacher practices and the relationship between teacher knowledge, teacher beliefs and teacher practice.

Teacher cognition is a key element in the debate concerning the factors which influence teacher knowledge construction and teacher beliefs. Borg's (2009a) argument that in order to really understand teachers and teaching, we must research teacher knowledge as well as their thoughts and beliefs is furthered by Burns (2009), who insists that for teacher cognition studies to offer an explanatory dimension (how and what is learned) the research needs to account for extended social contexts which reach beyond instructional and institutional environs. Therefore, ICT CPD training should involve teachers in practice which encourages realistic reflection about the potential of technology for their subject domains, while developing their knowledge and beliefs. Finally, considering the situated nature of cognition, CPD training could support the acquisition of ICT models by offering practice which closely simulates expected future environments.

In sum, it is necessary to recognize that teachers' actions are shaped by their cognition:

> A key factor in the growth of teacher cognition research has been the realization that we cannot properly understand teachers and teaching without understanding the thoughts, knowledge, and beliefs that influence what teachers do.
> (Borg, 2009b, p. 163)

Additionally, within the domain of teacher cognition it is what teachers know and what they believe that offers great potential for explicating their actions. The following sections address teacher knowledge and teacher beliefs.

3.6 Models of teacher knowledge development

This section examines concepts of teacher knowledge as shared and collaboratively constructed both within and outside educational settings. An overview of leading paradigms is presented with attention given to the field-leading construct of Technological Pedagogical and Content Knowledge (TPACK) (Mishra & Koehler, 2006).

3.6.1 Problematising teacher knowledge

The review of the literature on teacher cognition in the preceding section points to the ways in which trainee teachers gain and integrate knowledge. Of particular interest here is the line of inquiry into the formation and the characteristics of teachers' practical knowledge, a line initiated by Elbaz (1981) in a study which held that the hitherto existing conception of the role of the teacher in the curriculum was inadequate. According to Elbaz, teachers play an autonomous, central role in the shaping of curricula, rather than being a mere 'cog in the machine' (1981, p. 45). The role of teacher knowledge is characterised by the utilisation of formal, explicate knowledge, accessible to educational researchers via the study of visible decision-making processes, which was later argued by Mitchell and Marland (1989) to account for no more than 25% of teacher thinking. Proceeding from the contention that teachers' knowledge is primarily practical because much of what teachers know originates in practice and is used to make sense of and to handle practical problems, Elbaz's (1981) insights were crucial; research into teachers was at that time still dominated by the paradigm of behaviourism, as exemplified by Shavelson and Stern (1981).

Elbaz's (1981) research on practical knowledge aimed to understand the conceptions of the work of the single teacher who was the focus of the study through extensive interviews and classroom observation. The study of practical knowledge, a concept already well entrenched in anthropology and sociology by the works of Bourdieu (1977, 1979), came subsequently to be recognised as a distinct orientation in teacher research and generated the tradition of which the present study is, to a significant degree, a part. This orientation, contrasting as it does with models of teaching and research based on the decision-making and information-processing paradigm, is probably expressed most fully in the work of Clandinin and Connelly (Clandinin, 1986; Clandinin & Connelly, 2004; Connelly, Clandinin & He, 1997). Clandinin's (1986) Personal Practical Knowledge (PPK) can be seen as an extension of Elbaz's (1983) 'practical knowledge'. Connelly and Clandinin (1999) accentuate the link between knowledge, context, and identity. For them, the contexts of teachers' lives and work is essential to understanding the formation and effects of PPK, which is a narratively constructed landscape of personal life-stories.

Approaching the study of teachers through the examination of their practical knowledge is, therefore, arguably more holistic than the decision-making model, insofar as the latter 'paid insufficient heed to what one might call teachers' beliefs and repertoires of understanding' (Munby, 1982, p. 201). Munby further argued that 'all human perception is influenced by the perceivers' schema, constructs, existing beliefs and understanding' (1982, p. 206). Also highlighted by Munby (1982) was the manner in which beliefs, once established, may be resistant to change even in the face of strong evidence against them. Given the role of beliefs in human perception and, hence, in action, it is perhaps surprising that they were ignored in teacher research for as long as they were. This neglect has more than been made up for since by a long series of studies (Calderhead, 1988; Munby, Russell, & Martin, 2001; Olsen & Craig, 2005; Pajares, 1992; Shulman, 1987) in terms of its interest in the beliefs, assumptions and tacit knowledge, as well as formally learned knowledge, that trainee teachers carry with them into their training and early careers.

3.6.2 Towards the concept of teacher pedagogical content knowledge

Another model, which in addition to explaining the process of knowledge development may also shed light on its relationship to beliefs, is the construct offered by Nonaka and Takeuchi (1995). According to them, knowledge development comprises four stages: 'Socialisation' (sharing tacit knowledge), 'externalisation' (making newly gained knowledge explicit), 'combination' (injecting new knowledge into an organisational body of knowledge) and 'internalisation' (full absorption of the explicit knowledge). However, Nonaka and Takeuchi were mostly interested in organizational knowledge creation insofar as the elements of this body of knowledge is created by individuals. Knowledge is transformed from its tacit form into the explicit one and then in the last stage of internalisation again becomes tacit. Although they adopt the traditional philosophical formulation of knowledge as a 'justified true belief', they downplay the element of 'truth' and posit it as an orientation of justified belief.

But trainee teachers do not possess beliefs and practical knowledge alone. The work of Wilson et al. (1987), as it developed throughout the 1980s, is in turn an important corrective to the tendency of some researchers to neglect the role of teachers' subject-matter knowledge. With reference to Elbaz's (1981, 1983) others' work on practical knowledge, Wilson et al. (1987) argued that by emphasising the practical, and to some extent idiosyncratic knowledge that teachers use '...these researchers present a truncated conceptualisation of teacher knowledge. Teachers have theoretical, as well as practical, knowledge of the subject matter that informs and

is informed by their teaching: any portrait of teacher knowledge should include both aspects' (Wilson et al., 1987, p. 108).

The programme of research undertaken by Shulman (1987) focused on the ways in which graduate teachers transform the subject-matter knowledge obtained from their studies into knowledge that can be communicated to and understood by learners. The most influential and widely utilised concept in teacher cognition research to have emerged from this body of work is that of Pedagogical and Content Knowledge (PCK). PCK implies that teachers transform their knowledge of the subject matter into a form which makes it amenable to teaching and learning: '...it represents the blending of content and pedagogy into an understanding of how particular topics, problems or issues are organized, represented and adapted to the diverse interests and abilities of learners, and presented for instruction' (Shulman, 1987, p. 8). The form of pedagogical reasoning represented by PCK emerges, crucially, out of experience. As new teachers plan their lessons, teach, adapt their planning to meet student requirements and reflect upon their experiences, they seem to develop a 'new kind of subject matter knowledge...pedagogical content knowledge' (Wilson et al., 1987, p. 114).

Thus PCK emerges as a complex and evolving relationship between key teacher knowledge domains. Its particular advancement of our understanding lies in pointing to the role of subject-oriented pedagogies as a prerequisite to effective teaching. However, what is further explored in the section on teacher beliefs, is that any knowledge is constructed of beliefs whose truthfulness and justification are systematically verified through the process of social negotiation as they are integrated into knowledge constructs. This interplay of different types of knowledge and their overlap with beliefs justify Cohen, Manion and Morrison's complaint (2004) that the construct of what is 'important knowledge' is still fuzzy, and that new conceptualisations are necessary to encompass pedagogical ICT knowledge relevant to particular subject domains. Thus in the next section I offer a discussion of the most influential development in the area of teacher knowledge relating to technology use.

3.6.3 TPACK and its critics

Recent years have seen a growing number of innovative studies which focus on the acquisition of ICT competence and its integration into broader schemes of awareness, knowledge and practice. Perhaps the most significant of these - certainly for the current project – has been Mishra and Koehler's work (2006; Mishra, Koehler, & Zhao, 2007) on Technological Pedagogical and Content Knowledge (TPACK). Prior discussions (e.g. Lundeberg, Bergland, Klyczek, & Hoffman, 2003; Margerum-Leys & Marx, 2002) of the theoretical construct of TPCK, which essentially emerges out of PCK, have been extended and given further theoretical elaboration by

Mishra and Koehler (2006); the focus of their work is an attempt to analyse both the types of knowledge teachers require to integrate ICT into their teaching and the complex, practical and situated character of the teacher knowledge noted by Shulman (1987). They propose a conceptual framework for educational technology by building on PCK, noting as the basis of their framework that teaching draws on many kinds of knowledge.

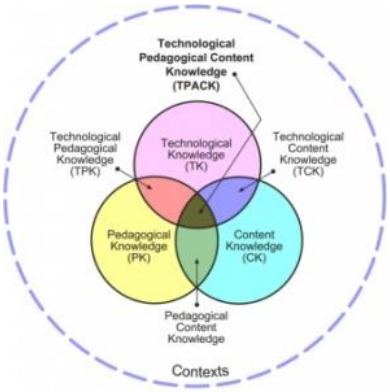

Figure 3:2: TPACK construct. Source: http://tpack.org/

Mishra and Koehler's (2006) TPACK concept has it that isolating technology, pedagogy and content from one another prevents us from understanding the nuances of their interplay. Conversely, developing this understanding helps us to fathom the relationships between the three and support the integration of technology in pedagogical contexts. Yet another understanding of CALL knowledge and skills is offered by Hubbard and Levy (2006a), who classify the interlocking aspects of technology, pedagogy and knowledge. They propose four formats for understanding these interrelations: Technical CALL Knowledge, Pedagogical CALL Knowledge, Technical CALL Skills and Pedagogical CALL Skills. They describe the latter as the 'ability to use technical knowledge and experience to determine effective materials, content, and tasks, and to monitor and assess results appropriately' (Hubbard & Levy, 2006b, p. 16). This extends Mishra and Koehler's (2006) TPACK by adding an element of skill as a prerequisite to the active integration of technology into teaching. In addition, a useful summary of different theoretical developments of TPACK has been synthesised by Voogt, Fisser, Pareja Roblin, Tondeur, and van Braak (2013) into three strands: 1) TPACK is an extended form of PCK, 2) TPACK is a distinct body of knowledge, and 3) TPACK represents the interplay of different domains of knowledge in specific contexts.

But TPACK has been around long enough to have received other critiques and suggestions for further development. Graham (2011) directly challenges TPACK by pointing out that multiple studies suffer from the lack of a clearly-cut delimitation between the discrete elements of the construct; though the model offers the prospect of studying dynamic changes in the transformation of various knowledge integrations, it does not fully address the scope of the domains of knowledge as such. He proposes two possible improvements: 1) clarifying the

boundaries between the constituent parts of the framework, and 2) establishing clearer justifications for each constituent of these parts. Moreover, the conceptual basis which led to the development of TPACK itself may contain some uncertainties. Gess-Newsome et al. (2003), building on Schulman's (1986) PCK, confirm that knowledge and expertise are situated in the learning context and are therefore not easily transmitted to new contexts.

Another powerful critique is provided by Angeli and Valanides (2009), who point to the fact that it is not clear whether TPACK growth should be treated as a separate development of each of its elements or should rather be treated as a distinct form of knowledge. Their complaint is aligned with that of Graham (2011), in that the adoption of what is argued to be a theoretically imprecise framework may lead to misconceptions concerning the integration of technology in education. Angeli and Valanides (2009) propose an elaboration of the model in the form of ICT-TPCK, referring to technology as a 'cognitive partner' and calling for closer consideration of teachers' knowledge and experience prior to introducing attempts to develop their TPACK. They write:

> ICT-TPCK can thus be defined as the ways knowledge about tools and their affordances, pedagogy, content, learners, and context are synthesized into an understanding of how particular topics that are difficult to be understood by learners, or difficult to be represented by teachers, can be transformed and taught more effectively with ICT, in ways that signify the added value of technology. (Angeli & Valanides, 2009, p. 66)

Nevertheless, TPACK remains a leading construct for understanding teacher knowledge in pedagogical contexts and the findings of this research tally directly with Angeli and Valanides (2005, 2008, 2009) as far as the following propositions regarding TPACK are concerned:

- Specific (content-related) technological training helps the growth of TPACK
- Enhancing the knowledge of T, P or C alone does not equal furthering TPACK
- Technological and pedagogical skills and experience do not guarantee successful integration of technology into teaching and learning.

Over and above a focus on the classification of knowledge, one remarkable gap in particular becomes conspicuous in the current paradigm of TPACK, as Angeli and Valanides (2009, p. 64) rightly observe:

> Also, the framework in its present form does not take into consideration other factors beyond content, pedagogy, and technology, such as, for example, teachers' epistemic beliefs

about teaching and learning that may be also important to take into account. This simplified or general view, one might argue, may lead to possible erroneous, simplistic, and naïve perceptions about the nature of integrating technology in teaching and learning.

In addition, the complexity of teaching in today's classroom is increased by the rising expectation that teachers should routinely engage in the use of technology. But on the teachers' personal level, knowledge and skills alone are not sufficient, even in an environment in which hardware and software obstacles have been alleviated. Integration of technology adds to this complexity due to the fact that as Golombek (2009) writes, teachers' knowledge is derived from their own learning experiences. One could stipulate that very few of today's teachers have had learning experience of the type that is broad and inspiring enough to support their own ICT use.

(Borg, 2006) states that the primary focus of research in the area of teacher development is understanding teacher knowledge, while the body of research addressing teacher cognitions, beliefs and values is relatively small. If these teacher attributes are brought to the fore, they may allow for a greater and more nuanced multidimensional understanding of teacher actions in pedagogical settings. This understanding is particularly important as it should inform the ways in which teachers are trained, in an effort to build pedagogical skills and knowledge with a perspective on their beliefs. In this way, Somekh's (2007) observation that teacher knowledge about teaching is mostly 'tacit and related to individual values and beliefs' may be addressed more directly through such courses as account for both the knowledge and beliefs. Hence, the following sections discuss the role of beliefs and their link to knowledge and practice in ICT-rich settings. Most importantly, a significant gap in the literature is identified.

3.7 Problematising the concept of 'teacher beliefs'

Many disciplines have attempted to conceptualise beliefs, with the proliferation of attempts in philosophy, sociology, psychology and other domains. Beliefs have been present in social science and pedagogical literature under many guises, taking many names and multiple conceptualisations. Thus, it is not surprising that educational research is also attempting to unify and clarify the terminology and key characteristics of both teacher beliefs and teacher knowledge, especially as they are frequently conceptualised as sharing common domains. Though it is not the aim of this thesis to attempt to unify various belief constructs, it is nonetheless essential for the purpose of the literature review and subsequent analysis that core aspects of beliefs are defined and key distinctions from knowledge are outlined.

When the field literature addresses teacher learning, a transformation in teacher beliefs and values is often brought up as a requirement of changing practice and developing teacher knowledge. But the active transformation of beliefs needs to be preceded by first understanding their content and the influence they may exert on teacher actions. As Garton observes (2008), understanding teacher belief systems is central to understanding their actions in classrooms, and teachers with different beliefs and resultant approaches to teaching are likely to display different, yet effective, classroom behaviour. Borko and Putnam (1996) indicate that addressing teachers' knowledge and beliefs can be done through allowing reflection and collaboration, which contributes to successful teacher learning. In addition, a change in teacher and student beliefs along with their expectations is a prerequisite for bringing greater effectiveness to education (Burston, 2006). Indeed, the work of Gallo et al. (2001) points to teacher beliefs as the core of teacher development and hinges changes in practice on changes in beliefs. And although all teachers bring beliefs and experiences into their training (Motteram & Slaouti, 2006), changing them in short training sessions might not be feasible (Wong & Benson, 2006). This research, however, undertook to investigate the beliefs of teachers involved in a two-semester ICT CPD course - a time long enough to offer scope for change.

Literature is abundant in the characteristics of beliefs and many attempts have been made to capture and describe aspects of teacher beliefs. Studies often present what may appear as contradictory characteristics. Yet it is possible that beliefs may bear seemingly exclusive features which in fact are complimentary and can be activated by different sets of circumstances. This tendency has been noted by Gabillon (2012) in his comprehensive review of the literature on L2 teacher beliefs, in which he pointed out the complex characteristics of teacher beliefs, stating that:

- L2 Teacher beliefs are personal and social
- Teacher beliefs are practical and theoretical
- Teacher beliefs are implicit and explicit
- Teacher beliefs are dynamic and resistant
- Teacher beliefs are complex and systematic

This classification helps us to understand the challenges of attempting clear-cut conceptualisations of beliefs. If they are indeed as dualist in nature as presented here, the difficulty in determining what teacher beliefs are is well understandable - let alone differentiating them from various types of teacher knowledge.

In a similar vein Pajares (1992), reviewing research on teacher beliefs, called it a 'messy construct' that requires careful re-conceptualisation and clarification. He noted that what is studied in research as 'teacher beliefs' normally denotes 'teacher educational beliefs'. To

streamline the research in the area, he called for the use of to specific terms for each different set of beliefs, e.g. teacher efficacy, epistemological, locus of control, motivation, self-esteem or beliefs about specific domains or subjects (Pajares, 1992) within the range of teacher educational beliefs. This is well justified as a number of terms have been used in the literature to refer to beliefs, e.g. attitudes, judgments, values, opinions, perceptions, conceptions, explicit and implicit theories (Pajares, 1992) and beliefs, which are often interwoven with other mental constructs such as expectations and knowledge (cf. Sarac, 2013).

Apart from a proliferation of terms referring to beliefs, what further adds to the elusiveness of what teacher beliefs are is their dynamic formation and development (Borg, 2006). However, the recognition of the roles played by beliefs such as the ones portrayed above can reshape professional development standards and practices (Gess-Newsome, 2003, p. 324). For example, Bondy et al.(2007), who were researching a group of 14 teacher students, demonstrated that understanding their beliefs may help improve the quality of university instruction and eventually affect teacher learning. Thus, understanding what their earliest formations were and acknowledging that teacher students do not arrive at their training as a tabula rasa is of great importance to teacher educators. Earlier, a good attempt at conceptualising belief formation in teachers was offered by Lortie (1975) in that his 'apprenticeship of observation' refers to a phenomenon whereby teacher students begin their training already having strong, yet tacit and intuitive beliefs about teaching and learning. Their beliefs are grounded in their own experience as learners and evaluators of their teachers' efforts. Other authors also confirm that past experience as a learner is often brought into teachers' practice in the form of beliefs (Nespor, 1987). Schooling experience in particular is often brought up as a key factor in shaping beliefs about teaching and learning (Albion & Ertmer, 2002; Borko & Putnam, 1996; Richardson, 1996).

In sum, the challenges of achieving a unified conceptualisation of teacher beliefs are indeed significant and are mostly due to the complexity of belief structures and by the divergent terminology used in the field. However, teacher beliefs, both the ones brought into teacher educational settings and the ones developed in them, have been confirmed to have bearing on the way teachers engage in their practice. Consequently, understanding what precipitates changes in teacher beliefs is of crucial importance, as it may inform teacher education curricula, including CPD.

Among various types of beliefs teachers hold about teaching, two categories of belief have garnered particular attention in educational studies, namely epistemological beliefs and efficacy beliefs. The following two sections present and discuss the findings on these two types of belief. The role of other types of beliefs will be addressed in the section on the role of beliefs in technology - enhanced practice.

3.7.1 Teachers' epistemological beliefs

Research into personal epistemologies adds to our understandings and the structure of effective teacher education (Brownlee & Berthelsen, 2008). Epistemology is concerned with the nature and justification of knowledge (Hofer & Pintrich, 1997) and epistemological beliefs can be defined as beliefs about 'the nature of knowledge and the processes of knowing' (Hofer & Pintrich, 1997, p. 117). They are important as, together with motivation, they can undergird changes in other beliefs (Griffin & Ohlsson, 2001). Epistemological beliefs underlie knowledge interpretation and comprehension processes (Kitchener, 1986; Nespor, 1987; Schommer, 1990). Research on epistemological beliefs can shed light on how teacher students interpret their educational programmes (Pajares, 1992), can relate their beliefs about learning (Chai, Teo & Lee, 2009) and can also influence teaching practices.

An interesting study in the field was conducted by Yadav and Koehler (2007), who demonstrated that teachers who hold more relativistic views of knowledge tend to be more constructivist in their teaching, whereas those who believe in the objective nature of knowledge are more likely to engage in more traditional formats of instruction. However, holding objectivist perspectives on knowledge does not guarantee the subsequent use of a constructivist approach (Chan & Elliott, 2004). This finding was challenged by Yilmaz and Sahin (2011), who probed the epistemological beliefs of 490 pre-service teachers in Turkey and found that teaching practices correlated with epistemological beliefs, and in the case of the studied group their practice was mostly constructivist in nature. Understanding students' and teachers' perspectives on knowledge helps understand learning and teaching (Hofer & Pintrich, 1997) and these insights are valuable in structuring teacher education. .

Perry (1970), in his seminal work on Harvard undergraduates, proposed that development in epistemological beliefs happens through four stages: 1) dualist, 2) multiplist, 3) relativist and 4) committed relativist. In essence, the stages involve starting with a perception of knowledge as binary, i.e. right or wrong, followed by allowing some uncertainty about knowledge, then to acknowledging the uncertainty of knowledge and its context-dependency and finally arriving at a perspective where, despite taking a certain stance, a person recognizes that there is uncertainty and a lack of evidence. In turn, Kitchener (1986) identified seven stages of how people develop beliefs about knowledge, claiming that they develop in an organised, sequential way. The difference between the first stage and the last is rather significant as in stage one a person starts with the notion that their belief represents the truth regardless of the lack of justification and rejects other competing beliefs. However, by the time the last stage is reached, their beliefs have evolved through accepting a possible challenge from an authority figure, through justifying

the belief from limited and selective evidence, through considering multiple perspectives, only to arrive at the notion that beliefs form probabilistic, yet justified approximations with complex and uncertain evidence, in stage seven.

Developing this work, Kuhn and Weinstock (2002) provided a more concise model which traces the progression of epistemological beliefs. People develop their epistemological beliefs throughout their lives, starting from assertions which are copies of reality (realist epistemology) through assertions which are correct or incorrect facts (absolutist epistemology) to assertions which grant everyone the right to hold their own opinion (multiplist epistemology) and finally to assertions which are based on different aspects of a given issue (evaluativist epistemology). In summary, various attempts to capture and describe how epistemological beliefs develop share a common ground by conceding that in most cases the nature of belief is initially somewhat monolithic and in the form of a strong construct that is resistant to challenge but then evolves towards a less rigid configuration.

Schommer (1990) proposed that different epistemological beliefs are in fact a constellation of beliefs which operate independently within a spectrum. She identified three core epistemological beliefs concerning 1) complexity, 2) certainty and 3) the source of knowledge, claiming that each of them could be independently stronger or weaker. Later, she proposed that beliefs relate to 'the source, certainty, and organization of knowledge, as well as the control and the speed of learning' (Schommer, 1994, p. 293). In her experiment, Schommer (1990), aiming to capture the influence of epistemological beliefs in students, observed that beliefs had the capacity to change the information one is exposed to in an attempt to remain intact. This observation was further extended by Griffin and Ohlsson (2001) who, through their empirical study, also demonstrated that when people are presented with conflicting beliefs, they are less likely to change the ones which are affectively loaded, despite the evidence against them. The results of both of these studies support Moscovici's (1984) theory of social representations discussed in section 3.9 and indicate the resistance of old beliefs to change or replacement by new ones.

Hofer and Pintrich (1997) in their review of educational research on epistemological beliefs proposed a unifying construct comprised of four aspects: certainty of knowledge, simplicity of knowledge, course of knowledge and justification for knowledge, claiming that such a delineation would allow greater consistency in subsequent research. They also provided a useful distinction between epistemological beliefs and beliefs about learning, pointing to the fact that the latter pertain only to how people learn ideas rather than what it entails to know. In other words, the beliefs about the processes of learning are separate from the beliefs about the nature of knowledge and knowing. It is worth noting that epistemologies are also domain

specific (Hofer, 2000), so ESL teachers are likely to have their own conceptions of knowledge within their field. Aspects of these can exist concurrently yet with different strengths (or levels of certainty) and can change as one's knowledge develops (Hammer & Elby, 2003). Luft and Roehrig (2007), probing the epistemological beliefs of 100 science teachers from three categories (pre-service, induction, and experienced) observed that though shifts occur, they are normally not significant. In contrast, Chai, Teo and Lee (2009), analysing mean differences in epistemological beliefs of 413 students in a teacher preparation program, noted significant changes in beliefs about the certainty of knowledge, and about the authority/expert as a source of knowledge. A shift also occurred in their beliefs about learning, with more subjects valuing natural abilities over effort in contributing to educational progress.

Finally, it is beyond the scope of this research to review tools which were developed in order to determine teacher epistemological beliefs, e.g. Schommer's (1990) Epistemological Belief questionnaire. However, theories on personal epistemologies constitute an important facet of our understanding of the foundations of teacher educational beliefs and add to our knowledge of how they develop.

In sum, the research in the field shows that epistemological beliefs should be considered in view of particular subject domains. In addition, personal epistemologies guide teacher actions and change with developments in other areas (e.g. teacher knowledge). However, their change is neither instant nor frequent as these beliefs possess self-protection mechanisms which allow them to resist change despite evidence presented or even to distort the understanding of the evidence to remain intact. Though, as research shows, our capacity to influence them may be limited, recognising what beliefs teachers hold about knowledge and knowing is essential as these beliefs regulate not only other beliefs but also teacher actions. Another type of belief frequently addressed in the literature is that concerned with self-efficacy which I discuss in the following section.

3.7.2 Teachers' efficacy beliefs

The interest in efficacy beliefs was initiated over four decades ago with the work of Bandura (1977) and Gibson and Dembo (1984), Multon, Brown, and Lent (1991), and was continued by Pajares (1996) and Zimmerman (2000). Initial interest in the possible link between self-efficacy and academic attainment strengthened as self-efficacy was found to mediate academic achievement (Zimmerman, 2000) and influence career choices (Bandura, 2001). In his seminal work, Bandura (1995) calls personal self-efficacy beliefs the most central mechanism of personal

agency. Self-efficacy is best developed by mastery experiences as they provide solid evidence of people can achieve what they intend (Bandura, 1995). The remaining three sources of influence proposed by Bandura (1995) are 1) vicarious experiences (social modelling), 2) social persuasion, and 3) psychological and emotional states (e.g. fatigue, mood). Bandura (1995) points to the key role efficacy plays in regulating affective states and motivation, which indicates that strong self-efficacy beliefs can help teachers in achieving their pedagogical goals through their conviction that their efforts will not be futile and these goals can be reached.

In an empirical study Detchon (2006) used Bandura's (1977) ideas when conducting research involving 13 teachers to find out what beliefs they display towards students with attention problems. She concluded that the construct of self-efficacy, understood as a perception of their ability to promote the educational performance of students, relates to the beliefs teachers hold rather than their experience or educational qualifications. This observation is important as it indicates that teachers, regardless of their background or local limitations, are more likely to navigate the environment to the individual benefit of their students if they believe that their students are capable of achievement, and that they as teachers are able to assist them in that achievement. In another large empirical study of 877 teachers in Singapore designed to assess the alignment of teacher beliefs to classroom practice, Sing et al. (2008) indicated that self-efficacy beliefs may guide teachers' classroom practice.

For efficacy to be supported beyond the personal level, contextual factors must be accounted for and the role of agency has to be recognized. Goddard, Hoy, and Hoy (2004) elucidated teacher choices regarding the exercise of their personal agency by investigating whether the greater the agency, the more likely collective efficacy beliefs are reinforced. They demonstrated the relevancy of ‘collective efficacy beliefs’ (understood as ' the conjoint capability of a school faculty' (Goddard et al., 2004, p. 4) to orchestrating teacher practice. They also suggested avoiding the term 'teacher efficacy', and instead using terms that indicate the actual *perception* of efficacy rather than efficacy itself, to avoid confusion with teacher competence or performance. Thus they suggest terms such as 'teachers' perception of efficacy', 'efficacy judgements' or 'sense of efficacy'. They claim that strongly perceived collective efficacy may have an enhancing influence on the level of individual teachers' self-efficacy judgements. As we see, there is evidence that efficacy beliefs are formed and exercised within the social and contextual dimension of a teaching situation. Thus, one might expect that collective efficacy is shaped more readily during a CPD context that is collaborative in nature since the ‘public’ sharing and attainment of goals is more explicit in such environments.

Levels of self-efficacy in teachers are also seen to be important for their students’ pedagogical success. Uden et al. (2013), in analysing data from a survey of 195 teachers, discovered that

teachers rated their students as more engaged when their self-appraisal of self-efficacy was higher. Hence, it was demonstrated that teacher self-efficacy correlates positively with a perception of higher student engagement. Such students, if they choose a teaching career, can then positively influence their own students, e.g. by having a conviction about their ability to promote educational change. This was partially confirmed by Löfström et al. (2010) in a study of 565 Estonian teacher students regarding their reasons for embarking upon a teaching career. They found that within emerging teacher identities, beliefs about becoming pedagogical experts and change agents were key. This demonstrates that even career choices are likely to be influenced by the level of efficacy one experiences. Later, once on a teaching career path, teachers with stronger self-efficacy are willing to go to greater lengths to individualise the process of learning (Detchon, 2006).

As with epistemological beliefs, the relationship between teacher practice and efficacy is two-way: beliefs influence practice, and practice can support reflection and provide reasons to form or re-shape beliefs. In an effort to verify Bandura's (1997) notion that self-efficacy is strengthened or weakened depending on whether the task was completed successfully or not, Lee and Lee (2014) confirmed in a study of 136 teacher students that self-efficacy beliefs for technology integration (SETI) improves through coursework. But not only that; self-efficacy also shapes teachers' career choices and influences the way they perceive their students. In another attempt to verify Bandura's (1997) hypothesis about the sources of self-efficacy (Britner & Pajares, 2006) conducted a study with 319 students and found that mastery experiences are the best predictors of academic self-efficacy and academic achievement.

Other elements of Bandura's theory (1997), i.e. vicarious experiences, social persuasions, and physiological/emotional states were proved to be closely correlated with self-efficacy (Britner & Pajares, 2006) and thus can also be factors influencing self-efficacy as summarised below:

- Vicarious experiences –(i.e. social modelling) is more effective if the groups are of similar advancement, as weaker students can more readily relate to the stronger ones.
- Social persuasion- (i.e. significant others) is effective for building self-efficacy if it is appropriate, honest and realistic. Unless these criteria are met, persuading students that they have the ability to achieve certain goals may have a reverse effect.
- Psychological and emotional states- high levels of anxiety or negative arousal lowers the chances of developing positive self-efficacy beliefs. The role of teachers is then to lower levels apprehension among their students.

If we extend the above findings to teacher ICT CPD training, it suggests that optimal programmes would provide the practitioners with an ample number of mastery experiences in the field of educational technology use. In order for self-efficacy to be developed, language teachers should be given the opportunity to complete tasks which guarantee a low failure-rate yet provide a clear sense of achievement. In addition, if there are no 'authority figures', such CPD would be conducted collaboratively as this mode yields more opportunities for social persuasion in the form of CMC feedback in the planning stage as well as after the class has been taught. Finally, the entire learning process should be scaffolded in an understandable way to teachers in order to lower affective barriers and allow for more risk-taking.

In sum, developing a sense of high self-efficacy hinges to a large extent on whether pedagogical tasks were successfully completed and whether teachers have gained mastery experience. The research indicates that self-efficacy increases academic achievement and encourages more student-centred actions by gearing teachers towards greater individualisation of teaching. Finally, self-efficacy can be also experienced collectively by a group of teachers in a given context.

Apart from epistemological beliefs and self-efficacy beliefs, other types of beliefs that teachers hold have received a considerable degree of attention in the literature. Many of these beliefs concern various aspects of practice and some are specifically tied to practice within technological environs, e.g. what teachers think of technology, how they see its value and effectiveness, and how they conceptualise challenges connected with technology use. The following three sections take this discussion further and consider relationships between beliefs and knowledge, beliefs and practice and beliefs and technology practice.

3.8 Considering links between knowledge, beliefs and practice

Any attempt to define beliefs and delineate them from knowledge should be accompanied by establishing links between these constructs. Understanding these links is important as it can help explain how beliefs guide teacher practice in general and in ICT -enhanced settings.

3.8.1 The link between beliefs and knowledge

Conceptualising teacher beliefs and teacher knowledge is one thing, but establishing how they relate is yet another. One of the first definitions which attempted to differentiate knowledge from beliefs was provided by Plato, who called knowledge 'justified true beliefs'. Since then, the proposition has been challenged and extended by many philosophers, with most notable

contributions provided by Kant, and more recently also by social science researchers- e.g. by Gettier (1963), Dretske (1971) and Nozick (1981). The difficulty in making a delineation between beliefs and knowledge is often due to the limited access to any human mental constructs, as they cannot be directly observed and the research data is often perceptual and gathered through participants' reports and observations of their practice.

Many authors hold that beliefs and knowledge are interconnected (see Woods & Çakır, 2011), with some researchers promulgating the view that beliefs and knowledge do not exist as discrete units which can be studied separately (e.g. Fennema & Franke, 1992). What adds to the difficulty of separating knowledge from beliefs is the fact that they are normally not exhibited singly or in a clearly delineated way but are often present in the form of interconnected networks. For example, in a study investigating the interplay between the knowledge and beliefs of 183 maths teachers, Blomeke et al. (2014) confirmed their overlapping and interlocking relationship and noted that teacher education can foster constructivist beliefs by placing more emphasis on developing their pedagogical content knowledge. Such observations are important as they suggest that, by influencing a chosen pedagogical aspect during teacher training, other (less easily addressed) student beliefs can also be influenced.

The view that beliefs exist in interdependent clusters was put forward by Green (1971) and Speer (2008). Consequently, if this is the case beliefs might be better differentiated from knowledge via a set of characteristics rather than one single criterion. In this regard, perhaps the most useful way to characterise beliefs was sketched by Abelson (1979). He proposed the following seven features: 1) Elements of beliefs are non-consensual, 2) Belief systems often refer to the existence or nonexistence of certain concepts, 3) Beliefs often propose 'wished worlds', i.e. desired circumstances as different from the actual ones, 4) Beliefs are constructed with regard to evaluative and affective components, 5) Beliefs often contain fragments of personal experience, 6) Belief boundaries are open and belief systems are resistant to clear delineation from other concepts, and 7) Levels of certitude can differ between beliefs. From this perspective, it is more practical to talk about 'belief systems' rather than stand-alone beliefs. What appears to be the most tangible differentiator of belief systems from knowledge systems is the fourth characteristic listed above, i.e. their subjectively evaluative aspect, which can take on an affective dimension for beliefs which are more subconscious (Cf. Pietilä & Pehkonen, 2003), a view advocated by Nespor (1987) who writes that beliefs carry a greater load of affective and evaluative aspects.

Another useful conceptual model for understanding the difference between beliefs and knowledge was provided by Griffin and Ohlsson (2001). They suggested that the main distinction lies in knowledge being understood as a representation of a proposition and beliefs being

understood as representations of the truth-value of propositions. In their view, beliefs pertain to subjective and personal knowledge, and determine the acceptance or rejection of the truth-value of a proposition or even the abstention from pronouncing the truth-value of a proposition. However, both conscious and subconscious beliefs (Pietilä & Pehkonen, 2003) are concerned with assessing reality and often rely on affective processes (Abelson, 1979). A more unifying conceptualisation is offered by Abelson (1979), who claims that beliefs can be understood as knowledge manipulated for a specific aim and under a particular set of circumstances.

Recent recognition of the importance of teacher beliefs is exemplified by an increasing number of publications regarding the role of beliefs in technology integration. However, there have not been many direct attempts to operationalise beliefs and knowledge together as far as technology is concerned, especially in the subject domains outside mathematics. Yet one of the concepts that could be readily applied to any EFL technological setting is the beliefs, assumptions and actions construct (BAK) (Woods, 1996). In his view, beliefs entail a number of concepts, e.g. attitudes, values, conceptions and practical knowledge, which are present in the literature as discussed above. He states/claims that his BAK conceptualisation gives emphasis to a dynamic relationship between its three parts during the processes of interpretation, decisions and actions undertaken by teachers. BAK could be used to describe how individual teachers' experiences develop their beliefs and knowledge as they engage in technology-enhanced practice.

In sum, the following emerges as important when considering the links between teacher beliefs and knowledge:

- Beliefs often exist in clusters and may feature elements of knowledge.
- Beliefs and knowledge are interconnected and overlapping.
- Unlike knowledge, beliefs refer to the truth aspect of a proposition (mostly subjective) and may rely on affective or evaluative aspects.

Thus what emerges is the personal, complex and interpretive dimension of beliefs which rest somewhere along the evolving continua sketched in the preceding sections (e.g. Kuhn & Weinstock, 2002; Perry, 1970; Schommer, 1990). Being so closely related, it is not inconceivable that is some instances beliefs may be indistinguishable from knowledge. In addition, such beliefs function in fact as a class of interim constructed knowledge which is operational and pragmatic in nature.

The following two sections discuss the link between teacher beliefs and technology-enhanced practice in educational settings.

3.8.2 The link between beliefs and practice

Kane et al.(2002) reviewed fifty papers on the relationship between espoused theories of action (i.e. beliefs) and theories-in-use (i.e. practice) in tertiary academics. They proposed a unification of the terms and conceptualisations concerning teacher beliefs and noted that the body of reviewed research emphasises the role of beliefs in teacher actions. However, they also observed that the explicit links have not been well-conceptualised and studies often fail to provide elucidations that would clearly benefit novice teachers' practice. These links often relate to espoused beliefs (often constructivist) and enacted actions (not necessarily constructivist).Indeed, in the view of the indications of the relationship between beliefs and practice, a more comprehensive conceptualisation of the relationship is needed. A number of empirical studies support both sides of the argument with a marked sway towards the argument that beliefs indeed influence practice.

On the one hand Deng et al. (2014), in a study of 396 Chinese high school teachers, found that aspects of teachers' epistemic beliefs, constructivist pedagogical beliefs, and constructivist use of technology aligned, confirming other studies conducted in the region. In a different major study of 490 pre-service teachers in Turkey, Yilmaz and Sahin (2011) also observed alignment between practice and constructivist ideas. This relationship was too observed by Luft and Roehrig (2007) in 100 teachers and by Richardson et al. (1991), who also noted that changes in beliefs often precede changes in practice. It needs to be noted, however, that certain forms of practice are often enforced and the above finding is more applicable to settings in which changes in teaching practice are gently encouraged. Nevertheless, in a study of 12 K2 teachers, Ertmer et al. (2012) confirmed the critical relationship between belief and practice, claiming that student-centred beliefs undergirded student-centred practice. At the same time they observed that a discrepancy between the declared beliefs and practices might stem from contextual obstacles, e.g. a limited access to the resources. Research confirms, then, that teachers are not able to implement their ideas when they face obstacles in their work settings. However, they may have false beliefs about such limitations and nevertheless choose to align their practice with these invalid beliefs.

However, teacher actions are also guided by their perceptions of what benefits their students' progress. This relationship was observed by Speer (2008), who proposed that the clusters of beliefs relating to the evidence of student understanding and student learning have a particular effect on shaping teacher practice. In a study of six intern science teachers Rozelle and Wilson (2012) found that cooperating with other teachers strongly influences practice and induces

change in beliefs. They also noted a shift in the beliefs towards those of their mentors (regardless of how successful they were).

On the other hand, in a large study of 1139 primary-school teachers in Taiwan, Shih-Hsiung Liu (2011) pointed to the fact that even teachers who held learner-centred beliefs did not engage in constructivist teaching with ICT. Similarly Chen (2008), in a study of 12 Taiwanese high school teachers, found considerable inconsistencies between teacher beliefs and teacher practice that stemmed from limited or inadequate knowledge, among other factors. Other empirical research has confirmed inconsistencies between beliefs and practice (Chen, 2008; Hallett, 2010; Raymond, 1997; Tragant, 1996). The reasons for the misalignment offered by the above studies are usually given as external or contextual factors such as classroom management or government directives. Chen (2008) provided a more complete explanation by pointing towards teachers' incomplete theoretical understanding or other conflicting beliefs.

A partial explanation for the above divergence may rest in the results of a study of pedagogical beliefs of four science teachers in Egypt (Mansour, 2013), which demonstrated that the belief-practice alignment was closer when the teachers held more traditional beliefs and more divergent when they held constructivist beliefs. This divergence could be further explained by the teachers' pedagogical uncertainty as evidenced by Snider and Roehl (2007), who discovered in their study of 360 K-12 teachers that the majority of teachers were mixed, undecided or balanced about their pedagogical stances. Consequently, if teachers' more natural stance is closer to a traditional approach, i.e. relying more on transmission-based models of education, it is easier for them to align their practice to their beliefs than it is in the case of more recently adopted constructivist ideas. Though Snider and Roehl (2007) indicated that teachers were mixed as far as their pedagogical stance is concerned, one could assume that the possible uncertainty did not start with the teachers being fully immersed in their constructivist pedagogy only to start moving towards a more traditional one.

In sum, literature points to the fact that beliefs undergird practice and practice is often aligned to beliefs if contextual factors allow it. Quite importantly, inconsistencies between beliefs and practice may stem from a lack of adequate knowledge to allow practice. This means that practice based not on knowledge but on beliefs is possible. In addition, literature shows that teachers are often not clearly set in their pedagogical beliefs and that practice follows beliefs more frequently in teachers who are less constructivist in their approach .

3.8.3 The link between beliefs and technological practice

Goodson and Sikes (2001) view the nature of education as very personal, interactive and relationship-based. However, to maintain meaningful processing of the content presented, the technical tools need to be exploited in a way that will not detract from the value of content as seen by the participants of the course. Yet technology can, of course, also be mis-introduced. Henriques (2002, p. 6) rightly says that 'educators get so caught up in the technology that we lose sight of the content'. If that happens, it is not possible to realise Nistor's (2003) proposition that teachers' roles focus on evaluating, adapting and creating new learning material. However, beliefs are not the only influence on professional practice, as much depends on the localised setting. Burns (2009) confirms that context is key to shaping teacher beliefs, though she concedes that declared cognitions or beliefs do not necessarily need to be aligned with the actual practice.

For the purpose of this research, establishing perspectives on the relationship between beliefs and technological practice is crucial. As mentioned earlier, teacher beliefs are not often conceptualised in research under such clear sets as, e.g. epistemological and self-efficacy beliefs. However, teachers still need to interpret technologies and use them in ways that are congruent with their pedagogical beliefs (Scrimshaw, 2001). Teachers hold beliefs about all aspects of their profession, but for the purpose of this research the key questions are 1) whether beliefs have any bearing on technology integration, and if so, 2) what kind of beliefs facilitate successful implementation of technology in teaching. In general, the current body of research in the field has provided indications that those teachers who see value in technology were also more likely to provide their students with opportunities to experience technology as users. Ertmer et al.(2012) in their study of award-winning technology-using teachers (n=12) confirmed the enactment of technology practices as congruent with the teachers' beliefs, which they called 'true gatekeepers'. Henderson and Braday (2008) in a longitudinal study of five academic teachers confirmed that pedagogical beliefs influenced teaching practices in a web-enhanced setting and Koptcha (2012) in a study of 18 teachers' perceptions of the factors inhibiting technology application confirmed that beliefs are one of the five key categories identified.

Hew and Brush (2007) analysed studies from 1995 to 2006 which reported empirical research findings. They classified 123 barriers to integrating technology in teaching into six major categories: 1) resources, 2) knowledge and skills, 3) institution, 4) attitudes and beliefs, 5) assessment, and 6) subject culture. Teacher attitudes (conceptualised as whether somebody likes or dislikes something) and beliefs (understood as premises that are held to be true) were confirmed as guiding factors in teachers' decision-making regarding technology use. Beliefs

alone were the third most frequently mentioned barrier in the reviewed studies (after resources and knowledge/skills). If the teachers failed to recognise the value and relevance of technology in implementing the curricular requirements and in improving students' skills and knowledge, they usually refrained from using it. Hew and Brush (2007) also investigated the strategies offered in the studies reviewed which were intended to overcome barriers. They found that the most frequent suggestions for changing attitudes and beliefs were securing institutional support (e.g. providing resources, organising CPD, and encouraging teachers) and reconsidering assessment to align technology with curricular standards. Interestingly, they observed that although subject culture was brought up as a factor determining ICT use, i.e. not being a standard practice in a subject, the studies did not suggest any specific recommendation on how to address this issue.

Factors preventing technology from being used was investigated by Ertmer (1999), who indicated that there are two types of barriers in integrating technology by pre- and in-service teachers: 1) external (i.e. first-order barriers, e.g. technical skills and availability of necessary resources) and 2) internal (i.e. second order barriers, e.g. teacher pedagogical beliefs about students' learning and the value of technology). Elsewhere, Ertmer et al. (2012),in reviewing the literature on overcoming these barriers, discovered that the first order barriers had been significantly decreased by 2006, yet the second order barriers had not, possibly as they pose a more significant challenge. To facilitate technology integration, Ertmer and Ottenbreit-Leftwich (2010) identify four key variables in teacher change: knowledge, self-efficacy, pedagogical beliefs, and subject and school culture. They bemoan the fact that, despite more the widespread use of technology in teaching, a lot of the actual use is very basic and does not explore the potential of advanced features of technologies. They stress that even teachers equipped with adequate knowledge and beliefs still need to test how particular technologies work in practice to benefit their students. They propose changing teachers' mindsets by encouraging them to embrace the notion that 'teaching is not effective without the appropriate use of ICT resources to achieve student learning outcomes' (Ertmer & Ottenbreit-Leftwich, 2010, p. 278). What emerges from the above studies is a picture of educational engagement with ICT that acknowledges the key role beliefs play in helping teachers integrate technology, yet it has little to offer in the way of well-defined strategies to resolve this issue.

Many other empirical studies have attempted to capture the interplay between beliefs and ICT-rich practice. Yeung et al.(2012) studied a sample of 323 pre-service teachers in Singapore, who had to use digital technologies in their teaching to meet ministerial and curricular requirements. The aim of the investigation was to determine the relationship between how the teachers responded to the formal requirements and how they personally valued technology and used it in their teaching. The findings indicated that the teachers' compliance in using ICT negatively

correlated with their technological competence and did not correlate with frequency of technology use. Technological competence was not a guarantor of technology use, as the teachers who used technology most frequently were the ones who both were competent in it and also saw clear value in using it. Thus, Yeung et al.(2012) suggested that teachers' use of technology would increase if they could see the effectiveness of technology practiced in the classroom which, according to them, could be supported by raising the technological competence of teachers.

In a study of 357 Swiss secondary school teachers, Petko (2012), using the WST ('will, skill, tool') framework developed by Christensen & Knezek (2002), concluded that ICT application is more common when teachers believe that computers will help student learning. Previously, the WST model was used with 39 teachers in the USA as a successful explanatory tool in understanding when teachers use technology. The model's key elements are will (computer-related attitudes), skill (technology competence) and tools (technological tools and access to them). Again, as evidenced both by the framework and the research, beliefs constitute a central role in ICT implementation. This said, it becomes clear that where teachers place value determines their pedagogical actions-also their use of technology. To illustrate this point, it is useful to look at Gudmundosdottir (1990), who confirmed that teachers are guided by their own values and their understandings of students' instructional needs. One of the key variables identified by Muller et al. (2008) from the analysis of ICT integration among a group of 389 teachers was their beliefs connected with the use of computers as an instructional tool. Thus successful teaching with technology increases the belief that one is in control and is able to enhance student learning with the use of technology.

However, practice can sometimes change while beliefs remain the same. A good example is provided by Orlando (2013), who in her five-year study of teachers' practices observed that while ICT use became more widespread in teacher practice, this development was not accompanied by a constructivist change in core teacher beliefs, and as a result, their practice remained teacher-centred. Wessel (2000) claims that constructivist teaching is not dependent on technology nor more easily achievable with technology. This view is supported by Wang (2002), who also discovered that teachers in a classroom with computers maintain their pedagogical approaches (teacher- or student-centred) from a non-computer setting. Thus, teachers may not be using the proclaimed constructivist potential of ICT simply because they do not hold constructivist beliefs in the first place. Of relevance here is Deng et al. (2014),who elucidate the ways in which epistemic beliefs influence pre-service teachers' engagement with technology; teachers holding more relativistic views are more likely to use technology in a constructivist manner in their practice, whereas teachers who are more aligned with the

transmission concepts of knowledge are more likely to engage in behaviourism-based tasks such as drilling.

As demonstrated earlier, the interplay between practice and beliefs is not clear (Errington, 2001, pp. 28-32). Despite this, teacher educators still need help in recognising and understanding their own, their peers' and their students' beliefs. Accordingly, working out the values and beliefs held in relation to technology in educational settings appears to be of particular importance for teacher educators. Personal beliefs and technology-related experiences greatly influence teachers' education and teacher education must account for the ways in which technology is present in teachers' personal lives as well as 'engage tomorrow's teachers as whole persons' (Ching et al., 2005, pp. 225-226). Ching et al. (2005) also suggest that determining where teachers place their personal values with regards to technology helps in harnessing these particular technologies for pedagogical use.

In summary, beliefs that reassure teachers that technologies are conduits to student learning and achievement promote the use of technology in educational settings. However, the link between beliefs and practice is a complex one and may be promoted in the following situations:

- Teachers believe that technology bears relevance to student learning (Ertmer et al., 2012)- sample: 12 K12 teachers
- Teachers see value in technology, i.e. believe technology promotes learning (Ottenbreit-Leftwich et al., 2010)
- Teachers holding student-centred beliefs enact student-centred curricula despite other barriers (Ertmer et al., 2012)- Sample 12 teachers

In addition, the following emerge as important:

- The level of experience correlates with the belief about usefulness and the frequency of use (Efe, 2011)- sample: 448 teacher students
- The institutional dimension has a great effect on the individual dimension of teachers' attitudes (Perrotta, 2013)- sample: 683 teachers
- Beliefs exhibited towards students about their achievement can be internalised by the students (Bamburg, 1994)

What is worth reiterating is the fact that ICT competence does not directly translate to ICT integration. This further confirms that focus on skills and knowledge alone may not be sufficient to ensure ICT use and that beliefs are a necessary component.

3.9 Changes in teacher beliefs

A good starting point is considering the status of teacher beliefs on the teachers' entry to educational courses. Thus, of particular importance is the knowledge and beliefs that teachers bring to the educational setting from outside. Mainstream educational research has shown that, at the start of teacher education programmes, students may have inappropriate, unrealistic or naive understandings of teaching and learning (e.g. Brookheart & Freeman, 1992). This point is illustrated in the field of second language teaching by Cumming (1989), who examined trainee teacher's beliefs about curriculum and concluded that these were inadequate as a basis for coherent and effective programme design in ESL for a number of reasons: in terms of the relationships the students posited between theoretical and practical issues, the way different components of the curriculum were related, and the relative emphasis they placed on particular components. Brown and McGannon (1998) identify two beliefs among a cohort of ESL trainees which were clearly inadequate as the basis of effective pedagogy: languages were learnt mainly by imitation, and errors were mainly due to first-language interference. Urmston (2003) also identified beliefs among pre-service trainees that were unlikely to provide a solid platform for successful and effective classroom management and pedagogy; there was, for example, a prevalent belief that teachers should be the learners' friends.

Many researchers investigating the factors that change teacher beliefs are convinced that teachers arrive for their training with pedagogical beliefs already in place. Nishino (2012), in his research of 139 Japanese in-service high school teachers, found that their beliefs were influenced not only by their learning experiences but also by their in-service training and contextual factors. Nevertheless, once developed beliefs, especially core beliefs, do not change easily (Brownlee, Purdie, & Boulton-Lewis, 2001; Schommer-Aikins, 2004). Through her three year study of 146 ESL teacher students Peakcock (2001) indicated that beliefs, especially beliefs about second language learning in teacher students, are resistant to change. Polat (2010), studying a group of 90 pre-service teachers over one semester of their training, also confirmed that any change in teacher beliefs about aspects of pedagogical work (e.g. creating instructional materials) was not very common. Similarly, Lim & Chan's (2007) study of single short pedagogical interventions found that they did not significantly influence teacher beliefs. So is any significant change in beliefs possible at all?

Though the literature asserts that deeply held beliefs do not change easily, such change is nevertheless feasible, e.g. through practice or training which has been confirmed by empirical studies (Luft & Roehrig, 2007; Raturi & Boulton-Lewis, 2014). Also Funkhouser and Mouza (2013) discovered that change in technology-related beliefs occurs as a result of training. By analysing the reflective blog entries posted during a training course, they observed a shift from teacher-

centred to a mixed teacher-centred/student-centred approach in the participants' beliefs. As demonstrated in their study, the collaborative aspect of technology came to the fore and the capacity of ICT to enhance learning remained in the background. In addition, Fang (1996), in reviewing the literature, concluded that professional development involves changes in teacher beliefs. In particular, as Yeşilbursa (2009) found, observing peers offers new perspectives on the teaching challenges encountered. The benefit is bi-lateral as she reported that peers who were observed also made new discoveries about their practice. But observing alone may not suffice.

Kumaravadivelu (2013) claims that teacher beliefs need to be constantly re-evaluated as one of the prerequisites of successful teaching. He argues that teachers need to understand their own beliefs to successfully educate their students and develop as teachers. He proposes that in order to understand the link between knowledge and beliefs, teachers rely on their reflections concerning their own beliefs. If one accepts that the main source of belief formation is life experiences (Nespor, 1987; Rokeach, 1970), it is reflection on these experiences that can be helpful in instigating changes (Richardson, 1994, 1996). Resnick (1987)and Albion and Ertmer (2002) add further suggestions by revealing that exposing teachers to alternatives to what is deeply ingrained in their practice helps them re-structure their beliefs. In ICT-enhanced contexts, development of beliefs may be encouraged through regular collaborative reflections. e.g. via CMC (such as threaded discussion) or Wiki, which allow for the juxtaposition of various perspectives and as a result allow teachers to develop their personal epistemologies (Marra & Palmer, 2012). Similarly, Williams and Kelly (2006, p. 122) write that online discussion can support teacher development and support positive changes in teacher beliefs. This is likely to be possible, as Linn and Slotta (2006) explains, as a collaborative forum helps participants support reflection.

Many other authors also confirm the role of reflection in altering belief structures in teachers. Pennington (1996) suggested that lowering the affective filter in teachers facilitates the integration of new ideas into their value systems and practice. She asserts, referring to Krashen's theory of second language acquisition (1982), that allowing reflection and offering necessary guidance in how to structure and conduct reflection is a particularly useful strategy for lowering cognitive-affective filters. This view is confirmed by Freeman (1991) who, in his longitudinal study of in-service language teachers, found that in order to implement change in their practice, teachers must first learn to articulate and share discourses about their thinking. In other words, the process of transforming teacher beliefs from implicit into explicit is suggested as a prerequisite of them taking control of their professional development. In more recent studies on teacher beliefs (Borg, 2011), the emphasis has been on the reciprocal and bi-directional relationship between the process of education and the shaping of teacher beliefs, confirming the potential of a constant self-examination of one’s beliefs. Borg also writes that one way of doing

this is through verbalising beliefs in order to examine them through existing theories while differentiating them from practices and theoretical knowledge.

Sometimes, as Gebhard (2009) indicates, teachers need to develop beliefs about teaching practice, only to discard them later. This is a desirable process; teacher beliefs and practice need to be constantly adjusting in relation to the new conditions of the environments encountered. A further elaboration on the optimal conditions for belief change is provided by Pajares (1992, p. 321) who writes that:

> Beliefs are unlikely to be replaced unless they prove unsatisfactory, and they are unlikely to prove unsatisfactory unless they are challenged and one is unable to assimilate them into existing conceptions

If he is right, one goal of ICT CPD teacher education would be to unsettle teachers' long-held beliefs by, for example, exposing them to conditions in which these beliefs would have to be identified, verbalised and challenged. Once a number of their previously espoused beliefs proves unsatisfactory, new beliefs could then be developed in their place, provided they work to comprehend the content. But teachers need not abandon their beliefs during their teacher training, even if they prove inadequate in a given situational setting. What often happens is they integrate new knowledge and beliefs into the existing ones (Cabaroglu & Roberts, 2000; Freeman, 1993). The view that this process is facilitated if new aspects relate to the old ones is grounded in the seminal work by Moscovici (1984), who in his theory of social representations posited that when new beliefs are formed, conflicts are always resolved in favour of the existing beliefs. The incorporation of new beliefs into old ones happens though a process termed anchoring (adding a new belief to the existing category) and through objectification of the unknown concept by making it more concrete and therefore familiar.

In sum, the research shows that teachers arrive in their training with many pedagogical beliefs already formed. Sometimes, these beliefs can be oversimplified representations of the encountered educational realities. During their training, teachers need to re-evaluate their beliefs and CMC can be helpful to this end. Changes in beliefs are supported through self-reflective evaluation. In addition, creating tensions through negotiation of beliefs can further support their change, which as evidenced in the literature, is not easy though possible. It requires promoting greater explicitness in their articulation, and connected to this, developing adequate discourses which allow for their processing. This can be achieved in environments which support individual and shared reflection and which teachers consider safe.

Thus, making changes to teacher beliefs is a challenging endeavour, both in theory and in practice. It is worth noting, however, that just as beliefs can influence practices, the reverse is

also the case (Borg & Phipps, 2007) and beliefs may be put to the test by teacher practice and as a result be verified, updated or rejected. It would be naive to assume that beliefs remain in an unchanged form throughout an entire teacher training programme and in a subsequent career.

3.10 Presenting key literature insights and identifying the gap in the literature

This section aims to synthesise the above review, contextualise it in CPD and identify the gap in the literature which this research aims to fill.

3.10.1 Key literature insights

The literature discussion above problematised the link between teacher motivation and teacher autonomy, indicating that in a CPD context, autonomy may spur motivation, particularly when the model of teacher development is more aligned to constructivist ideas and offers transformative potential to the participants. However, it is not enough to merely offer autonomy to teachers, as they need to interpret it in order to gauge its potential for their work settings. These considerations are important, as experiences of teacher autonomy motivation regulate the levels of learner autonomy and motivation, setting up a reciprocal relationship.

The research context necessitates consideration of the technology and its role. Despite some drawbacks, technology has generally been empirically established as a useful extension to teaching and teacher training. Of the two technologies discussed in the literature review- DV and CMC - it is CMC that offers the empirically established potential to encourage meaningful practice, as it promotes reflection and collaboration in CPD environments. If a peer-teaching element is added to an established CMC routine focussed on pedagogical actions, such CPD has a greater chance to impact teacher learning as it provides the closest experience to authentic classroom teaching. In turn, digital video has also been proven to advance teacher development with its potential to engage teachers and learners in a number of tasks, contributing to professional and language development. If classroom activities use teaching material that is appealing in its form and content, both being potential premises of digital video, meaningfulness of practice can be strengthened both in CPD and schools. As a result, teachers and their students may more readily engage in self-directed and reflective learning.

CPD that supports self-reflection through its design (e.g. through elements such as autonomy, collaboration, peer-teaching, CMC, engaging DV content) sustains changes in teacher identity. Teachers' training, as well as their jobs, constantly exposes them to challenges which force them

to question their professional selves. Demands for and expectations of integration of an ICT into teaching constitutes a considerable challenge for many teachers, consequently causing them to question their professional self-worth and re-structure their professional identity in the face of digital challenges. Teacher identity is, as we have seen, often construed in relation to the expectations of others and self. As a result, teachers exist in a constant tension between who they think they are professionally, and who they would like to be, both in relation to their own aspirations and the expectations of others. CPD can be used to help teachers conduct this internal dialogue by providing exposure to other teachers' thoughts, beliefs and experiences. To do so, the CPDs must be explicitly structured to support teacher meta-cognitive processes and to allow the circulation of ideas about knowledge and beliefs in emotionally safe environments. Once this meta-cognitive discourse is developed and circulated in a collaborative and reflective environment it is easier for teachers to understand their own professional stances and the foundations of them. Hence, teacher knowledge and beliefs come to the fore in explicating teacher actions.

3.10.2 Identifying the gap in the literature

Below I consider the gaps in our understanding of teacher beliefs and knowledge in the light of CPD contexts as synthesised above.

Though the literature confirms the link between beliefs and practice (see e.g. Bruning, Schraw, & Norby, 2011; Collinson, 1996), and in consequence student learning (Orton, 1996), many other issues at play influence teacher behaviour and beliefs (see e.g. Fennema & Franke, 1992), which may explain why many studies only establish correlation-based findings. There is also a marked tendency in the research reviewed to assume, if not expect, that teachers will teach in constructivist ways in technology-enhanced settings, whereas technology by nature does not frame actions in a constructivist or non-constructivist way. Technology does not usually impose a particular teaching approach and the framing is usually decided by teachers as guided by their beliefs and contextual factors. Teachers who see value in technology will implement it and they may manage to apply technologies which by their design are non-constructivist in a constructivist learning experience.

One gap in the literature concerning the TPACK construct is that it rarely is applied to particular and specific subjects (content knowledge area). Voogt et al.'s (2013) comprehensive review of 55 peer-reviewed journal articles on TPACK, which were published between 2005 and 2011, noted that only a few studies tried to analyse the meaning of TPACK within a concrete subject domain and only one study dealt with the foreign language specific domain. Their analysis

yielded six studies which attempted to address the relationship between TPACK and beliefs, all of which confirmed that pedagogical beliefs influence whether and how teachers integrate technology. Their recommendations concern the development of TPACK bases for particular subjects, starting with an analysis of how technology use has already been conceptualised for these domains, then furthering research on the interplay of knowledge and beliefs and, finally, developing tools to assess its growth among teachers. In a similar vein, when examining factors that influence TPACK, Koh et al. (2014) found that articulating pedagogical beliefs and their implications facilitates development of TPACK. Thus Mann's (2005) claims that a reflexive relationship between teacher knowledge and beliefs is sustained by collaboration and cooperation appears to be particularly pertinent, as it points to the need to investigate a new direction in CPD.

Considering qualitative TPACK studies, a significant amount of effort has been invested in many studies attempting to capture and describe interrelationships between knowledge domains. Only scarce attention has been devoted to a possible relationship between TPACK development as influenced by teacher beliefs and in the Polish context such studies are practically non-existent. In addition, there is an as yet unexplored specific niche regarding what belief-based barriers exist in TPACK formation and in particular what role beliefs may play in overcoming these barriers in subject specific domains such as TESOL. As there are many research-based indications that beliefs and knowledge occupy overlapping domains, it is therefore justified to examine how the leading explanatory construct of teacher knowledge interplay (TPACK) relates to teacher beliefs within particular subject-related technological settings.

Though the empirical literature on teacher beliefs, knowledge and their relationship to actions is not decisive, the presented empirical results from studies into teacher beliefs and knowledge generally support a positive relationship between them, and in most cases confirm that they may guide teachers' actions. Thus, many consider teacher pedagogical beliefs as the key to teacher action and crucial for the successful integration of technology into the classroom (Ertmer, 2005; Najdabbasi & Pedaste, 2014). Despite some divergence in the research results discussed in the previous section, the role of beliefs, especially epistemic and self-efficacy beliefs, has generally been confirmed and points to their influence on teacher decision making processes. However, the question of whether and how self-efficacy beliefs or epistemic beliefs link to pedagogical, technological and domain-specific knowledge still needs to be explored. In addition, the question that has not received enough attention is how to conceptualise other teacher beliefs in ICT rich settings so that theoretical and practical recommendations can be offered for teacher ICT CPD, with the aim of influencing subsequent teacher practice.

In sum, the literature confirms the importance of teacher pedagogical beliefs, but at the same time it does not explicitly address whether and how the integration of technology is regulated by these beliefs. Moreover, the empirical literature often does not consistently support a unified view of how beliefs change, are changed, influence or are influenced in technology-rich contexts. Also, a significant proportion of studies do not adequately address the reciprocal character of the belief-practice relationship. A majority of the studies focus only on the impact of beliefs on practice. Borg, who significantly contributed in the field of language teacher cognition, writes that 'to understand what teachers do, if we want to promote change, we also need to look at beliefs' (2012, p. 88). In addition, If, as Zheng (2009) maintains, the goal of teacher education should be geared towards structuring beliefs which are conducive to teacher change, one of the key first steps is to conceptualise these beliefs in such a way to enable educators to process and design teacher education with a view towards shaping beliefs.

Consequently, this thesis sets out to make a contribution to this end by offering an original analysis and establishing a perspective on the content of cognition. A particular focus is set on teacher beliefs and to the extent it emerges, knowledge, within ICT CPD in a TESOL context. Hence, this study intends to contribute to our understanding of how an ICT CPD course influences the professional development of FL teachers and what role beliefs play in the process. In addition, there have been only limited attempts to capture the influence of ICT CPD training on teacher beliefs relating to technology use, and though previous researchers have focussed on beliefs, the majority of studies have been conducted in the science domain with modest contributions in TESOL. Consequently, another gap this study aims to address is a frequent lack of practical recommendations for actions which should be taken in order to engage teachers in such belief structuring and for change that promotes technology integration in the TESOL domain.

4 CHAPTER 4: METHODOLOGY

This chapter begins with the presentation of the research questions and the background to their formulation and their fit in the chosen method. Next, a justification for choosing Grounded Theory is presented, showing the iterative process of the study. The reflective account of the research process is offered and the issues of bias and limitations of the study are accounted for. Sections 4.5 and 4.6 offer a comprehensive description of sampling of the participants, data collection design and processing the data. The processing of the online questionnaire is identified as the key stage in the process of data analysis as it allowed a more coherent conceptualisation of the emergent categories. The chapter concludes with the ethical considerations related to the design and conduct of the research. Due to the limits in the scope of the thesis, some key information concerning the research tools and the analysis process has been reserved for the Appendices. The following Appendices are of particular importance for this chapter:

- Online lesson planning form (backend) - Appendix II
- Features of the online lesson planning tool (frontend) - Appendix III
- Presentation of data characteristics - Appendix V
- Research tools - Appendix VI
- Raw data samples - Appendix XIII

4.1 The research questions

Background to the research questions

In order to meet the requirement of a professional doctorate (EdD), I located the main research question in my practice which focuses on ELT teacher training and pedagogical technology. The main research question, which resulted from my professional concerns as both a teacher of English and a teacher trainer, crystallised during this experimental course and through the process of engaging with the data and the literature. The question was initially motivated by the substantive finding of the Institutional Focus Study (IFS) related to trainees' classroom use of ICT: that novice teachers lacking pedagogical ICT certainty adopt a stance of 'presentism' as a strategy to avoid integration of ICT into their teaching. I commenced this research with a deliberately overarching exploratory question aiming to investigate what happens when a group of ELT teachers are asked to peer teach in an ICT CPD course. However, following my data processing and the literature review the questions developed to obtain their final shape as presented below in this subsection.

The literature review pointed to the role of teacher cognition as affected by teacher training. Through the process of refinement of the research questions and the focus of the study I examined teacher beliefs and teacher knowledge as evidenced both in the literature and in the results of the study. Thus, the research questions aimed at teasing out the cognitive processes the participants use to determine what constitutes real value for their professional practice. Formulated in this way, the research questions fitted within the recommendation of GT and thus guided the research process, dictating the selection and analysis of data. The categories emergent from the study of the research question (see section 3 of Appendix XI) were used to examine the applicability of, among others, the following: TPCAK (Mishra & Koehler, 2006), teacher cognition, teacher beliefs, collaboration, reflective practice and pedagogical ICT. Having chosen Grounded Theory as my methodology, I explored how the leading concepts within it are contested and positioned myself in the theoretical battlegrounds. As a result, I adopted an application of the methodology that is congruent with the view that reality and knowledge are socially constructed and subjectively experienced.

The research questions

GT procedures were useful in addressing an initially broad exploratory question in the setting, namely, what happens when ELT teachers are engaged in peer teaching in the ICT CPD setting. However, as the engagement with the data and the literature pointed towards the developments in teacher beliefs and knowledge , the focus of the main question narrowed and two sub-questions derived from the main research question were added.

Main research question:

- **How does an ICT CPD course influence the professional development of TESOL teachers?**

The above question is broad and encompasses a number of elements, data analysis and literature review data and literature pointed to two more delineated foci:

Two sub-questions:

- **What are the developments in the teachers' knowledge and practice?**
- **What are the teachers' beliefs regarding their practice in a technology-rich setting?**

It is important to note that this research did not aim to establish a cause-and-effect relationship between introducing technology and its effects on language acquisition. Consequently, it is not possible to say on the basis of the conducted analysis whether language proficiency outcomes were clearly higher due to attending the course. Instead, I was interested in what kind of

practice emerges in this environment and to what extent it results from the design of the ICT CPD course.

The role of the literature review in the formulation of the questions is crucial. Iterative, rather than, as recommended by GT procedures, delayed literature review (discussed below) proved essential in developing questions which raised from both from the identified gap and remained focussed on the highly local and specific environment studied. Given the context, my professional and academic concerns are inseparable and the research questions have practical implications for my practice. To a lesser extent they concern the efficacy of allowing teachers to decide the content and form of the practical English and TESOL classes with a strong element of technology. More central is the role of teacher beliefs and knowledge and the extent to which the classes promote the development of practice. Obtaining answers to the above allows for improvements in my practice at a professional level, at an institutional level (adding to on-site peer ICT CPD practice design), and to contribute to the theoretical field of TESOL teacher training by extending what we know about the teacher beliefs and related concepts in technology-rich TESOL environments.

4.2 Introduction to the reasons and justifications for choosing Grounded Theory

One advantage of Grounded Theory (GT) for this research setting is that it sets out to 'comprehend' the research situation (Dick, 2002), so that the resultant delineation of phenomena can reveal multiple facets, delivering a more inclusive and unforced theoretical account. As Borgatti (2005) remarks, this type of research takes 'a case-oriented perspective', the underlying assumption being that 'variables interact in complex ways', making it, I believe, a justified choice for my first attempt as a novice researcher to study a familiar environment. As a tutor and a researcher, I was immersed in the setting and needed a method that, through its clearly prescribed procedures of coding and analysis, would make my personal bias explicit and limit the imposition of pre-conceived notions. The Grounded Theory method thus helped me distance myself, at least to some extent, from my subjective views and from the everyday milieu of the Institute and, as Clough and Nutbrown (2003) propose, 'make the familiar strange' in order to engage with the data from a new perspective. I started to seek answers to my research questions using the participants' viewpoints rather than an external objective account and Grounded Theory allowed me to collect data from the mostly subjective accounts of the participants. Thus, applying a constructivist approach within the GT exploratory research setting offered an investigatory model for a setting that was familiar to me.

Silverman (2006) points out that data do not present things as they are but make claims. This idea might be especially apt when assertions about a setting are derived from others' opinions about that setting. However GT, with its systematic handling of data, offers a useful tool in a research situation where the majority of the data come from the participants' reports (interviews and questionnaires) and their CMC exchanges, rather than from direct observation and comparison of the indicators chosen, e.g. at the commencement and conclusion of the research.

My decision to choose GT was later validated by the fact that the data gathered did not confirm what I assumed would be the central role of ICT in the course. Cognizant of the lack of corroboration of personal theories I had formulated during my time at the Institute, I followed the GT procedures (described in detail in section 4.3), letting the data shape the emergence of the initial categories (see section 3 of Appendix XI). GT accommodated changes in the scope of the research and proved a valid instrument for explicating the processes relating to the growth of professional practice in young teachers of English. Thus, the focus of the research changed with the discovery that I held implicit notions about the role of technology and its application in the setting and had unknowingly made them a focal point of the study. However, the data yielded surprisingly little information relating to technology, a fact which moved the focus towards the ways in which participants developed a teaching model, changed their professional beliefs and extended their pedagogical skills and knowledge. In essence, the development in focus took place on the interface of technology and pedagogy, with teacher beliefs surfacing as one of the key categories influencing the workings of the others. I interpret this as confirmation that Grounded Theory served as an effective method, as it was the rich data that guided me towards the categories I finally developed (see section 5.1), thus preventing the adoption of any preconceptions I might have brought to the familiar settings.

Grounded Theory procedures are also the most appropriate for the research questions as they focus on the processes accompanying the phenomena under investigation. Some of these processes included the personal teaching-related experiences influencing professional practice and the trajectories of belief and knowledge construction. Thus I settled on Grounded Theory as a method for indentifying the ways in which the trainees experienced and constructed their undertaking to develop as competent practitioners. This methodology, with its insistence on a detailed level of ethnographic analysis and its capacity for expressing findings which are extremely faithful to the data, was best suited to uncover the situated complexities encountered by the trainees and to produce well-formed abstractions out of the realities of their lived experience.

With the wealth and breadth of the data obtained, professionally relevant conclusions emerged, allowing for both a theoretical contribution pertaining to teacher beliefs and their relationship to knowledge construction and a practical recommendation for organising effective pedagogical ICT teacher training sessions.

Of the available approaches I refer to briefly in Appendix IV, I also selected GT for its capacity to handle some of the inter-subjective, constructed, and frequently implicit processes through which trainees constitute themselves as professional teachers. Neuman (2000) rightly says that GT can be useful in explicating the micro-processes of social interactions. In that sense, GT offered a opportunity to produce abstractions applicable beyond the researched context. GT also helped me to bring to the surface relational categories and concepts such as teachers' pedagogical knowledge and profession-related beliefs and values, and elucidate the importance of teacher professional development in the course.

The next section follows with the debates surrounding the use of GT, presents its procedures and offers a further justification for its use.

4.3 The Grounded Theory method

What follows is a brief outline of the GT recommendations as used in this research.

Overall, throughout this research I adhered to the principles presented below and I document this process in the sections covering processing and coding the data, i.e. sections 4.5 and 4.6.

The general principles of Grounded Theory analysis have survived a long process of refinement and, at times, heated discussion within the field (Charmaz, 1983; Glaser, 1978; Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1994). They have been listed more recently by (Charmaz, 2006, p. 5) as follows:

1. Simultaneous involvement in data collection and analysis
2. Constructing analytic codes and categories from data, not from preconceived logically deduced hypotheses
3. Using the constant comparative method, which involves making comparisons during each stage of the analysis
4. Advancing theory development during each step of data collection and analysis
5. Memo-writing to elaborate categories, specify their properties, define relationships between categories, and define gaps

6. Sampling aimed towards theory construction, not for population representativeness
7. Conducting focussed literature review after the initial analysis

The foundational works of Grounded Theory are those of Glaser and Strauss (1967), Glaser (1978, 1992, 2002) and also those of Strauss and Corbin (1990, 1994) which are presented as refinements and elaborations of the method. Most of these include accounts of the schism between Glaser and Strauss, which constitutes a disagreement over whether to allow data and theory to truly 'emerge' (Glaser, 1992) or to be channelled into well-defined coding paradigms (Strauss & Corbin, 1990). Charmaz (2000, 2006) applies a constructivist spin to Grounded Theory; when a researcher studies the environment of their work, an explicit focus on their positionality comes to the fore. Adopting this perspective brings a focussed investigation to bear on the roles of the participants and the accompanying processes and phenomena.

> The advantage of constructivist grounded theory lies in the fact that you try to make everyone's vantage points and their implications explicit – yours as well - it helps to remain clear about antecedents of your theory and helps others establish the boundaries of usefulness (Charmaz, 2006, p. 184)

Though there is no complete consensus on what actually constitutes Grounded Theory, in essence it tries to explicate a process by analysing the intentions and strategies of the involved parties (Dey, 2007). But Grounded Theory must also take into account the influence of the positionality of the researcher (Lempert, 2007). A researcher using Grounded Theory cannot even rely on established or apparently obvious concepts (Holton, 2007). Consequently, what constitutes a key advantage of the method could be seen as a serious hindrance as a grounded theorist is invariably required to retrace their steps to previous stages, which with the amount of data gathered for this study, was a significant challenge.

Burawoy (1998) positions Grounded Theory clearly within the positivist spectrum, a claim which Charmaz (2006) rebuts, writing that Burawoy does not account for the constructivist potential of Grounded Theory. Charmaz in turn offers an extension of the original concepts proposed by Glaser and Strauss, proposing the 'constructing' theory rather than 'discovering' it (2006) and explicitly stating that in fact any theoretical rendering offers an interpretive portrait of the phenomena studied and not an exact depiction of it. Grounded Theory can be understood, in this way, as a form of interpretive social constructivism producing technically rigorous, but essentially heuristic accounts of the realities experienced by those involved in the research

process. Consequently, the approach fits neatly with the inter-subjective nature of this novel setting in which participants are required to create and encounter unique conditions, design and employ innovative materials, use experimental methods, as well as self-reflect and provide feedback to other teachers in interweaving channels of communication.

Hence, in my work I adopted a stance closer to Charmaz's (2000) view of 'constructing' categories. The stated goals of the study were to gather and process rich data from multiple sources (see Appendix V) in order to present a perspective which would inform my practice as a language teacher and teacher trainer and contribute to the field of teacher training and pedagogical ICT. I offer an abstract understanding of how teacher beliefs and knowledge arise and are maintained in the context of authoring DV-based material and peer-teaching. By focussing on issues key to answering the research question which emerged in the course of GT investigation, I hoped to aid my professional practice by providing future participants with a refined and research-validated course that used DV and CMC in on-site peer ELT practice.

Although GT does not need to produce a formal theory (Lempert, 2007), the view confirmed by Goulding (2002), who writes that a Grounded Theory study can provide 'an account based on thick description ', as a result of re-engagement I managed to offer a modest theoretical contribution to the understanding of teacher beliefs. In addition, this study offers a thick theoretical description together with formulations allowing for improving practice in teacher training institutions.

4.4 Bias, limitations, and a reflective account of the research process

Rudestam and Newton (2007) say that the researcher approaches research with their own operative reality. (Charmaz, 2000) and Strauss and Corbin (1994) disagree on the stage at which the delineation of the researcher's positionality should be conducted. Charmaz (2006) sees grounded theorists not as contributors of verified knowledge but as researchers who can propose 'plausible accounts'. But even to produce a plausible account to explain the workings of a setting, will not yield a theory-neutral interpretation free of one's own influence. Thus, it is necessary to begin with the researcher's bias and personal role in the process. This leaves room for possible abuse and perhaps this is why Bryant and Charmaz (2007) write that GT users sometimes employ this method to justify muddled research design. Understandably, the formulation of my research question already might have had some implicit underlying theories about the setting and the accompanying processes. Below, I question my role by examining my actions and beliefs relating to the researched environment.

Some of my main assumptions about the setting stemmed from my Institutional Focus Study (IFS) research, which investigated teacher students using technology during their teaching practice in schools. The IFS provided help in structuring the first draft of the research questions, which in essence, concerned the ways teachers use technological means at their disposal to augment their practice. In addition, because of my employment in the Institute, I had formulated many judgements on pedagogical issues present there prior to the research. To free myself, at least partially, from this influence, I engaged in transcribing and line-by-line coding of group interviews (see section 4.6) as the first coding activity. Doing this helped me to immerse myself in the participants' worlds and come closer to making the familiar unfamiliar (Wagoner, 2008) and, as a result, ascribe new meanings and interpretations to familiar events. Consequently, as the scope of the research changed towards exploring participants' professional beliefs, new, auxiliary research questions emerged (see section 4.1).

Also, using verbatim codes was particularly useful as they anchor the analysis in the participants' worlds (Charmaz, 2006). I suggest that line-by-line coding using the verbatim codes helped me, on the one hand to detach myself from the setting, while on the other to remain faithful in interpreting the setting. Complete avoidance of the superimposition of one's own notions is impossible to maintain throughout the research process and the researcher cannot approach the setting with 'an empty head but an open mind' (Dey, 1993). However, I tried to keep as close to the data as possible and let the categories emerge by frequently returning to the data I had already coded, adding new sources of data, coding with gerunds, and using verbatim codes to preserve the participants' meanings long into the research process.

Undoubtedly, the setting was influenced also by my presence and the fact that I designed the course, which to a large extent reflected my beliefs on how language teaching should be conducted. In this way, my positionality was actually harnessed as a way of knowing the professional field. I had translated this knowledge into online tool design (course website), imposing, to an extent, the pedagogy present at the onset of the course. However, I anticipated that the proposed design would allow for a substantial amount of freedom in terms of the content as the lessons were designed by the teachers.

Adhering to the recommendations of GT was one challenge. An additional difficulty in the analysis stage was that, due to a varying command of English (L2 for all of the participants), meaning coded in the data was obscured at times by ambiguous phrasing or misunderstandings of a task or a question. However, one of the greatest difficulties I encountered in collecting most of my data concerned the sequence of the analysis. I was uncertain whether multiple interpretations might be possible, depending on the order in which the data was handled. But GT favours using interviews as a primary source of data; thus I started with the full transcription

of all the interviews to get into the participants' worlds and in their meanings (a detailed processing of data is presented in section 4.6). In retrospect, it was the right decision as some strongly-held beliefs of mine (e.g. the frequent use of technology to mask insecurities connected with weakly-designed lessons) were soon contested by the emergent categories.

In grappling with my own beliefs, I also solicited and compared multiple sources of data (see Appendix V) in order to avoid seeking and gathering material which would confirm tacit theories I held about the setting as a contractual member of the environment. In addition, I adopted a strategy of scrutinising the newly emergent categories: whenever a new category emerged, I continually compared it with the existing ones in an effort to see its relationship and determine whether it was a valid new category or simply a dimension of an existing one. This strategy helped me move towards the explicit development of new categories and the saturation of the existing ones. The state of saturation is achieved when new data do not deliver new properties (Mishra & Koehler, 2006). The following additional procedures were used to enhance the trustworthiness of this research: conducting peer review during the informal presentations of results, contacting the participants two years after the research with the follow-up questionnaire, and juxtaposing the results with the existing theories in the field during the literature review. In addition, the seeping of bias into the body of data analysis was countered by constantly revisiting and examining the raw data (for the samples of raw data see Appendix XIII), making my role explicit, gathering rich data from multiple sources.

4.4.1 The role of literature in the research process

The originators of GT, Glaser & Strauss (1967), propose that literature ought to be considered emergent and data-like in the unfolding research process and any concepts must 'earn' their way (Glaser, 1978). Holton (2007) warns that beginning with any particular theoretical lens (including those derived from literature) precludes the development of other perspectives and limits the analysis and its ensuing abstractions. But few researchers approach a problem devoid of prior knowledge or specific theoretical assumptions. Thus, in accordance with GT recommendations, a systematic literature review was initially deferred, as conducting the review too early 'violates the basic premise of classic methodology' (Holton, 2007, pp. 269-271). Although extensive reading of the literature previous to data collection may increase theoretical sensitivity (Dey, 2007; Goulding, 2002), the resulting research may be constricted by the imposition of the field paradigms investigated. Adopting a hypothesis to test would have likely brought a premature focus to the research, which was intended to be exploratory in nature, and would have thus discouraged the collection of data from diverse and multiple sources.

However, when one embarks on research without a previous in-depth literature review or an investigation of frameworks used in the field, there are also inherent risks. One is the possibility of duplicating a previous study or inventing paradigms that have little relevance to what has been already discovered. Another is adopting an approach that has been negatively tested in previous studies or even encountering the difficulty of fitting the research within the existing paradigms. Pidgeon and Henwood (2004) use the term 'theoretical agnosticism' to refer to the interplay between literature and research, in which the awareness and knowledge of the existing literature can aid a study, provided the researcher is able to delineate its influence on the current work. I felt that by adopting this agnosticism I would be open to the ways in which studying processes within the setting could help me fine-tune the research questions. However, in retrospect, I was only able to refine my research questions through the extended re-engagement with the literature. Arguably, maintaining this agnosticism is a challenge for novice researchers and should be avoided.

I therefore adhered to GT principles by constructing emergent categories directly from the data and verifying them through constant comparison with other categories emerging from other sources of data. However, a general field literature review was carried out in the early stages of the research to contextualise the research questions and once a general direction of the course of this study was established, an extensive review was conducted covering the field which offered the greatest promise of insight into the setting considering the research questions-namely teacher beliefs and the related phenomena. Thus a constant review accompanied a newly established focus which allowed consideration of the data with new perspectives resulting in an original theoretical contribution.

While using frameworks established in previous research constitutes an advantage, applying GT methodology in the initial stages of this research allowed me to better understand the localised setting and to use those theories which have a bearing in the subsequent analysis. This approach reinforced a reiterative engagement with the literature and the data and contributed to the development of a new construct in the final stages of the study. Through the reading done in the area I discovered that the body of research addressing teacher cognitions, beliefs and values is relatively small. Simultaneous data analysis brought these teacher attributes to the fore and allowed for a greater and more nuanced multidimensional understanding of teacher actions in pedagogical settings. This understanding is particularly important as it should inform the ways in which teachers are trained, in an effort to build pedagogical skills and knowledge with a perspective on their beliefs.

4.5 Sampling, data collection design and sources of data

This is a small study with forty participants. All were teachers of Polish nationality continuing their education in the 4th year of the MA English philology course in the Institute in Krakow, Poland. A detailed description of the participants can be found in section 2.1.1. As mentioned earlier, I also include two pen portraits of the participants in Appendix I.

4.5.1 The sampling of the participants

GT recommends using theoretical sampling both of the participants and the data (Charmaz, 2006; Glaser, 1978; Glaser & Strauss, 1967; Strauss & Corbin, 1994). Theoretical sampling assumes that new sources of data might be needed to saturate the emergent categories. However, in this research I did not apply theoretical sampling to the participants. Instead, selecting all of the participants without prejudice seemed to be most appropriate and the sample was essentially self-selecting, being the group of forty students who completed the planning-teaching-evaluation cycle. This decision was also dictated by practical reasons as particularly valuable data appeared in two online discussion threads, where all posts formed a network of interrelated comments exchanged among all of the participants. In addition to the technical difficulty, extricating comments belonging to previously specified individuals would have in all probability unravelled the context in which they were posted and, as a consequence, would have diminished their value for the research.

The table below introduces the participant sample whereas the description following it elaborates on the nature and sources of data.

Characteristics of the participants	A cohort of first year MA TESOL (CPD) students participating in a TESOL practical English You Tube - based course.
Number of groups	2
Number of students in each group	Group one: 20 , Group two: 25 (incl. five visiting Erasmus programme students- attending the Institute course for one or two terms)
Number of student-taught sessions in the course	Term one: 17 classes, Term two: 21 classes
Lesson teaching arrangement	Teachers in term one: arranged in groups of three to five students, Teachers in term two: arranged in pairs

Table 4:1: Characteristics of the participants

4.5.2 Nature of data and data collection

No data needed translation as it was collected in English using forms and tools with instructions written in English. Conducting the process in this way was more natural given the setting. Teachers participate in classes that are run solely in English and even administrative issues during the breaks were handled through English. The English-only policy is one of the basic tenets of all courses run in the Institute. The use of English only was further justified as Erasmus exchange students from Slovakia and Turkey were participating in the course. As for the sequencing of the research procedures, data collection and preliminary analysis were conducted simultaneously to the extent it was feasible. The chronology of data collection is portrayed in table 4:2., followed by a listing of data sources, which are described in greater detail in Appendix V.

Data that was analysed early on, i.e. themes emerging from 'discussion thread 1', 'discussion thread 2' and the 'mid-term feedback', were used to develop the preliminary research question and structure the 'online questionnaire' and the 'group interviews'. Through this process, I located gaps in the already-gathered data, which guided me in choosing additional sources and implementing the procedure of theoretical sampling . Following Charmaz's recommendations, (2006) through this process, I continued to gather and analyse further data, despite the fact that some patterns had already begun to recur.

The additional data included the lesson-planning tool with a set of lesson plans and a 'follow-up questionnaire' These sources were used to refine, elaborate and exhaust the existing categories. Dey (1999) contends that sampling should aim towards obtaining theoretical sufficiency rather than achieving saturation. However, in the case of this research it was only when the emergent categories were set against existing frameworks discovered in the literature review that 'theoretical sufficiency' was secured.

Though I did not initially aim to gauge the development of phenomena over time, a sustained perspective was offered by studying the online posts in the discussion threads as the participants wrote them throughout the course. As mentioned earlier, the general research problem stemmed from the findings of the Institutional Focus Study and was later reinforced by the results of the 'mid-term feedback' form (see section 1 of Appendix VI). Participants' views and actions developed over time and gathering data at the end of the course would have not necessarily offered a wider perspective on the nature of the understandings and actions present throughout the course.

Additionally, I offered the participants my interpretation and emerging concepts as an auxiliary part of an online follow-up questionnaire (see section 2 of Appendix VI) which asked the participants for feedback. However, despite my repeated requests, the lack of answers rendered that part of the follow-up questionnaire unusable. Nevertheless, ten students, a sample large enough to draw informed conclusions about the status quo of emergent issues over two years after the course, answered the follow-up questionnaire, the analysis of which is woven into the Results and Discussion chapter.

4.5.3 Sources of data

This section outlines the type of each data source gathered and analysed in the research and presents the time line for its collection. The detailed descriptions of each data source and their characteristics are located in the following Appendices: II, III, V, VI, XIII,

I divided the data into three groups:

1) Initial sources of data (used to generate ideas and test the data collection tools):
    a. Mid-term feedback
    b. Observation notes
    c. Pilot group interview
    d. Pilot online questionnaire

2) Primary sources of data used to provide the core material for analysis:
    e. Discussion thread 1: Posts about the lessons (about term I)
    f. Discussion thread 2: Comments about the course (about term I)
    g. Discussion thread 3: Posts about the lessons (about term II)
    h. Online questionnaire (about terms I + II)
    i. Group interviews (about terms I + II)

3) Additional sources of data- added as a result of theoretical sampling
    j. Inventory of video clips (terms I and II)
    k. Lesson plans (terms I and II)
    l. The lesson planning tool
    m. A follow-up questionnaire

The themes arising from the mid-term feedback were later used to design the online questionnaire and group interviews, which were piloted (c. Pilot group interview and d. Pilot

online questionnaire) on a sample of three students before their application in the setting. Within the primary sources of data, the online questionnaire and group interviews were treated as core sources and therefore given particular fine-grained analysis. This was dictated by both the volume and relevancy of the answers; the chart below illustrates when a given source of data was created. Data, which were not created for the purpose of the research, were compiled from the outset of term I until the middle of term II. All data subsequent to that point were gathered with tools designed to answer the research questions (group interviews, online questionnaire and a follow-up questionnaire).

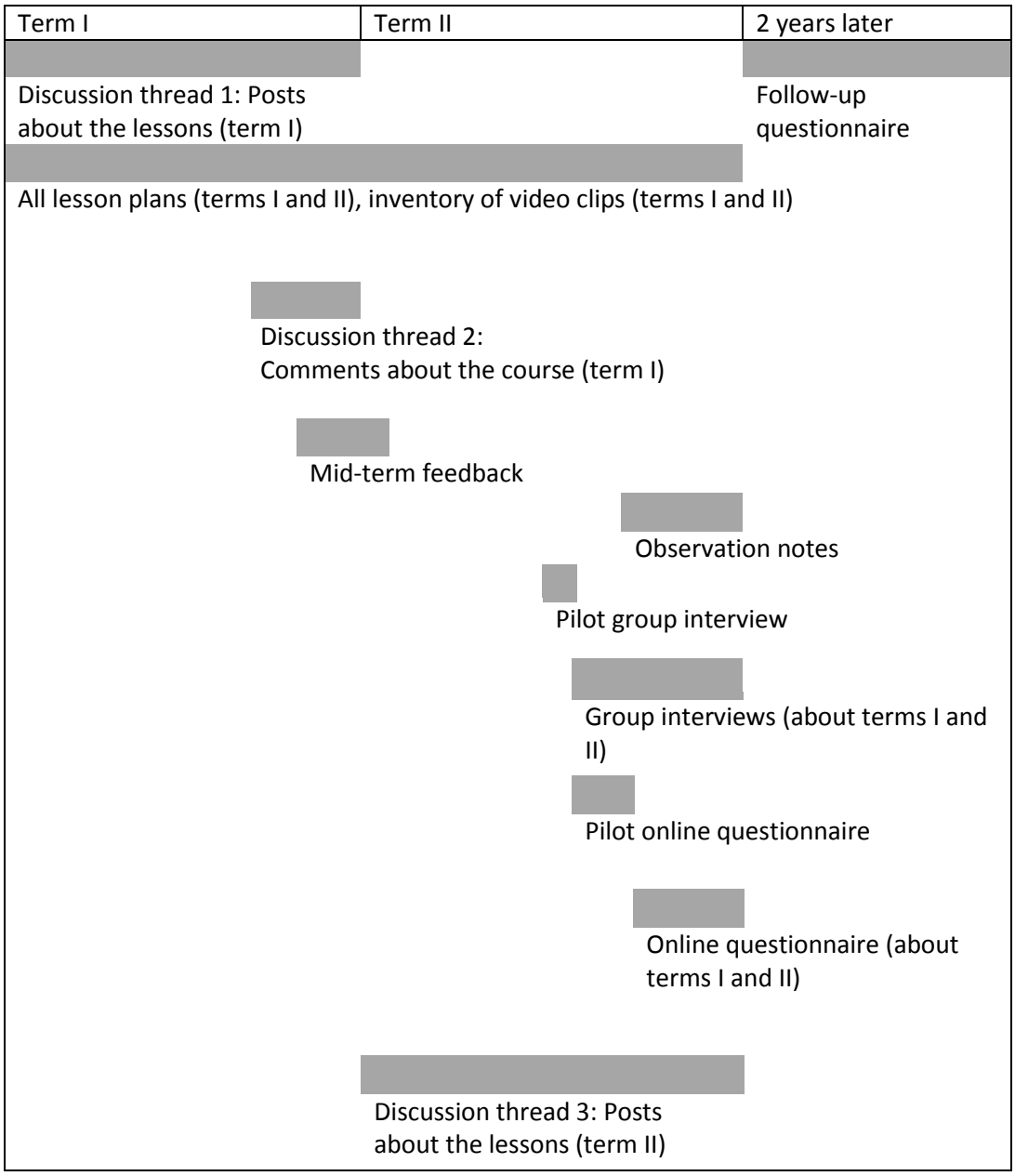

Table 4:2: Chronology of data collection

My analysis of the collected data moved through the pathways typical of GT based approaches, with the videotaped group interviews, online questionnaires, Discussion thread 1 (posts about

the lessons), online materials and lesson plans and other data described below being subjected to the recommendations of GT process. The following sections describe processing and coding the data.

4.6 Processing and coding data

4.6.1 General procedure

This section presents key aspects of the data analysis procedure. For more detailed information regarding the sources of data and the ways the sources were handled, see Appendix V and the following section. Considering the wealth of data gathered, though processing and coding followed a sequence recommended by GT on a single data strand, the analytical processes overlapped, at times running concurrently with diverse sources of data at various stages of analysis, all feeding into the hunch-based memos (see Appendix VIII for an example of a memo, and section 1 of Appendix XI for sample early hunches). I use the term hunches to refer to the interim and succinct conceptualisations, I noted throughout the research, which helped me link early categories with the memoing stages. However, all the processes were governed by my search for the emergent themes that were directly relevant to the main research question, and preferably contained explanatory potential.

As indicated above, not all processes of analysis and coding were sequential and I often conducted the coding and re-coding iteratively to fill in gaps in the emerging categories. Continuous comparison resulted first in the emergence of hunches and later categories. Naturally, hunches continued to appear until the end of the process as part of the ongoing theoretical processing of the data. Data handling procedure for all sources followed the GT principles outlined in section 4.3 with minor variations and recursions in the processes of coding, sorting, comparing, categorising and writing memos, all of which depended on the source of the data handled. The following section builds on the presentation of the general ways the data was processed as demonstrated in the table available in Appendix V.

4.6.2 The process for analysing of the data

In general, the data were submitted to the following procedures: sorting, comparing, writing memos, looking for gaps, re-examining codes, choosing new data sources, gathering and sorting telling quotes and hunches. Hunches were sorted and grouped to generate master hunches which constituted an interim stage before memo writing. The core categories were chosen on the basis of discussion threads 1 and 2, the online questionnaire at the end of the course, and

the follow-up questionnaire conducted two years after the course (see Appendix V for the description of data sources). Triangulation was conducted with the online questionnaire to validate categories emerging from other data. The results were then juxtaposed with the theoretical literature-based insights. All hunches and memos were finally sorted to form sections in the Results and Discussion chapter. Below I provide a more detailed account of the steps taken in handling the analysis.

1. Gathering data (note taking, transcribing, downloading CMC sources)

I conducted observations and took the notes during five classes, piloted the online questionnaire and the interview, conducted seven interviews and fully transcribed the resulting audio recordings, downloaded the contents of Discussion thread 1 and 2 to convert them to word documents, conducted the online questionnaire, gathered and catalogued the inventory of video clips and lesson plans, gathered screenshots of the lesson planning tool, and conducted the follow-up online questionnaire.

2. Coding (for themes, categories and their properties)

All textual data was then subjected to line by line coding to build up a corpus of categories and concepts and, later, core and clustering themes for analysis. This coding had multiple stages and two levels: open coding, the end product of which was the generation of a set of conceptual labels; and, at a more abstract level, axial coding, which produced a set of paradigm features and indications of process by identifying dynamic interrelationships between concepts. For that purpose I used a number of mind maps (see Appendix IX for a sample mind-map). This aspect of the research was linked to the parallel production and analysis of memos. A representation of the coding transcript is provided to offer an insight into the procedure (see Appendix VII).

All data was coded and the resulting categories were compared to other processed data and the categories stemming from other sources of data. In this procedure, certain dominant categories subsumed others and some were reduced to properties of existing categories. I present the list of main categories at the beginning of Chapter 5. Additionally, I also drew on hunches, which I gathered throughout the data analysis process (see section 1 of Appendix XI). Using hunches did not change the workings of the methodology but gave me an additional analytical tool that operated on a deep, intuitive level and provided another vantage point that was helpful in explicating emerging meanings. I used only the/those strands of data which I expected to be relevant in answering the research questions. During the coding process, I applied open coding using descriptive codes for each point of interest (rephrasing what participants had said) and I simultaneously noted analytical codes separately. I followed Charmaz's recommendation (2006)

and coded data as actions (using gerunds) in order to detect processes and not turn actions into topics. I looked for categories that would elucidate how the participants were interpreting the context and acting upon these interpretations. For data of direct relevance to the research question, I used line-by-line coding (together with verbatim coding) and noted the hunches for subsequent analysis. After this initial coding, I used more focussed coding by re-examining the existing codes in order to choose the most significant codes for further refinement. At that point, I also began combining and comparing various types of codes developed earlier –verbatim codes with analytical codes, with hunches and themes that emerged.

3. Memoing (refining conceptual categories and developing emergent theoretical propositions)

Since memoing is a key procedure in GT analysis, I first provide a theoretical background to the process. In essence, memoing aims to facilitate the internal structuring of the concepts and supporting cognitising relations between the categories. Holton (2007) points out issues connected to the use of memos when applying GT, e.g. sorting memos before achieving theoretical saturation or hastening selective coding. Robson (2002) explains that axial coding should precede selective coding as its role is to focus on relationships between the emergent categories, which contributes to the creation of more developed memos. Categories, once they emerge, according to Dey (2007) are 'metaphorical rather than rule-bound'. That is why, at any stage of the research, memos should be written. Early memos can lack consistency, but they can also provide an audience and thus initiate the researcher's internal dialogue (Lempert, 2007). In this way memos help to move the research forward by allowing the evolution of concepts and categories as well as structuring the emergent phenomena into more coherent units of analysis. Goulding (2002) adds that memos are useful in finding the relationships between the concepts. Grounded theory can also use diagrams, which can show the relationships of sometimes complex categories in a more concise way (Goulding, 2002). The hunch-based memos also helped me to make an interpretive rendering of the stances taken towards the course silenced out in the data. Visual plotting (see Appendix IX) helped me realise these gaps and pursue them with greater care.

The analytical process outlined above centred on the writing of a series of memos – or theoretical notes to myself - made throughout the period of research. An example of a memo produced (see Appendix VIII) supplements the analysis. I structured early memos around the most telling hunches that emerged during initial coding of the first sets of data. Later, in the process of analysis, I wrote new memos about the categories that subsumed main themes. Then, I revised and restructured these to form the foundation of the discussion part of this paper. During the process of memo writing, I re-assembled and joined the categories and their properties extricated during coding and visual plotting. Simultaneous and repeated sorting and

rearranging through diagrams improved the refinement of the comparison and teased out increased elaboration of the relationships between the categories.

This process, however, could no doubt be taken further and continued beyond this research by a more in-depth investigation of some of the categories' properties, especially the ones which were more peripheral to the focus of this research, e.g. the linguistic development of the participants as a result of the course. In retrospect, plotting visual mind-maps turned out to be the right way to encompass the sizeable amount of data coming from a number of sources, and discerning the relationships between the codes, and later categories and their properties. Writing hunch and category-based memos focussed my thinking about these categories which had enough predictive or generalisable power to illuminate the main research question.

4. Sorting (following the point of 'theoretical saturation'), conducting the literature review, writing the first drafts of Results and Discussion.

The accumulated memos were first grouped according to their themes, and occasionally new synthesised memos were written. Later, I also compared the memos and core categories to external frameworks through a literature review. This was a crucial step as the results of a focussed literature review were introduced into the study to establish relevance and applicability of existing frameworks. The core findings were juxtaposed in order to increase the theoretical depth and relevance of the research questions. The ultimate aim, once the set was completed and no longer responsive to further creative analysis (which is to say theoretically saturated), was to put the memos into an integrated, coherent order and begin the process of writing.

The following figure presents an outline of the sequence of data handling and does not reflect the reiterative engagement with the literature. The graphic presents only a simplified, schematic path of the analysis, as in reality there was a greater amount of reiteration and returning to the codes and categories, which had already been analysed. Moreover, as the analysis progressed, codes from various sources of data were synthesised and emerging categories continued to represent multiple sources and subsume less telling categories. However, it was the online questionnaire that was given particular attention, as it was the penultimate and most extensive source analysed (before a brief follow-up questionnaire).

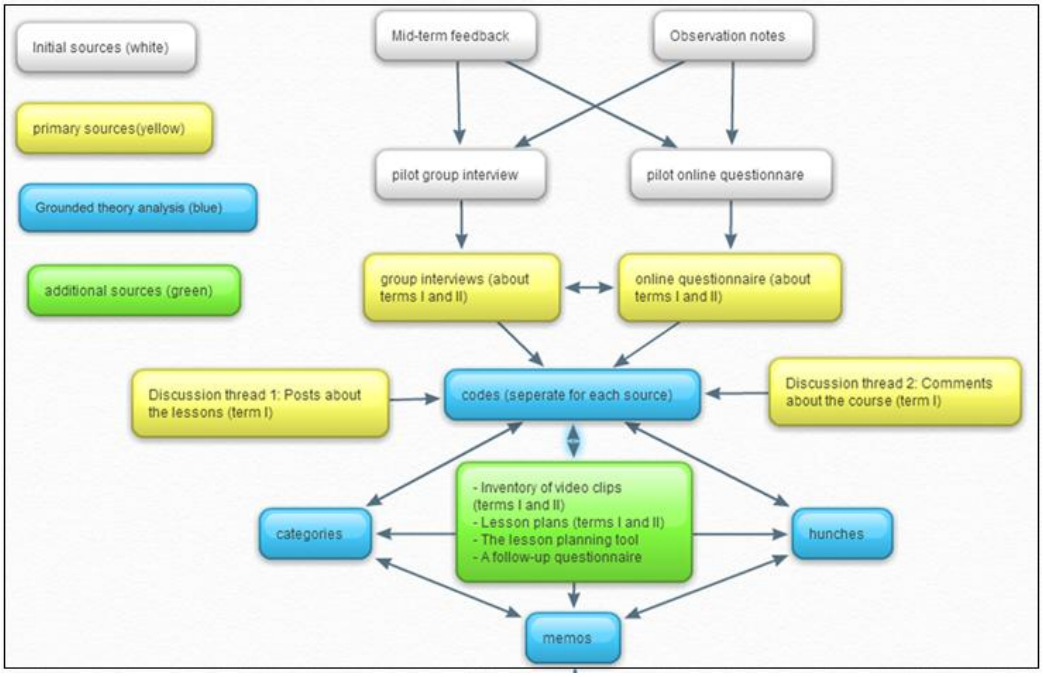

Figure 4:1: Sources of data and the general sequence of data handling

In sum, the overall process of analysis involved coding the data sources until a range of categories arose (which in turn were analytically narrowed through refinement in the coding procedure), noting and analysing emergent hunches, constant memoing and, finally, inspecting the literature. Initial coding revealed tentative themes, which through constant comparison, became gradually more analytical with some standing out and taking the form of a category during memo writing.

4.6.3 The analysis of the online questionnaire as the key stage of the research

The processing of the online questionnaire, which I conducted towards the end of the analysis, enabled me to synthesise all categories into a more unified conceptualisation of the studied phenomena. It is difficult to say whether the same categories would have surfaced if I had chosen a different sequence of analysis. However, those that did appear by the time I started to process the online questionnaire both helped me categorise the total of about 1600 answers to over forty questions and derive new information that saturated the existing categories. Thus, the process was bi-directional.

Nevertheless, processing the questionnaire turned out to be the most challenging part of the research, as I observed that juxtaposing and sifting through the codes that were at different stages of conceptual development encouraged stretches and leaps in reasoning. Having a satisfying experience with line-by-line coding and analysis of the interviews, I decided to use the same procedure (see Appendix VII). This was a turning point in the research as the categories

that emerged from these actions cemented some loose themes into a more coherent unity. I counted twenty-six steps in the questionnaire analysis procedure (see Appendix X).

The entire process was in fact more complex as it continued throughout the writing-up of the thesis. I reiterated the process between some stages, e.g. constant comparison to the coded questions and later summarised answers to questions. In addition, with what appeared to be particularly insightful answers, I adopted a strategy of tracing the identification number of a code to look at other posts made by that author within the questionnaire (this was only possible in data which required student to login). In this way I managed to obtain some strands of high quality answers for a more focussed analysis.

With such a large volume of data already gathered in the early and mid-stages of the research, I adopted Charmaz' view (2006) that axial coding is not necessary if one can tolerate ambiguity and would not prefer to apply an analytic frame to the data early in the process. However, I did return to axial coding, using mind-mapping software for that purpose (see Appendix IX) in order to make further connections between the categories and explore their relationships when analysing the answers given in the questionnaire. I also continued doing this during the writing-up stage and in retrospect such a sequence helped me understand the interrelations of the core concepts and categories when I was ready. It was processing the online questionnaire that cemented all of the emergent categories into more coherent sets and allowed me to extrapolate more coherent understandings of the participants and the setting.

4.7 Ethics, contacting participants and getting permission

All of the participants enrolled in the course were my students during the period of data gathering. As the course was a part of a larger module (Practical English) in their M.A. in English Philology programme, the course grading procedure was negotiated at the onset of the second term with the module leader. I notified the students about the general research procedures, the aim of the study and my intention to use their artefacts as data for the purpose of this doctoral dissertation. The premises behind the course design were dictated by the scope and focus of the research. However, the design not only fitted within the curricular requirement of the M.A. course but it also related to other components of the course such as listening, writing, reading and TESOL didactics. This course also aimed to benefit the teachers by combining advanced English language practice (L2 for the participants) with the elements of teaching methods.

In order to limit the Hawthorne effect - where attention received increases productivity (Gomm, 2004) - the participants were not presented with the research questions, but only the general

aim of the research, together with the already fulfilled promise to share the findings on completion of the process. They were all informed about the duration of the study and their right to reject participation in the study without any bearing on their course results. In addition, the informed consent and official endorsement of the redesigned course was obtained from the Institute's authorities. I also requested the participants in written form to participate in an anonymous opinion poll towards the end of the course, prior to the research proposal submission; out of forty participants three did not want to participate in the research, five did not come for the scheduled interview sessions and three did not complete the questionnaire. Ten teachers had completed the follow-up online questionnaire at the time of writing up the results- two years after the completion of the course.

The research does not identify or present personal identifying details of the participants, as it does not focus on individual performance or opinions. Hence, any sensitive opinions that were expressed and found their way into the body of the research are representative of the entire group of students. The participants are now no longer in a power relation with the Institute as they graduated from the institute in 2010. Issues of anonymity and confidentiality were generally handled in the online comments about the course by coding the participants' names and avoiding any directly identifying details. Neither the code names nor the real names were used in the research. I ensured confidentiality both for the views and for the identities of the respondents and whenever I present the verbatim opinions of the participants, I do not release any personal identifiable data. In particular, the data which were purposefully generated with the sole aim of being used in the research (i.e. was not a natural and pre-planned part of the course) include the group interviews, the online questionnaire and a follow-up questionnaire conducted two years after the course. In the online questionnaires, students were explicitly asked, among other things, for honest reflections concerning the course. However, neither the researcher nor any of their peers, including the partner with whom they conducted the lesson, were able to identify individual participants' identities as neither login/registration was required for posts nor personal data was given. Prior to the group interviews, the participants were notified that the interviews were not part of the course and were not in any way obligatory; anyone could withdraw from them at any stage and anyone could request that their responses not be used.

I also attempted to lower or eliminate the likely sources of pressure on participants. In particular, the course did not end with an examination. All students obtained a credit for the course for completing the required tasks (lesson teaching and posting comments). Assessment was kept separate from activities connected with the research, i.e. students could refuse to participate in a questionnaire session, which, after the endorsement from the director of the Institute, took place during the last session. Only two teaching pairs agreed to have their lesson

videotaped – others refused, citing additional stress as the reason. Due to the insufficient sample and poor recording quality in the sample obtained, I decided not to use this source in the research. Instead, I have widened the originally planned scope of the data coverage and included twelve separate sources (see Appendix V). Moreover, as the focus of the research turned to teacher beliefs and knowledge, large strands of textual data (transcribed interviews, discussions threads, and the online questionnaire) proved to be adequate tools to access the participants' perspectives.

Ownership of the data rests with the researcher, but all participants and any other interested parties have been offered a preliminary set of results posted online and received a link to the material. The study is political, in the sense that it identifies the Institute, proposing, for example, adjustments to certain practices. However, the study only reflects critically on those of the Institute's practices which are within the immediate scope of the research and does not challenge any of its policies or their execution.

5 CHAPTER 5: RESULTS AND DISCUSSION

5.1 Introduction

The professional concern which dictated my decision to pursue this study was the fact that when their institutional training in digital technology use was not integrated with pedagogy, teacher trainees were more likely to adopt a stance of pragmatic 'presentism' (van der Dussen & Rubinoff, 1991) rather than strive to integrate technology with their pedagogical and content knowledge (Schulman, 1986). This chapter therefore analyses the effects of an ICT CPD course on a group of TESOL teachers who were required to use digital technology. Its two main sections organise results relevant to the research questions concerning the influence of the ICT CPD course on TESOL teachers' professional development. The literature perspectives are brought together with my key findings to offer new insights into the researched environment. In particular, since the literature review conducted in the field revealed a significant gap in our understanding about the role and nature of teacher beliefs relating to the integration of ICT in their practice, teacher beliefs in an ICT-enhanced context have become the key focus. The results of the research are related to trainee teachers' beliefs, their knowledge and practice. An original contribution to understanding in the field is provided, by filling a gap identified in the literature, in the form of a new proposed model for understanding teacher beliefs in an ICT setting.

During the process of the research, sixty-four categories emerged (see section 3 of Appendix XI) as relevant to the research questions, which were then later refined as the following set of twenty-two presented below.

1. probing and understanding the current setting and peer needs
2. analysing past teaching models and previous practice
3. challenging the Institute's pedagogical training and language practice
4. developing a new teaching model through CMC
5. exploring novel ways of teaching
6. shaping pedagogical belief systems
7. viewing technology in teaching as an external element to education
8. learning to adapt technology to ELT practice and lowering anxiety
9. building professional confidence
10. exploring the uses of pleasurable practice
11. exploring autonomy towards the realisation of teaching principles
12. practising self reflection and peer assessment
13. acknowledging the influence of peers and peer feedback via CMC

14. merging teacher-student roles
15. adopting disclosure and greater transparency in professional conduct
16. developing professional empathy and reciprocity
17. developing new responsiveness to students' needs
18. disclosing professional motivation in altering quality of teaching
19. building professional value through the introduction of pedagogical and content meaningfulness
20. structuring professional identity through reflection on affective aspects of teaching
21. defining oneself as a teacher, expressing professional satisfaction
22. adhering to the negotiated construct of a 'good teacher' and aligning practice with beliefs

The categories provide a ground-level perspective on the workings of the setting. They reflect on the types of understandings and processing emergent as the teachers engaged in the ICT-rich peer teaching practice. Main sections of the discussion are followed by sections connecting the discussion to the literature. Thus, autonomy and motivation, CMC and meaningful learning, developing TPACK and problematising the belief change as evidenced in the ICT-CPD are discussed.

Many of the categories have overlapping properties and the presentation of the results in this chapter has been organised under two main emergent themes which directly correspond to the research questions:

1. The effects of the CPD design on teachers

2. Teacher beliefs about their practice

Each section is followed by a discussion of the findings in relation to the literature review. The last part of the chapter synthesises the findings and offers a distinct contribution of knowledge in the field of study.

A number of the teachers' short quotes (in-paragraph placed in parentheses) and longer ones (separate from the main text, bulleted in smaller font and indented) have been used to illustrate the points made in the discussion of the results. The GT-guided research process involved the constant shuffling of particular data snippets in the process of constant comparison and refinement. Thus, direct quotes from various strands of data have been merged without attributing them to particular individuals due to the characteristics of the data collecting instruments (see section 4.5.2). A sample of raw data is presented in Appendix XIII.

5.2 CPD as an extension of prior pedagogical training

This section contextualises the ICT CPD course in the previous, pedagogical training the participants received by analytically presenting their opinions. In general, teachers observed that they adhered to the core methodological procedures, but their application was peer and self-dictated rather than imposed by the explicit requirements of the setting (e.g. modelling or instructions from the tutor). Thus, they pointed to a unique opportunity to realise one's teaching ideas (mostly material and task design) in a challenging peer-observed setting and critically examined the usefulness of the knowledge gained in the past.

Some students claimed that they benefitted from the teaching methods courses which they had taken in the past, as they knew what types of exercise to use, were familiar with the rules of monitoring or knew how to structure a lesson and how to prepare good handouts. Others were very critical about their previous pedagogical training, claiming it was too theoretical and therefore not useful. Additional criticisms centred on exploiting worn-out topics and offering uninspiring activities. The categories which emerged from the analysis point to the following advantages in experience of the ICT-enhanced teaching practice course versus previous pedagogical training:

Emergent categories	**Sample student quotes**
Exercising individual choice in lesson design and teaching	*Ability to decide about the topic and structure of the lesson, being able to decide themselves about entire content, being able to find materials to structure a lesson, Individually generating content*
Generating student interest in new, creative ways	*Going beyond the textbooks, including topics that are missing from ordinary classes, more engaging and motivating because of freedom to be creative, experimenting with choosing YouTube films was innovative*
Applying new technologies	*Technology was a dramatic difference, interesting videos made it different, using technology – computers and projectors, technology was natural , similar but instead of tapes there were videos*
Practicing new lesson formats	*Switching focus of learning from grammar, reading and vocabulary, making the movies the core of the lesson, like a listening lesson but more time-consuming and demanding, planning the process was the same- YT was just a different type of the activity*
Facing format and peer-related challenges	*Need to prepare for potential problems, constructing tasks time consuming, including greater unpredictability into the Preparing plan B in case of emergency, time-consuming but pedagogically interesting, facing peers and their questions, competing with peers in finding new strategies, advanced level of students*

Table 5:1: The experiential differences between the ICT CPD course and previous pedagogical training

Admittedly, teachers used the principles of lesson planning learned during their prior courses on ELT methods, but they realised that the new setting gave them an opportunity to examine previously acquired practical and theoretical models, which resulted in extending familiar principles, and using old training as 'a jumping board' while 'treating theory as guidelines and using it selectively', aiming at 'creating one's own methods and styles'.

- In theory, I have received pedagogical training at my previous studies (BA), however our methodology course centred around more abstract issues
- And we had very little practical topics. I have not had the opportunity to teach at such an advanced level before.
- Methodological principles are the same, what differs is the level of language.

When asked to reflect on their practice at the time, some teachers extrapolated from their experience and the feedback they received to formulate ideas for future classes:

- I would amend one or two activities slightly as I realized that they could be improved thanks to students' comments and the conduct of the lesson.
- I would have to expand the discussion between movies, since the feedback I got told me "too few and too simple".
- I would change the reading exercise, because many people wrote that it was boring.

Teachers praised the course for providing them with the opportunity to expand their teaching skills ('it brings some new ideas for constructing lessons') while practising English ('very good way of learning … the language') in a culture-rich environment ('combines cultural and language learning', 'developing through exposure to culture').

When reflecting on the CPD course, a good summary was offered by one teacher who said that the course gave them 'an opportunity to somehow polish our methodological skills' and go beyond what they called 'teaching practice restricted to following the book'. Most importantly, since the lesson format encouraged meticulous lesson planning and extensive CMC feedback from other teachers who were real subjects of the lessons taught, many ideas about teaching, even those so fundamental as the pre-during-post staging of a skills lesson, could be put to the test and verified:

> I think that I used this knowledge (I am from the methodological group) - it is somehow rooted in my teaching. This presentation was simply another opportunity to check it in practice.

In sum, by participating in lessons and exchanging posts with other teachers, the participants had multiple opportunities to work out which previously acquired teaching techniques were appropriate for the current setting. As they engaged in designing, observing, teaching and reflecting on lessons, reading and reacting to peers' comments, informally interacting before, during and after the classes and exchanging opinions and lesson materials, their ideas developed and constituted the foundation of the teaching model they relied upon to design and teach their lessons. The teaching model is presented and discussed in section 5.4.6.

The following sections address the main research questions of how the course influenced teachers and bring perspectives on its effect on their motivation, practice and knowledge.

5.3 The effects of the CPD design on teachers

5.3.1 The effect of autonomy on teacher motivation

The key role of teacher autonomy surfaced as an important category during the investigation of the effect of the CPD course. In fact, though the initial course guidelines were quite loose and limited to the general principles of creating and teaching a lesson using YouTube, the accompanying tools and the pedagogy embedded in them imposed more rigours; as one student duly noticed, 'the freedom was not that enormous'. Yet teachers appreciated being able to implement any conceivable lesson format and theme, following the single requirement of the presence of digital video- pronouncing that it was 'great, there were no restrictions to the structure of the lesson':

- I had the freedom of choice in choosing a topic, the structure of the lesson, the types of exercises. I enjoyed the possibility of creating the lesson from the very beginning.
- The restrictions don't serve us any good. A person can be creative only when they are free. Should we be restricted in any other way, the lessons would probably be assessed poorly
- We had the opportunity to design things however we wanted, but on the other hand we didn't have much guidelines to help us, apart from the presentations of others'.

The teachers appreciated freedom to choose lesson topics and structure lessons 'to their liking' which made them 'feel more like teachers'. In their view this in turn translated into a greater willingness to experiment, while assuming the responsibility for their development. Hence, the teachers invoked ideas connected to having a chance of 'realising one's vision', 'proving

inventiveness', 'confronting expectations with reality' and 'exercising creativity', all as a result of feeling unconstrained. Also, they reported being more willing to explore unusual topics that are both 'informative and gripping' and exercise their imagination in devising new task types. At the same time, teachers universally confirmed that they did not feel limited by being obliged to use YouTube in their lesson as they felt that, in fact, it triggered their creativity and resourcefulness:

- In fact it (YouTube) opened the world of new possibilities. Sometimes the limitation was that I couldn't find appropriate videos and changed the topic I've invented.
- No, it did not limit me in any way. The only rule was that the lesson should be based on some YouTube element. For people who would not like to use it, it could be a problem but the YouTube videos were interesting so everyone wanted to use it

Mutual assessment of performance validated by peer teachers via CMC, enabled deep personal and shared insights into classroom practice, so valuable in teacher-training. Once teachers proved themselves to be capable of meeting the expectations of other teachers, their practice matured, allowing them to attain professional and personal satisfaction and an enhanced sense of professional identity.

- It enables us to use our creativity as well as pragmatic thinking to make up a lesson which will be both appealing to students as well as highly informative. Generally speaking, this method opens a whole spectrum of new possibilities like the contact with real-life materials, activities focused on communication, natural use of language, spontaneity of interaction.
- The classes based on You Tube give us a chance to develop our autonomy and practice our teaching skills. With more effort on both sides the pedagogical approach that has been adopted may yield very positive results and I would not abandon it.

Closely related to the concept of autonomy was the guidance and support the participants received from me during the course. The majority of teachers saw the lack of tutor feedback and limited guidance as an advantage:

- I think that it (guidance) wasn't really necessary. We know a lot by now, any more guidance could prevent us from being creative, as it would imply (or suggest) some particular types of exercises to us.
- It's hard to say, because we had barely any instruction and yet we survived and did successfully (at least I hope). What I think could be changed, is the teacher's feedback on our work – and here was none.

- It would be useful however, on the other hand, it would limit our creativity considerably

My main motivation in refraining from offering explicit guidance and giving feedback to course participants was dictated by my assumption that overt instruction would mould their actions just to fulfil my expectations.

However, the teachers disagreed as to the role and amount of the guidance they received: on the one hand stating that more structure and instructions would mean less creative lessons, and on the other complaining that I provided inadequate feedback or provided none. Participants mentioned that 'guidance would help save time' and that they 'feared (they) might not being able to meet the criteria'. Others recounted that the situation was 'vague but clarified with time' and that in this way 'freedom and flexibility were encouraged' consequently suggesting the solution by saying 'Instructions no, feedback yes'.

The following table summarises the emergent effects of autonomous practice on pedagogical practice.

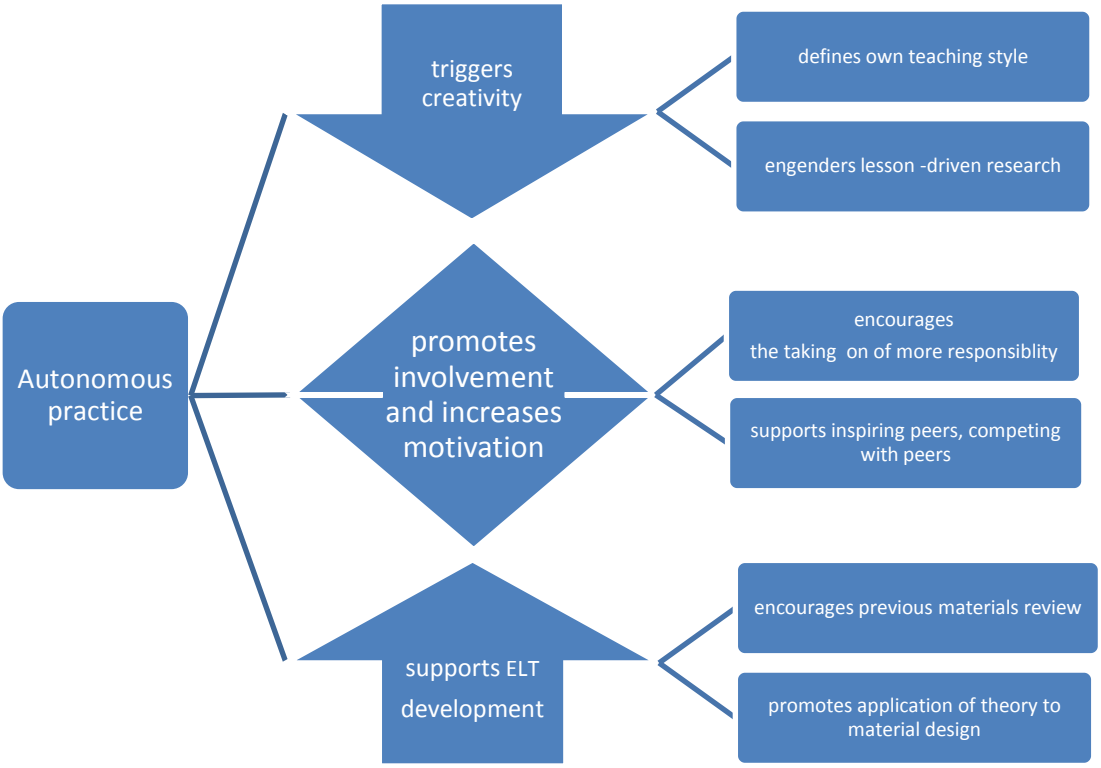

Figure 5:1: Effects of teacher autonomy on the authoring of materials

As portrayed above, the experience of autonomy in the course increased teacher involvement and promoted an active approach and determination to meet the challenges of the classes.

In addition, autonomy allowed for the surfacing and realisation of the principles based on personal motivation. What guided teachers in preparing classes is an essential element in

fathoming how autonomy influenced their pedagogical actions. Teachers were motivated by their negotiated notions of what makes a language class engaging, often citing the feeling of responsibility towards peers as an initial trigger for their actions:

- For me, it was the great amount of trust and responsibility given to us, as the class depended wholly on our work and also the freshness and attractiveness of the idea of utilizing YouTube.
- I wanted my classmates to appreciate and enjoy it- it was a great motivation. My final grade was also dependent on the presentation so that was enough to motivate me.

Since teachers lacked feedback from the tutor, they relied on peer reactions during the lesson and on the comments they received afterwards ('the fact that I was assessed by my colleagues') to gauge their performance. Looking for appreciation resulted in trying to probe and meet the expectations of other participants, by attempting to impress them with educational materials or strategies for conducting the lesson. The participants frequently collected inspirational or innovative ideas for task design from their peers' lessons to adopt them in their own:

- My motivation was to deliver a good presentation so that others didn't waste 2 hours of their life participating in a dull lesson. The other thing, equally important for me, was not to make a fool of oneself in front of friends and the teacher.
- (...) and we didn't want others to be bored.

Teachers admitted 'deriving pleasure from lessons', while 'engrossing oneself in the act of creation' or 'being a pioneer in the field'. For others, an essential aspect was the opportunity to 'show one's personality' and arouse curiosity in others by giving educative presentations- 'I wanted to teach other students something they didn't know about the world around them'. Participants approached the classes in the belief that they were, in fact, taking a teaching skills test in their own eyes and in the eyes of their peers. As one teacher noted,

- I wanted the students to derive joy from the presentation and give them something back for their wonderful presentations.

Another key motivation was a desire to generate a stimulating discussion for teachers and learners. To do so, they all developed shared criteria of what topics others would be willing to discuss and find engaging. Consequently, controversy arose as to the methods that might assure involvement. Some also saw the lesson as an opportunity to stop recycling 'all those topics you go through over and over again from high school' and take personal experiences from outside of the classroom, e.g. 'a roommate who was a drug addict' when teaching a lesson on drug-addiction:

- If you deal with something that you personally like you can put more heart into it so that it will look more authentic.
- I also wanted to show that some stereotypes that are deeply rooted in our mentality are in fact shallow extrapolations and have nothing to do with reality.

Thus, 'trying to satisfy others' became a shared pursuit among participants who declared they were also trying to share their personal interests and passions. Educating peers ('making others aware') without being biased ('share a passion without imposing views') was also quite visible in the comments. Though they observed that 'it is the biggest challenge to please the majority ', teachers preparing the lessons still tried to locate themes within the 'materials matching the general interest of most people':

- What is my passion doesn't have to be appealing to others, you have attract 20 or so people so it must be interesting for as many students as possible

The desire to educate others, even in fringe topics that were also personal passions, showed up in the responses, e.g. 'I wanted people to be less ignorant about MRPGs' (Massive Role Playing Games). Some were also reflecting on their current or future practice in schools, saying that 'they have to keep up with their students in terms of technology'. Other teachers confirmed that whereas during the teaching practice in schools they had been opting for 'safer' grammar or vocabulary lessons, in this course they were willing to experiment with new teaching techniques. Competitive aspects also surfaced - participants not only aspired to match their peers in their teaching skills - 'we can be like them if we can do it' - but also they 'wanted to set up a pattern for future teachers' i.e. those participants who would teach subsequent lessons. However, though the results of the follow-up questionnaire offer an optimistic prognosis (see section 5.3.6), the extent to which such gains are transposable to teaching practice in schools requires further and broader investigation.

5.3.2 Connecting results to the literature: Autonomy-motivation

The research proceeded from the premise that the exercise of autonomy is one of the central needs of teachers (Nero, 1985). In order to explore the definition of autonomy as a socially constructed, continual process of inquiry in which teachers engage during their professional activities (Barfield et al., 2001), the course provided a context in which the scope for teacher autonomy was maximised. The participants in the course had to search continually for their own solutions to educational and classroom challenges. Most of them, as we have seen, were

energised by this to such a high degree that their motivation to perform to the best of their ability was greatly enhanced. The course design therefore successfully supported the development of intrinsic motivation, which Ryan and Deci (2000) argue is supported when the specific mix of autonomy, competence and relatedness to others is built into the centre of their activities, which were intended, above all, to add up to a powerfully meaningful whole.

For Gabryś-Barker (2011), autonomy is negotiated by sharing responsibility in the setting. A CPD whose design encourages what Robb (2006, p. 337) calls 'self-directed' learning and uses peers for assessment and general guidance imposes more responsibility on the participants. Teacher qualifications and experience are not without importance as they provide a reliable scaffold to engage others in constructive criticism. Thus, within the context of the institutional CPD, the trainees in the research faced increasingly challenging teaching activities and as a result engaged in learning within peer-relationships in an autonomous environment.

As discussed in the literature review, the increased capacity for professional autonomy assists the transformative character of the CPD environment. This is possible because autonomy is accompanied by the constant need to re-interpret teacher and learner roles. Such interpretation, as demonstrated in Figure 5:1, allows teachers to define their own teaching style, encourages them to take responsibility and enables them to link theoretical knowledge to practice and as a result promotes teacher and student involvement as well as increasing their motivation. Thus, Kirschner et al.'s (2006) claim that minimal external guidance does not bring desired educational outcomes did not prove correct in the setting. Quite the contrary; considering that teachers were successful in guiding each other, it contributed to the realisation of the constructivist potential of the setting.

If Ryan and Deci (2000) are correct that extrinsic motivation may change into self-directed motivation, then once autonomous teachers become intrinsically motivated their use of digital video initially imposed in a CPD course is likely to be voluntarily continued into subsequent practice. In addition, since the autonomy of the setting allowed teachers to target student satisfaction and receive praise for their teaching efforts, it further added to the internalisation of such procedures, which through implementation of ICT can continue once the course is over. The data obtained in the research is consistent with the literature and confirms that autonomy as offered in the ICT CPD course may be a prerequisite of motivating teachers into reflective and self-directed learning through which, as subsequent sections will demonstrate, they were able to establish themselves as more self-assured professionals.

According to Hackman and Oldham (1976), the generation of a meaningful work environment requires the presence of three factors: 1) A variety of skills are gained, 2) The task has a sense of completeness or wholeness and 3) The task has significance for the lives of other people. These

were all successfully met and validated in the project. Likewise, the essentials of Dörnyei and Ushioda (2011) comprehensive account of the prerequisites for the development of intrinsic motivation among teachers were also met. The CPD 1) allowed for an experience of autonomy in a supportive social setting, 2) was built around activities that incorporated feedback and promoted reflection, and 3) revolved around tasks that were meaningful and central to professional career development and, more generally, to life and self-development.

In sum, professional autonomy surfaces as a means of allowing teachers to inspire and motivate their students. Thus professionalism is mostly reduced to the ability to creatively contribute to the course by providing stimulating content in a well-designed lesson as aligned with teachers' motivation. Such an environment triggers creativity, promotes involvement and encourages the taking of responsibility. The findings indicate that supporting teacher autonomy increases motivation and that participants engage in self-determined teaching and learning, thus confirming the findings of (Roth et al., 2007). What is new is the discovery of the importance of CMC in the process and its role in providing opportunities for understanding mutual perspectives and acting accordingly. Thus the role of CMC emerged as a guarantor of reciprocity, resting on the availability of immediate feedback.

5.3.3 The effect of peer observation and CMC feedback on pedagogical practice

5.3.3.1 The nature of CMC comments

The structure of the threaded discussions (CMC) allowed all CPD participants to engage in iterative feedback after each session. Post-lesson, the teachers who had taught wrote reflections on their classes, and other participants offered feedback on the teaching performance. Both teachers and students reacted to each others' reflections, often through multiple posts. In addition, two independent threaded discussions ran concurrently, one of which was attached to lesson plans and sometimes was used as a home assignment by teachers and the second of which was free-standing and featured as a forum.

As the lessons never incorporated an open discussion about the previous teaching, CMC constituted the only chance to juxtapose one's observations with those of others and to possibly incorporate the conclusions into future performance both within and beyond the course. Thus, receiving CMC-based peer feedback constituted a core form of guidance for the teachers and data was analysed to find out the teachers' perspectives on how they approached observation and the subsequent exchange of ideas via CMC.

- All the comments posted on the site may serve as a reliable source of these considerations as they are a priceless mirror of our fears, defeats, thing that could be done better but also bigger and smaller triumphs and generally, things that we can be (and of course, we are) proud of.

However, none of the lessons was labelled as a failure or criticized in a disparaging manner. Typical comments suggested improvements and juxtaposed the lesson observations with the writer's own experience and views on how teaching in a particular situation should be conducted. Negative comments were often referred to as 'insightful', 'objective', or 'constructive' and teachers did not complain about their form, with some praising the overall tone of comments as being a 'balanced, tactful critique':

- I tried to be objective, go through the majority of exercises and write what I thought of them. But I never gave somebody only negative comments as every lesson had some positive points and it would not be fair to criticize somebody vehemently given the amount of time and energy they invested in preparing the lesson.
- In most cases I appreciated the work of others. However, when I noticed some drawbacks I wanted to gently enumerate them.

At the same time, teachers expressed the view that they had limitations in expertise when assessing others, at the same time stressing the value of feedback for both the assessed and the assessing. The lessons were prepared with significant effort, and the feedback normally acknowledged this by being largely positive. Thus, the CMC exchanges offered an insight into the opinions of other teachers and increased the participants' confidence in their own abilities.

- I read all of them and I must say they were very insightful. There was no back-slapping – for some things we were severely criticized.
- I criticized the elements of the lessons that I did not like; however there were very few of them since I was astonished by other students' presentation in terms of the topic, exercises and the way they conducted their lessons.
- Generally speaking, they were true and they helped me to notice the shortcomings of my performance.

One teaching pair called their teaching practice a 'sobering experience' which allowed them to see that the response to the lesson activities they designed were, to their surprise, far from what they expected. They recounted, however, that going through the cycle of preparing, teaching and then receiving peer feedback helped them to think about the exercises from the perspective of receivers. In addition, in the attempt to resolve the tension between a constructive critique

and the alienation of their peers, some teachers posted comments to their peers' feedback which aimed at softening critiques they believed were unjustified or too punitive:

- Some people exaggerated a bit, focusing on minor insignificant mistakes and not mentioning the merits of the lesson at all. But the majority, gave us positive and objective criticism
- ;) I tried to be objective, yet I also tried to underscore the advantages of lessons, as I know that it is really hard to orchestrate such a lesson once you are pressed for time and inundated with a lot of work

Teachers put effort into maintaining a balance between criticism and praise; they often admitted avoiding 'upsetting their friends', (being) 'as helpful and sincere as possible', 'honest but not too harsh', 'supportive and appreciative'. The analysis of the posts pointed to three facets of affective filtering as indicated below:

1. Softening messages- using language of support and accentuating positive aspects
2. Openly tempering others' unfavourable comments
3. Using indirectness by referring to their own experience as a perspective on peer performance

5.3.3.2 CMC as a learning forum

Teachers' reflective statements were praised as a safe means of indicating lesson weaknesses and suggesting avenues for improvement. Some teachers noted that observing others and reading corresponding comments afterwards indicated to them ways of pre-empting many of their own future mistakes. Thus, many participants mentioned learning from others' mistakes and named the particular aspects that they would do differently if they were given a chance to teach another lesson. Some teachers confirmed 'copying or using' activities that they saw worked well in other lessons, applying them in their own teaching without actually plagiarising the content. What appeared as a particular strength of the exchanges was that a teaching pair would normally get comments from each student present in the classes:

- Being assessed by 15-19 people who are not prejudiced is better than one teacher observing the practicum.
- What's more, (...) the group can have a chance to defend themselves, explain why something went wrong or just realize where the presentation should be improved - thanks to that we all can get some important hints for our future presentations.

- Every single presentation was influenced by the ones done before it. If somebody had a nice role-play, other people wanted to imitate the exercise to be successful as well.

Indeed, the reason why 'learning from others' was a frequently stressed aspect of the CMC exchanges stemmed from the course structure, which favoured the assessment and circulation of ideas; observing which tasks failed and which were positively received by the students supported the drawing of immediate conclusions about what participants should use in their own lessons. Some insisted on being original creators, both in terms of topic choice and task design, and not influenced by the lessons of others ('not to repeat what has been done already', 'trying to surpass others'). In their quest to be unique, they were also very pragmatic - confirming that they adapted and recycled some ideas, e.g. a particularly appealing warm-up or role-play:

- I read all the comments and drew conclusions. The quiz was becoming a cliché so we chucked it. The role-play was becoming a routine so we introduced a different idea.
- I took some ideas from their presentations, but I tried to modify it slightly, as I wanted my presentation to be innovative and interesting. I also tried to avoid their mistakes and I think that by this I learned a lot - peer teaching proved to be effective.

Many teachers stated that they learned as much from their peers as they did on their own. In particular, they declared that their lessons were influenced by other students' lessons in the following ways: using the best task ideas ('doing what appeared to be of value and was appealing'), avoiding duplicating peer mistakes (e.g.' inundating students with exercises') while still aiming to be original ('to differ from others'). Sometimes, even if a certain task proved effective, teachers avoided repetition for fear of not being original ('we tried to be innovative'). Research participants also closely monitored peer reaction during the lessons of their peers in order to gather clues about preferred tasks and students' expectations.

Generally, cooperation and cross-fertilisation of ideas before, during and after the lesson were confirmed in the comments; teachers mentioned that 'innovative ideas and concepts were transferred between the groups'. Additionally, teachers were guided both by what they perceived as the failures and successes of their peers' lessons. Some also mentioned a fear of professionally humiliating themselves – 'I didn't want to make a fool of myself '. In addition, some teachers in their reflective statements expressed frustration with their inability to realise their lesson plans. This was noticed by their peers, who criticised quite considerably not the insufficient time for the lesson (100 minutes) but poor time management skills:

- It seems that each and every product (...) was saturated with vast array of activities. The lack of time contributed to the fact that some activities needed to be unnaturally squeezed, discussions were interrupted and brought to an end. We did not have enough time for performing the activities. The lopsided balance between the films and activities occurred also because of the time shortage. Having not predicted appropriately the time consumption of each activity, many of us failed in delivering comprehensive, in the sense of balance, lessons.

Another key trend emerging from the analysis lies in engaging in overt and covert acts of comparing and competing with others while claiming originality ('stretching one's creativity thanks to others' achievements', 'adjusting the model according to what other teachers were doing'). Predecessors teaching their lessons set standards and established points of reference that were verified by all in the lesson feedback and comments on the discussion threads. This design did indeed promote constant comparison and analysis of the participants' own ideas and those of others, both while during and after the lesson, when reflecting via CMC:

- They set some kind of standard that we wanted to surpass and (...) not to repeat what was already done.

Teachers aimed to excel in teaching a lesson capitalising on the best achievements of their peers. Consequently, the teaching model they were aspiring to realise included unique teaching acts - as these were markers of innovativeness, and which emerged as one of the key values. As a result they aimed to achieve a balance between self-expression, satisfying peers' expectations and meeting the formal requirements of the course. This balance was necessary for the crystallisation of the teaching model discussed in section (see figures 5:4 and 5:8).

5.3.4 Connecting results to the literature: CMC and meaningful learning

CMC became a tool for negotiating the lesson assessment criteria, a platform where tensions were created and resolved independently of the tutor. In the process teachers had multiple opportunities to collaboratively solve their challenges and explain their ideas to other participants while examining various perspectives, all of which, according to Ashburn and Floden (2006), add to meaningful learning. Thus meeting the standards created by the group and seeking the appreciation of others were the dominant outcomes of peer observation and feedback cited by teachers who often invested in excess of twenty hours in lesson preparation. The pedagogical flaws which were identified were subjected to self and peer-critique and obtained an educational dimension, confirmed by the participants.

Mutual CMC feedback helps structure the learning community (Roberts, 2006). The pedagogical critical thinking perceptible in the comments, which according to C. Daly and Pachler (2007) is a result of participation in collaborative online discussions, deepened the mutuality and responsibility between the participants. I argue that this critical thinking was imposed by the setting, which necessitated internal structures of guidance in the absence of tutor feedback. Thus, the character of the collaboration in the course increased what Zhao (2005a) calls critical receptivity and what emerged was a novel discourse which used affective filtering as a means to convey feedback in an objective and amicable way. What adds to the literature perspectives is the role of teacher engagement in comparative and competitive actions with peers. Such engagement allowed the participants to attach additional facets, which made teaching more intrinsically meaningful. Thus the participants partially reformulated collaboration into its competitive spectrum while maintaining supportive CMC exchanges.

Teachers confirmed that they learned from others' mistakes and successes but insisted on making original contributions and innovations. The teachers' responses and comments in this setting, characterised by a high degree of autonomy and self-expression in a safe environment, confirmed Richards and Farrell's (2005) observation that deep pedagogical insights are triggered by assuming responsibility. Responsibility is seen both at a personal level, characterised by openness in self-reflections concerning one's performance, and at a group level in assuring an environment which is supportive to peers. CMC positioned in this way adds to meaningful practice by allowing participants self-expression within learning-community approved boundaries. This was further strengthened by the tutor's distancing himself from the traditional role of a leader and allowing autonomous decisions to be exercised, thus motivating peers to collaborate more closely.

As far as the impact of technology on the positive experience of the respondents is concerned, the CMC-based communication platform, and the effects of using it as a response-and-reflection system, was more pronounced. The findings strongly support and exemplify some of the central claims of the literature. C. Daly and Pachler (2007) state CMC has a great capacity to support CoPs and that CMC allows for enhanced intersubjective agency to be exerted, thus fitting within the constructivist framework of learning outlined in the literature review. The benefits of CMC for heightened reflection (Warschauer, 1997) and the development of reflexivity (Moore 2004) are also strongly validated. Schön's 'reflection-in-action' (1983) portrays reflective practitioners as those who have developed an ability to distinguish effective from ineffective practice – something which is clearly true of the case under consideration here. If reflexivity consists, as Moore argues, in the capacity to explore 'initial understandings' through various frames and discourses in order to bring them to new levels of conceptualisation, the benefits of participation in this kind of CMC has long term benefits for individuals, both as teachers and as

people. CMC played a crucial role in the emergence and consolidation of these understandings. As one teacher put it, they constituted ' a priceless mirror of our fears, defeats, thing that could be done better but also bigger and smaller triumphs'.

By demonstrating and exploring the mechanics and effects of CMC in this case, the research makes a substantial empirical contribution to our understanding of the ways in which CMC, when embedded in a teaching practicum, may have strong pay offs in terms of the professional, pedagogical and personal development of the participants, setting up reflexive habits which may endure long beyond the specific experience of being on the course.

5.3.5 Developments in teacher knowledge

The teachers cited cultural knowledge as the key advantage of the lesson, propelling teachers to run extensive material searches in the preparation phase. That knowledge was later processed in a 'natural environment' during class discussions, which were 'not so imposed or artificial'. The written post lesson tasks sometimes assigned by teachers offered the participants an additional opportunity to practice 'regular writing, covering different types (letter, advertisement, article) and diverse topics'. The classes allowed for genuinely interesting exchanges that were closer to situations outside the classroom. In this sense the classes offered what one student described as:

- A much needed speaking practice and are virtually stress-less and are a respite from our everyday school hustle and bustle.
- To prepare a presentation of our interests or of some pressing matters we believed should be discussed– or we had a chance to speak bluntly about taboo subjects.
- The scribbling bank is (...) a great opportunity to practice our skills, express thoughts, let our imagination 'flow'

In addition to what was discussed in the previous section regarding an increase in teachers' confidence in handling digital technologies, only one participant mentioned YouTube and its incorporation into teaching as the main benefit of their participation in ICT CPD, and only three students acknowledged that their technical or computer-related skills increased. It is significant that both in their interviews and the questionnaires the teachers focussed on the development of their pedagogical knowledge (i.e. as increased by lesson planning or teaching) more than on other types.

In the questionnaires, all but one teacher confirmed they benefitted from lesson planning, indicating their gains in the following aspects: 'revising principles of lesson planning', 'realising complexity of teaching', 'organising timing', 'limiting unpredicted situations', and 'using various types of exercises'. Attitudes to planning were somehow different than in prior teaching practice where, as one student noted, 'we wrote plans after the lessons'. This time, a well thought-through plan had become a lesson-rehearsal procedure and a preventive measure taken in the attempt to limit the number of possible pitfalls. In this way the courses provided a chance to rehearse the lesson before it was taught to their peers. Teachers reported a careful administration of the number of tasks, attempting to maintain involvement at a constant level:

- I think that in general I became better at planning things, because I had to plan and re-arrange the order of things so many times and take so many things into consideration
- I started to think about the possible linguistic advantages of the task I am preparing and about preparing interesting lessons during which the students would be eager to learn something.

In addition to gains from lesson planning, teachers cited multiple benefits of conducting the lesson, with the emergent gains split between the personal and pedagogical domains. Many teachers mentioned increased confidence, self-esteem or satisfaction after teaching a lesson. They were able to review assumptions about teaching and put planned ideas to the test. The diagram below summarises teachers' quotes, which have been grouped according to personal and pedagogical gains from the course.

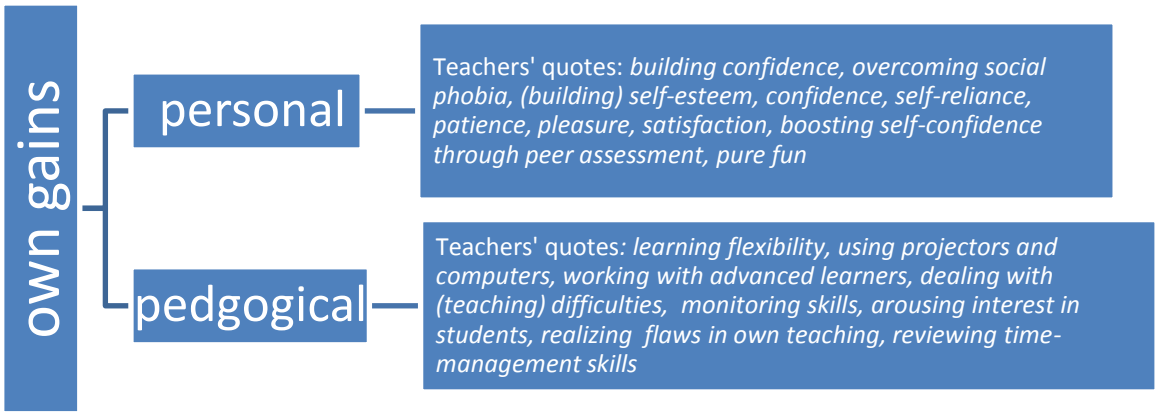

Figure 5:2: Emergent types of gain - personal and pedagogical

When reporting on the perceived gains of their peers, the majority of teachers stressed knowledge about important or controversial topics. Many also suggested that linguistic gains related to an opportunity to practice listening and speaking skills. Cultural aspects were also frequently mentioned as opportunities to further benefit from lessons. Interestingly, novelty and

informative aspects came to the fore; teachers' interests surpassed language-related issues and this language class provided a justification to follow interest-driven classes:

- They acquired some information about the world outside our English-spectrum of interests and honed their listening skills.
- They improved their listening and speaking skills. They also gained knowledge about some controversial issues
- They learned a lot about the topic-for some of them it was the first encounter with the issue! They had interesting and enjoyable exercise, which allowed them to learn new vocabulary, practice reading, listening and speaking skills.

If this is juxtaposed with how teachers perceive their personal gain, an interesting tendency emerges: students are more likely to focus on language and knowledge gain in their peers, which probably tallies with the perceived goals of their lessons. However, when talking about the benefits to themselves, they tended to skip these aspects and focus only on pedagogical and personal development. This is interesting, as all processes mentioned were taking place in participants simultaneously, i.e. teachers benefitted also linguistically and knowledge-wise. Students, in turn, observed the lesson and processed it for subsequent comments and lesson ideas, honing their skills for their 'turn' as teachers:

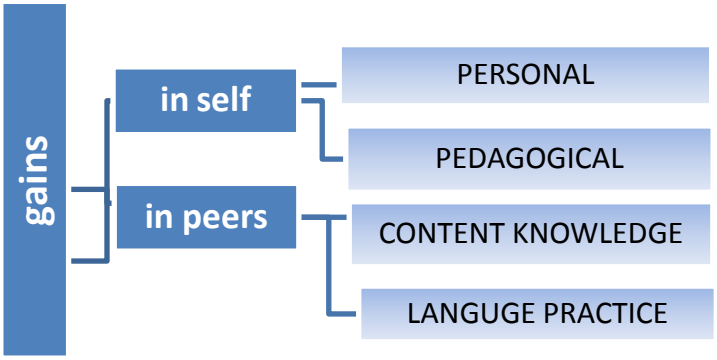

Figure 5:3: Emergent gains for peers and self

Most valued the lessons for the speaking activities such as role-plays, quizzes, and video-based tasks. Again, 'real-life relevance' and successful involvement of the students were at the forefront. In defining the strongest part of a lesson, teachers used other participants' online comments as a way of gauging the value of their lesson. The success was often occupied by a lengthy process of preparation, but many still considered it to be worth the effort - a student commented that 'One activity which took around five or six hours to prepare was, according to the other participants, a tremendous success.'

But the teachers' gains did not come without a price. Most professed a sense of achievement obtained through overcoming pedagogical obstacles in what some of them perceived as a

'hostile environment'. The 'hostility' of the environment resulted from 1) the perceived lack of a clear language advantage over peer teachers , 2) being vulnerable to peer criticisms in terms of inaccurate language use, 3) an extended peer-review of their pedagogical performance, and 4) the challenges and the potential unpredictability of the ICT components of the lessons.

The gains claimed by the teachers were further corroborated by a small follow-up survey, conducted over two years after the course. The results of the survey are presented below.

5.3.6 Post-training effects of ICT CPD on teacher knowledge and beliefs

Ten teachers responded to the anonymous follow-up questionnaire emailed to all traceable participants over two years after the course. All ten teachers who replied were at the time employed, mostly in secondary schools and private language schools. Seven teachers said they were using the YouTube videos in their practice, two said it was impractical or that there was no equipment in their school and one was just planning to start doing it. Some, give reasons for the applicability of the skills they gained in the ICT CPD course:

- Really appreciate your course - for me it was like a dry run, a preparation for being a teacher and it helped me understand the mechanics of classroom interactions better.
- I think it taught me to broaden my thinking and to become much more independent from the textbooks than I used to be. My students also seem to appreciate that they are doing something new, different and more interesting in class and they are motivated to learn.

Respondents recounted that the design of the course, i.e. as peer-run teaching practice, supported a 'friendly atmosphere' in which criticism 'does not hurt so much' , learning from peers ('stealing ideas') and 'testing own skills'. The design of the course was criticised for lack of 'an expert' to 'lead the way or control'. The lead tutor's lack of comments was occasionally criticised as it 'could lead to consolidation of bad habits' and could produce an impression that the trainer was 'just slacking'. Thus, teachers put forward their need for an expert who could help them develop their pedagogical knowledge.

Their motivation to use ICT in teaching English in their workplaces was congruent with the one declared two and a half years earlier and concerned the ability to motivate their students more effectively, to use a more learner-centred approach to organising classes and to increase their own motivation:

- (I gained) the knowledge how to arouse interest in students and how to negotiate certain flexible aspects of lesson and how to adjust ourselves to what was going on in reality.
- This means that the teachers don't have to be dominant in the lessons anymore. The students can conduct the lesson and the teacher can evaluate the process rather than the conclusion.
- (...) technology can be used to the benefit of both the teacher and the students - despite the occasional technical problems, lessons with the use of videos are a great success. (...) You Tube is one of my salvations.

In the open-ended part of the questionnaire, when referring to the benefits of ICT, the teachers mentioned the benefits of being 'more independent of the textbook', having their students' appreciation, and achieving greater memorability of language. Some spoke of developing 'skills in eclectic teaching and eclectic preparation', and said that using YouTube has led them to explore other genres such as 'art, jokes, cartoons, quizzes, readings etc.' All of these add to the development of knowledge in the target language, the lack of which translates into weaker performance during the exams:

- (...) teacher should know how to use technology and should assist Ss in doing it in order to broaden their (knowledge). (...) sometimes the biggest problem with Ss is not lack of linguistic knowledge and abilities, but simply having nothing to say - it's really visible when working with Matura students.

In addition, teachers mentioned generating interest, 'exposing students to culture' and native speakers, and helping to 'stir discussion'. The videos were being used as an addition to rather than the focus of the lesson. As one student noted, the 'procedure is similar to what we've done during our sessions'. The effect of the digital video in English lessons was often brought up. Teachers spoke of 'always getting a positive reaction from students', their students 'loving it' and being 'enthusiastic and excited'. They noticed particular benefits such as the 'non-verbal cues native speakers use' and 'feel of the target culture'.

5.3.7 Connections to literature: developing TPACK in the ICT CPD

Using Nonaka and Takeuchi (1995) construct, as presented in the literature review, the teachers' knowledge was captured in the stages of externalisation and combination. The externalisation of knowledge was facilitated though engagement with peers in explicit discussions concerning teaching performance and combination became realised through the collaborative construction of the teaching model, which is further discussed in section 5.4.6 .Thus, Nonaka and Takeuchi's conception gains another dimension in a CPD setting where technology was one of the leading discourses. This CPD course pointed to the facilitative role of CMC, which supported the externalisation of knowledge (and as discussed in the following sections, of beliefs) and of DV, which tangibly focussed teachers on combining and sharing a range of techniques useful for teaching with this medium.

Zhao et al. (2005c) argue that digital and video technologies offer the teacher more control than other media used in education, both in terms of manipulating content and linking to other resources. This was found to be true, but it underestimates the potential of immersion in visual-content driven activities to spark the creative energies and personal development of the participants in this course. This was a significant finding; the personal and intellectual gains experienced by many of the participants as they reviewed and assimilated many hours of YouTube content turned out to be unexpectedly significant, having the effect of expanding general knowledge and triggering a sense of intellectual excitement that was channelled into pedagogic activity. The language and culture-related content, not the technology that delivered it, was foregrounded.

Many other authors addressing teacher knowledge e.g. (Angeli & Valanides, 2009; Clandinin, 1986; Cohen & Manion, 2004; Daly, Pachler, Pickering & Bezemer, 2007; Elbaz, 1983; Gess-Newsome, 2003; Hubbard & Levy, 2006a; Nonaka & Takeuchi, 1995; Schulman, 1986) focus on the classification of types of knowledge and the relationships between them. Among these, the concept with the strongest bearing on understanding the setting is that of TPACK (Mishra & Koehler, 2006), which focuses on the relationship of various types of knowledge. Examining the three basic constituent parts of the construct - technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK) - the following image emerges in the researched environment.

The necessary TK in the course was quite limited, as it involved connecting a projector to a computer, filling in online forms, using threaded discussions, converting document formats (.doc to PDF), and downloading and playing digital videos. PK in the course was reliant on a previously attained BA in TESOL training and practice and revolved around principles of lesson planning and

teaching fluency-focused classes. CK in the course equated to input and output in English as required by lesson tasks and post-lesson comments in English, together with preparing lessons and completing lesson tasks and home assignments.

However, as noted in the previous section only one participant mentioned YouTube and its incorporation into teaching as the main benefit of participation, and only three acknowledged that their technical or computer-related skills increased. The participation in the ICT CPD was without question a successful means of increasing reflection (Armbruster et al., 1991) and developing ESL teaching ideas (Dhonau & McAlpine, 2002), but in the absence of any very strong attachment or conversion to the technology per se. This tallies with Angeli and Valanides's (2005, 2008, 2009) proposition that developing the knowledge of T, P or C alone does not equal advancing TPACK.

Consequently, it is essential that teachers' development includes progress in all three areas (T,P and C). However, the visual representation of TPACK as presented in section 3.6.3 posits the domain circles in illusory equality between the knowledge of pedagogy, content and technology. Whereas, as it transpires from the results aspects of pedagogy are always present and they guide the elements of content and technology knowledge. In addition, TPACK describes knowledge as a construct consisting of uniform knowledge elements complementing one another. In reality, however, there may be various knowledge configurations with pedagogy underlying all knowledge developments.

Indeed, it is the pedagogy that came to the fore of teacher knowledge development, both in overt declarations and the attitudes de-coded from the CMC comments. Though it is impossible to remove any of the elements of the ICT-TPCK construct (Angeli & Valanides, 2009), I would argue for the primacy of pedagogy over its other discrete elements. This view is strongly promulgated by (Cole, 1999, p. 61), who calls pedagogy 'the DNA of teaching, the deep structure informing, guiding and constituting in all its parts the purposes and execution of teaching'.

Despite the strong claims made by some for the existence and necessity of digital pedagogy (Kalantzis, Varnava-Skoura, & Cope, 2002; Palfrey & Gasser, 2010; Prensky, 2005; Siemens, 2004) the digitalisation of the planning and teaching process and its underlying assumptions may enhance, degrade or have an indifferent effect on the development of successful pedagogy. Bennett, Maton, and Kervin (2008); Lohnes and Kinzer (2007); Pachler and Daly (2006); Selwyn (2009) debate whether current applications of technology really meet the needs of students. Hence, as Starkey (2010) posits, connectivist ideas are more appropriate as they could lead to the development of a separate pedagogy that accommodates the needs of today's language teachers.

Digital pedagogy may have its role when dealing with the constructs of digital environments - TPACK being one. Technologies exert an influence on how teachers think and feel and, as a result, guide their pedagogical actions more than overtly presented declarations or requirements in a way that is neither neutral nor unbiased (Ellefson, Frank, & Zhao, 2006). Technologies make an imprint on the systems in which they are used, with their various inflections in various contexts, and inform and shape both the message and its reception (Schirato & Webb, 2003). Thus, the results which stress the importance of pedagogy in teacher knowledge development encourage a discussion about the need for a critical digital pedagogy being in place, to prevent what Kellner and Kim (2010) refer to as treating technologies such as YouTube as a 'mere toy'. As some participants aptly put it:

- The multitude of rubbish that you have to go through in order to find videos of good quality, appropriate linguistic level and interesting content. It takes a lot of time and is quite discouraging. Then there are always problems with the uploading, downloading and so on. When computers and the internet are involved, then problems always crop up.
- Sometimes you come up with great topic but you can't find videos to support it, it's annoying. Much of your work depends on what you've found.
- Surprising as it may seem, it is not so easy to find a high-quality video connected with your topic. I would not use movies of low-quality, containing unsophisticated vocabulary or explicit language/scenes.

The results point to the fact that while teachers confirm ICT's key role in the course they display the tendency to gloss over issues relating to its precise role, apart from commenting on glitches in the performance of the equipment. Again, the technology becomes invisible due to teachers' preoccupation with the content of the classes and the underlying pedagogical considerations. Moreover, the digital video was not seen as a discrete 'technology' but as a way of accessing and presenting content. Such status approached what Bax (2003) calls 'normalisation' - the state in which technology is integrated in the setting to the extent that it is no longer visible. I construe that achieving this normalisation helps both teachers and students to engage more easily with meaning in environments which are autonomous and ICT-enriched.

The results confirm that the main knowledge gain came through being 'tested in battle', in which they held little if any pedagogical and language-related advantage over other teachers. As a result, they were able to hone their monitoring skills, learning how to act flexibly when the lesson did not go as planned and generating of enthusiasm among peers. The lesson gave them a unique opportunity to have their skills critiqued by twenty peers, and since most lessons were

well-prepared and taught with great effort, teachers were doubly-reinforced by the immediate reaction during the classes and by the positive online feedback later. Thus, their TPACK evolved and developed as shaped by the environment and through the scrutiny provided by peer professionals. By focussing on language and knowledge gain in their peers and on pedagogical and personal development, the teachers pointed to how they understood development in peers and self. The results bring modest confirmation of the development in English, though this area was not specifically targeted by the study. Advances in technology, as discussed earlier, dissolve in the substance of pedagogical progress.

The trainees involved in the research were given a chance to develop knowledge in the areas of pedagogy, technology and content simultaneously, with the underlying intention of supporting the formation of TPACK. But the challenge of creating and integrating T (technology) into PCK (pedagogical content knowledge) is considerable, particularly if teacher beliefs do not align with what they are asked to do as their practice. However, overcoming this obstacle might well lead teachers to become resourceful and/or skilled practitioners who, through determination, are able to forge their own path, by either creating their own materials or successfully struggling with what is available.

The insights from this study confirm that teacher knowledge development happens in all three areas (T, P and C) in the form of advancing the teachers' overall ability to integrate technology in teaching as confirmed by the in-course and post-course results. However, the data obtained points to the role of pedagogy as the organising and leading discourse, and in the fact that the teachers' practice relied not only on their knowledge and skills but also on the discourses of their beliefs, their engagement in the meaningful employment of technology, collaboratively preparing and conducting classes in tune with their professional ethos in such a way as to benefit their students' linguistic and cultural development. Many teachers may settle for a provisional attitude towards ICT use in which it is seen as a dispensable adjunct to 'real' teaching. This observation is confirmed by the results obtained two years after the course, where teachers stress pedagogical development as the subsuming development in the complementary areas of T and C and expressing beliefs congruent with the pedagogy.

Thus, true technology integration involves understanding the relationships between technology, content and pedagogy, while providing room to accommodate one's beliefs (discussed in detail in the following sections). The process of absorbing ICT concepts and integrating them into nascent pedagogical knowledge is not a straightforward one. Teachers have to construct subject-specific ICT-based micro-level methodologies in order to successfully teach a lesson. Gentle inclusion, rather than the 'saturation' of the lessons with software and content, helped teachers to 'metabolise' technology. Future courses would benefit from focussing on the pedagogical

application of content, while taking care to cater to the individual preferences and learning styles of particular teachers, to prevent them from being railroaded by the prescribed syllabus. Consequently, the overall focus during effective training sessions should focus more on the merging of pedagogy and content, enabling ICT to be present in the background as a teaching aid. Conversely, adopting an assumption that mastery of 'pedagogical technology' is a prerequisite to successful teaching with digital media might stall this integration. In other words, it is simplicity of use and the 'invisible' deployment of pedagogical ICT tools that should be informing educational design.

5.4 Teacher beliefs

5.4.1 Introduction

As discussed in the Literature review and in Section 5.3 when considering the influence of CPD on teacher professional development, understanding the developments in their knowledge alone is not sufficient without obtaining a perspective on the accompanying beliefs. Literature insights confirm that the teachers' management of the learning process hinges in many aspects on the beliefs teachers hold and where they locate value in teaching (Ertmer et al. (2012). Teaching, therefore, appears as an act guided by various factors, and despite differences between teacher actions and their espoused beliefs (Chen, 2008; Hallett, 2010; Raymond, 1997; Tragant, 1996) as well as issues in delineating knowledge from beliefs (Woods & Çakır, 2011), teachers draw on their cognitions in the interpretation of educational contexts and in their actions.

The sections below offer an analytical view of the results concerning the nature and changes in teacher beliefs with a perspective on how teacher practice is influenced by them. As an original theoretical contribution, the final part offers a new construct to understand teacher beliefs in technology-enhanced settings. The following beliefs and related concepts are considered in the following sections:

- participants' conceptualisation of a good teacher and good lessons
- pedagogical beliefs
- beliefs about ICT and DV in their CPD practice
- teacher emotional states
- development of the teaching model

5.4.2 Teacher conceptualisations of the 'good teacher' and 'good lessons'

The coding of the references made to ‘good teaching’ yielded four main categories, presented in figure 5:4 below. The chart does not exhaust teachers’ mental constructs relating to being a ‘good teacher’ as there are many possible conceptualisations depending on the setting. Instead, it presents those values and actions that emerged in the situated setting of the enquiry. These descriptions are important as teachers encode into them their personal teaching principles and pedagogical perspectives on the teaching and learning aspects to which they attach value.

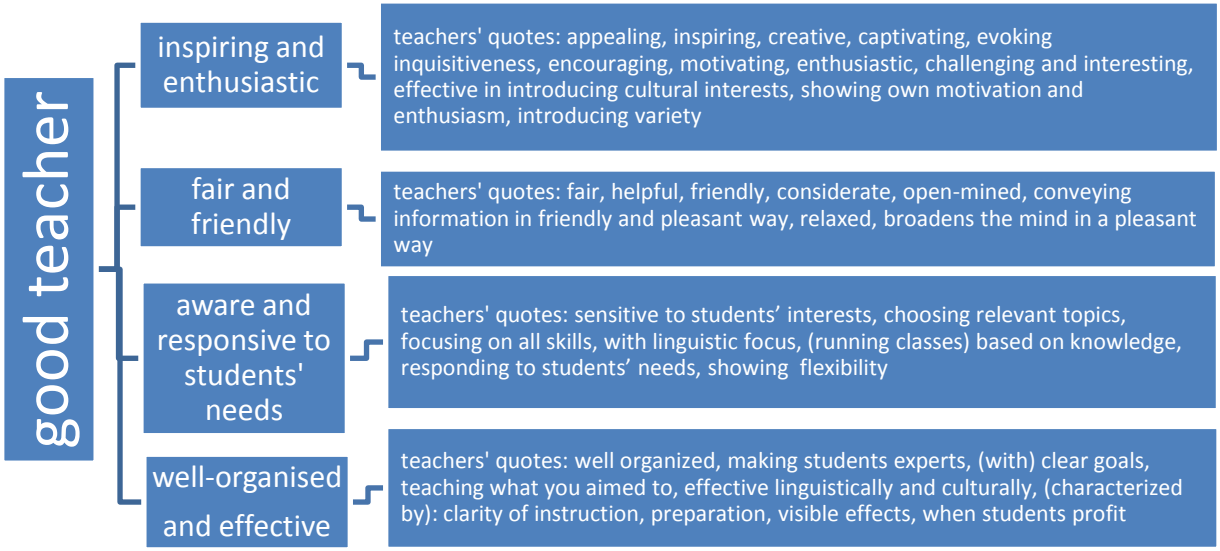

Figure 5:4: Emergent conceptualisation of a 'good teacher'

Synthesising the categories uncovered three affective and one pragmatic. Teachers should be: 1. inspiring and enthusiastic, 2. fair and friendly, 3. aware and responsive to students' needs and 4. well-organised and effective. Building rapport with students (fairness and friendliness, providing them with enjoyment) is the leading discourse. Teaching results and the organisation of the classes is not a principal theme, and students are more willing to take a macro-perspective and focus on affective aspects rather than on ground-level teaching techniques. Strikingly, only one student mentioned a good command of English as a prerequisite of good language teaching. Such focus reflects what is possibly missing from their institutional training - the sense of fairness, passion and rapport-building:

- Well, good teaching should be passionate, motivating and entertaining.
- (...) a teacher is both friendly human being and challenging - the atmosphere in the classroom is relaxed

Thus, an image of a teacher which emerges from the opinions is one of a humane and compassionate professional focused on engaging their students with pleasant and informative language practice. Thus, the teachers maintained involvement though entertainment and imparting cultural knowledge. This explains why the provision of 'content worth discussing' and expanding one's own and others' horizons became one of the universally shared goals of the classes. One student aptly reiterated the point by saying:

- Good teaching can be defined as mediation of input so that it's more comprehensible to students; It's about evoking student's inquisitiveness

The value of lessons conducted by 'good teachers' was seen through the prism of engagement, which was secured through teaching informative, true and relevant-to-life lessons with a clear knowledge gain (as discussed in Section 5.3.5).

Other widely held views of a good lesson involved innovativeness and creativity in task design. Pedagogical practice was considered 'good' when lessons were conducted with interest and when they integrated important ideas from various spheres of life. 'Good' activities and tasks needed to be 'involving' and 'yielding a good discussion'. Engagement, observed during the classes and traced in the subsequent comments, became a gauge for quality of teaching. Other pedagogical values which were mostly indirectly brought up in responses, in fact, adhered to well-established principles in teaching such as typical (recommended) lesson formats, task types or activity sequences.

Indeed, participants shared a belief that most of them had adhered to the principles of 'good teaching', which were identified by many as the overt rules acquired during their methodological training and extended by more implicit notions of enthusiasm, fairness and friendliness, awareness and responsiveness to students' needs while being well-organised and effective. Teachers shared a belief that it was through the awareness of the process ('conscious of every step they took') and meticulous preparation that a high standard of teaching was achieved.

In the follow-up questionnaire (2 years after the ICT CPD course), teachers, when reporting on the qualities of a good lesson and good teacher, again prioritised affective aspects over technical preparation:

1. with sense of humour
2. passionate about teaching
3. strict but not intimidating
4. humane, flexible, on the ball, student-oriented, open-minded

Language and pedagogical competence were either taken for granted or marginalised. The model of a good teacher that emerged from the responses is again one who is understanding, cooperative, humane, patient, fair, passionate, empathetic and helpful. The results confirm a development in their beliefs about teaching insofar as there was a change in the perceived role of the teacher towards the 'less dominant', as a 'partner for the students' and a guide, rather than a 'strict traditional teacher'.

5.4.3 Teacher beliefs about ICT in their CPD practice

Teachers aimed to ensure that the classes featured interesting content delivered through multimedia (video clips, interactive tests, Mp3, PPT presentations), using the course website and the hardware provided in the classroom. However, using technology introduced an inherent element of unpredictability ('what if this does not work here').

The initial reception of the course exposed the teachers' uncertainty, as the course included an online lesson design tool which was described as 'a little tricky' with the suggestion that 'simplifying it would greatly improve its usability'. Some teachers expressed uneasiness about 'too much Hi-Tech', at the same time admitting to being confused, ashamed or fearful when faced with the requirement to use ICT in the form of the course website, the Internet in general or classroom hardware:

- I must admit that I was not really able to imagine the lessons based on YouTube sources. Despite my initial scepticism, it turned out to be great idea that I wouldn't like to abandon.
- The very idea of such classes has astonished me in the first place as very innovating and risky. Much was blurred at that time since the concept has only been developing then.
- We have a unique chance to overcome our fears as to technical devices.
- It was a mundane job to put the lessons on the Internet, but it looked great as a whole afterwards. So, it was probably worth it.

In the view of many of the teachers, the technology in the course was reduced to YouTube and when commenting on technology in the course they often addressed digital video. For example, despite the good clips present in the lessons some students considered some of the sessions to be 'disorganised', 'incoherent', 'messy' or 'monotonous', saying that pedagogical mistakes 'still show'. In the participants' view, the activities and not the videos defined the quality of a lesson:

- Even if a lesson is impeccable, the wrong choice of YT films may spoil the whole work. But if the choice is right, but lesson poor, then the effect is similar – weak presentation.
- It underscores any flaws in lesson planning and interesting videos contrasted with dull activities are even more visible.

Further analysis showed that ICT-enhanced lessons are seen as having two polarized characteristics:

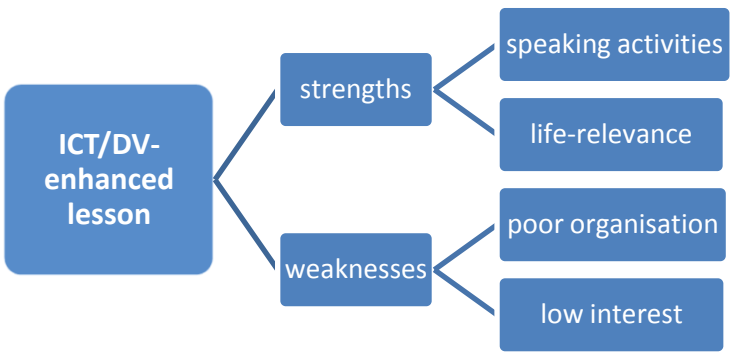

Figure 5:5: Emergent strengths and weaknesses of ICT-enhanced lessons

Strengths emerged in what promoted meaningfulness of the experience: life-relevant experience supported through a choice of engaging oral tasks. Of the comments on other pitfalls during the lesson, two themes stand out: lesson organisation and interest. Within lesson organisation, time management issues were most frequently brought up along with assigning too little time for reading and speaking tasks. They also noted unclear instructions, uneven pacing, overcomplicated tasks, mismatched levels in the exercises, or the excessive number of exercises. As for aspects relating to failure to deliver interesting classes, as the weakest points of the lessons were thought to a lack of variety, low-engagement levels, lack of fun and monotony. This analysis shows that teachers do not remain unchangingly enthusiastic towards new technologies in the classroom but also develop critical approaches and seeing both benefits and limitations of ICT integration.

But when teachers espoused beliefs regarding ICT they claimed a number of advances and referred to their expanding general knowledge (‘learning modern things that are not taught in BA courses’, ‘offering new teaching alternatives‘), learning new particular skills (‘learning how to give clear instructions’, ‘how to handle students’, ‘increasing flexibility’, ‘improving interpersonal and rapport skills’), in a motivating and inspiring environment (‘enhancing teachers’ creativity’, ‘inspiring in creating original lessons’, ‘encouraging to use new tools’, ‘rendering captivating lessons’). Collaborative learning and cultural gains were also mentioned (‘learning from other teachers’, ‘learning from observing others’ mistakes and ideas’, ‘expanding cultural and personal horizons’). The overall message surfacing from the data was one of internalising the link between methodological procedures and the potential of non-educational materials to yield interesting lessons.

- The whole experience has opened my eyes as I am aware now that almost everything can be used as a good lesson material.
- Actually, it’s very thought-provoking ; it made me realize that we can develop quite comprehensive lesson without any traditional teaching materials and it will work. It showed me an out-of-the-ordinary way of conducting lessons, combining knowledge development and fun is possible.
- Basically, it broadened my horizons: it convinced me that teaching does not have to be a mundane task, it can be fun combined with effective learning

However, though the teachers named a number of ways in which their practice benefitted from the new course format, overt and direct references to technology were not frequent. If named, the technological aspect of the course was labelled as ‘non-traditional’, ‘unconventional’, ‘unorthodox’ or ‘original’. This indicates that what could be seen as a relatively commonplace

technology (DV and CMC) became 'original' when used in teaching. The figure below espoused pedagogical benefits of using ICT.

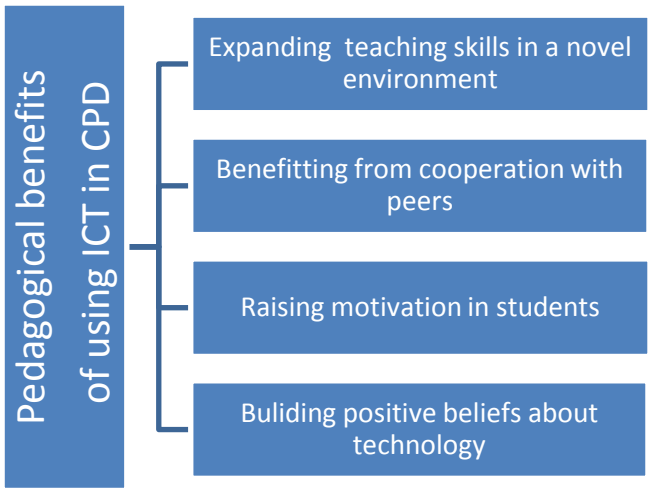

Figure 5:6: Pedagogical benefits of using ICT

Students state that the considerable difference between these and traditional classes lay in the element of real-life-likeness and the way in which their creativity was spurred on by the abundance of online DV materials offering various angles of insight.

- It imbues the lesson with more creativity, various angles of perceiving reality and, as usually YouTube clips are quite varied (even miscellaneous) and they help students get engrossed in what is going on.
- It gives a time for the teacher to breathe and not be in the center of attention for at least a fraction of time. And it constitutes a new level of interactivity still maintaining the spirit of cooperation.
- Introduced a medium that can make people more concentrated than merely reading and listening. And something that people use on their own at homes so they feel somehow at home having it around.

Again, the elements of enjoyment, cultural elements and novel ideas were quite central, and created a noticeable advance over a standard non-DV lesson. However, the main purpose of DV emerging from students' responses is that of lesson facilitation mostly though increasing learners' engagement. In particular, videos were used to perform four main functions: 1) contextualise tasks ('setting up the context', 'preparing grounds for tasks'), 2) build knowledge ('expanding knowledge', 'giving arguments'), 3) create tensions ('polarise opinions', 'provoke a discussion') and 4) offer a reward for participation in tasks (being 'rewarding' and introducing 'entertainment'). Participants also talked about 'stimulating interest', 'arousing curiosity', and 'inspiring peers'. All of the above had a crucial role in motivating students to become involved.

5.4.4 Teacher beliefs about DV in their CPD practice

The figure below summarises conceptual categories emerging from the data on the use of DV on the course (see section 2 of Appendix XI for details):

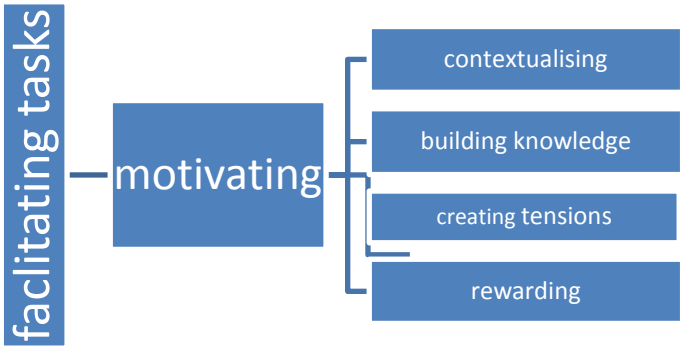

Figure 5:7: Emergent functions of DV in the classes

The effectiveness for task facilitation was believed to be key in the assessment of a particular video clip selection. When inherently interesting video clips were accompanied by poor task design, these stages were very much criticised as a whole, regardless of the quality of the video clip exploited:

- I believe that YouTube-based lesson cannot cover up poorly designed lesson because it was clearly visible that some of the lessons were well thought-of and very coherent while other were disorganized and messy

This also explains why students universally disagreed with the notion that YouTube may camouflage inadequate pedagogy, as that claim would undermine the value of the entire planning process. The beliefs which emerges is that DV serves an auxiliary function to the more central aims of the classes –the circulation of ideas and knowledge through pleasurable practice.

- I chose my clips the way I did because some of them were funny, some of them were bearing high real-life relevance and some were a great introduction for people.
- They were funny, informative, and contained enough language materials to come up with some tasks connected with them.
- They were linguistically advanced and interesting. Broadened the horizons of most people.

It is useful to look at the reasons for choosing DV clips. The analysis revealed five major groups which are corresponded to what the teachers believed would satisfy their peers' expectations and their own self-imposed standards:

1. Language related (e.g. 'good quality of English', 'native speakers' language')
2. Stimulating controversy, (e.g. 'provoking', 'attention grabbing')
3. Expanding knowledge (showing different perspectives, broadening horizons,)
4. Providing fun (amusing, unusual and funny, humorous, fun, informative and appealing)
5. Being usable for the lesson (quality, good video quality (clear, well-shot), appropriate to the topic, useful for the lesson)

Using expected knowledge gain as a filter for choosing videos was a common strategy; teachers declared a readiness to 'broaden horizons' by presenting new knowledge or 'show new perspectives' on familiar issues. In addition, controversy of topic was used as a frequent marker of choice.

- The input we had to work on was different and that was the ultimate thrill! No more dull lessons about deforestation and global warming. We were able to create interesting lessons about things we like to do, not the things that the course book authors like to talk about. Also, the lesson required far more preparation, but, on the other hand, it was a greater satisfaction for us.

Students who gave numerical values stated that between four and six short clips was the optimum, as long as they did not exceed twenty minutes altogether (i.e. 20% of a session lasting 100 minutes). The wording of 'keeping the right balance', 'being just right' , 'not boring the students', and 'sufficient inspiration' suggested a focus on the particular deployment of the video rather than on the videos themselves. Some students justified their critique of what they believed was a superfluous use of clips by saying that when their colleagues used too many videos they tried to 'save themselves trouble', 'transformed the class into boring listening lesson' or created a repetitive chain of 'video-exercise, video-exercise and so on'.

5.4.5 Reports on teacher emotional states and their approach to the ICT CPD course

Studying teachers' beliefs revealed the emergence of their emotional states. For many, designing a lesson around DV and teaching it to their peers was an emotional challenge as the teachers approached the lesson with nervousness and uncertainty though they emerged, in almost all cases, feeling satisfied, accomplished or proud upon its completion.

- Before the lesson I was really stressed. After it I felt a mixture of satisfaction and uncertainty. But later it turned out that the people liked the presentation and I felt completely satisfied.

- Before the lesson I was stressed because I wanted to do my best. After the lesson I was rather satisfied with the results. I think I performed well and my peers comments also satisfied me.
- Before: I was very nervous since I have never conducted a lesson using YT videos, and I have never had to conduct a lesson with a partner teacher. After: I was surprised that everything went more or less according to plan. I was relieved.

When reflecting on their emotions before the lesson, eight said they were 'anxious', 'uptight', 'frightened', 'worried', 'unsure', 'expectant' or 'confused'; in addition, twenty-six participants used the words 'nervous' or 'stressed'. However, after the class, in particular having read the comments, they felt 'rewarded'. Some students also reported feeling 'relieved', 'relaxed' and 'exhausted'. All in all, investing on average about twenty-five hours of preparation to teach a 100-minute intensive and assessed lesson to their peers was a challenge that all but two participants treated as a significant accomplishment in their career.

The initial reception of the course exposed teachers' uncertainty, as the course including the online lesson design tool was described as appearing to be 'a little tricky' with a suggestion that 'simplifying it would greatly improve its usability'. Some teachers expressed uneasiness about 'too much Hi-Tech', at the same time admitting to being ashamed of not knowing how to operate e.g. a multimedia projector.

- I must admit that I was not really able to imagine the lessons based on YouTube sources. Despite my initial scepticism, it turned out to be great idea that I wouldn't like to abandon.
- The very idea of such classes has astonished me in the first place as very innovating and risky. Much was blurred at that time since the concept has only been developing then.
- We have a unique chance to overcome our fears as to technical devices.
- It was a mundane job to put the lessons on the Internet, but it looked great as a whole afterwards. So, it was probably worth it.

When asked in the midterm questionnaire to assess the course website featuring lesson planning tool, teachers gave a mean average of 4.2 points out of a possible 5 (38 answers from 42 students, see Appendix XIII). It was quite symptomatic that teachers tended to blame themselves for not being 'technologically advanced' for the actual software problems. However, with more hands-on experience, the technological aspect turned out to be less demanding than the pedagogical one. Gradually, teachers also began to put forward suggestions for the future improvement of the course website. These usually hinged on simplifying the technological

solutions without sacrificing the variety and flexibility of the lesson planning tool (see Appendix II and Appendix III for the screenshots of the tool).

5.4.6 Summary: the development of the teaching model

The exchange and negotiation of the beliefs analytically portrayed above constituted an important part of the teaching model developed by the participants. I present its key characteristics and discuss its role below.

Through the deliberate absence of a rigid, prescribed educational model, teachers came to challenge and consequently test the pedagogical concepts they were familiar with, collaboratively furthering a situated teaching model, while negotiating beliefs and working on their teaching ideas. Various pedagogical concepts seen in the lessons and critiqued in CMC were adopted and cooperatively developed by subsequent groups, setting up patterns for following pairs to work on and further develop. As mentioned before, technology used in the course was backgrounded, as the participants focussed on furthering the teaching model of a successful content-based lesson.

Teachers verified and extended the teaching model both by exposing peers to new activities (tacit pedagogical input) and by expressing their opinions and beliefs (open pedagogical input) on those already used. Teachers probed the expectations of other students, observing their reactions to the classes taught and examining the online comments about the lessons, looking for clues on how to improve their lessons. It was towards the end of the term that students managed to establish a coherent design model, as they noted that the ‘lessons were resembling one another’. This was due to the fact that students were finally selecting the types of tasks which worked with a number of themes and offered the prospect of a well-received practice, in which the efforts of the teachers were congruent with their idealised notion of a 'good teacher'.

The graph below visualises how the teaching model is positioned as a mediator of these efforts.

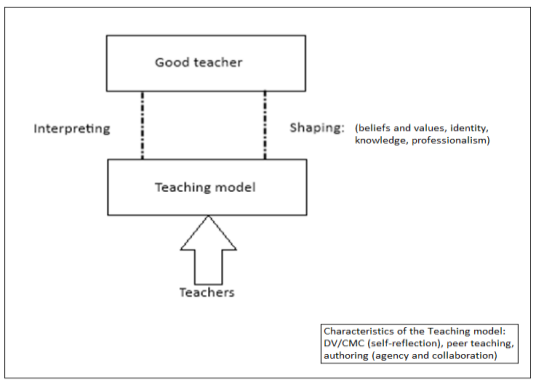

Figure 5:8: The function of the teaching model

In sum, the resulting classes were infused with locally-shared values of meaningful, informative and pleasurable English practice hinging on the use of digital video in a knowledge-centred environment with a clear focus on developing their own teaching skills. An extended perspective on the teaching model may be offered through investigating the lesson plans, since they contain data on how teachers engaged in lesson preparation and the feature contents of their lesson plans. Below I present key emergent features of the teaching model.

1. collaborative CMC encourages self-reflection and serves as a pedagogical regulatory tool
2. the role of technology is reduced to providing content relevant to the participants' interests, beliefs and values
3. the affective dimension of pedagogy is foregrounded with teachers seeking recognition from their peer teachers
4. personally-relevant content provides the impetus for using known technologies - thus developing TPACK
5. the lesson website provides a repository of lesson plans and interlocking pedagogical abstractions

In sum, the relationship between the participants and the teaching model was a two-way transaction with the normalisation of teacher practice emerging during the interaction with the model, which was itself furthered and maintained through CMC interaction, appraisal of peer satisfaction and peer teaching; the teaching model thus acted as a prism for developing personal pedagogies and professional beliefs mediated through collaborative elaborations and reflection.

5.4.7 Synthesizing the case

5.4.8 Introduction

So far we have seen that the beliefs which emerged during the engagement with the data centred around 1) the teachers' conceptualisations of a 'good teacher', which revealed that the participants gave weight to the affective qualities of teaching, 2) 'good lessons' with their central themes of engagement, 3) ICT/DV enhanced lessons critically appraised for their strengths and weaknesses together with the pedagogical benefits, and 4) functions of DV in an ELT class, pointing to its potential for student motivation. In addition, the change in the teachers' emotional states was described, indicating the affective load of the challenge they faced when

asked to perform in front of their peers in new roles. As it was discussed, their beliefs were collaboratively shaped during the classes through observation and participation as well as post-class via CMC in the process of developing the teaching model, which guided the participants' pedagogical actions in the absence of precise requirements.

The core beliefs discussed in the previous chapter pertain primarily to the domain of pedagogy but they are also linked through the context to technology and ELT. For the purpose of the analysis presented below, I examined the data for samples of beliefs which are located in more than one domain (pedagogy, technology and content). In addition, I sampled the espoused beliefs which indicated a change in teacher pedagogical stances towards teaching English using ICT.

5.4.9 The analysis of teacher beliefs

Content representation

In order to extend the discussion and further address the research questions, I examined sample teacher beliefs from the perspective of the context-relevant constituent elements, both implicit and explicit, before juxtaposing the findings with the literature insights. The tables below analytically present teacher-espoused beliefs as evidenced in the discussion in preceding sections. This necessitated an additional engagement with the data and the espoused beliefs are looked at as complex sets reaching beyond single domains of technology (T), pedagogy (P) and content (C). The following symbols are used: '+ +' - strongly espoused, '+' - likely espoused, '+ - ' - possibly espoused as indicated by the context.

Teacher beliefs	T	P	C
I have to mention the flop that occurred during the first part of our presentation- namely the tinkering with the OHP. :) I have to admit that probably I will never be able to control such devices as I am completely crippled in the domain of technology.	+ +	+	+ -
The multitude of rubbish that you have to go through in order to find videos of good quality, appropriate linguistic level and interesting content. It takes a lot of time and is quite discouraging. Then there are always problems with the uploading, downloading and so on. When computers and the internet are involved, then problems always crop up.	+ +	+ +	+ -

It was a mundane job to put the lessons on the Internet, but it looked great as a whole afterwards. So, it was probably worth it	+ +	+ +	+
I believe that YouTube-based lesson cannot cover up poorly designed lesson because it was clearly visible that some of the lessons were well thought-of and very coherent while other were disorganized and messy.	+ -	+ +	+ -
It (DV) underscores any flaws in lesson planning - interesting videos contrasted with dull activities are even more visible	+ +	+ +	+ -
One can use YT materials to ENRICH the content of the lesson not to make it the main and only point of focus of the lesson	+ +	+ +	+ -
It (ICT) gives a time for the teacher to breathe and not be in the centre of attention for at least a fraction of time. And it constitutes a new level of interactivity still maintaining the spirit of cooperation	+ +	+ +	+ -

Table 5:2: Beliefs espoused by teachers

The summative analysis below integrates the themes as noted within the constituent domains.

Technology: The beliefs evidenced above encompass a clear reference to what teachers think about technology. On the one hand, the potential of ICT for classroom use is acknowledged, whereas a number of issues with technology are raised, some of them referring to a lack of confidence or self-belief in teachers' own abilities to integrate technology in the classroom. ICT is posited as an entity independent of pedagogy in as much as it has the potential to make weak lessons better. Technology is viewed as a tool for influencing classroom dynamics.

Pedagogy: The retrieval of technology-mediated content appropriate for use lessons (i.e. applicable for ELT activities) is seen as a challenge. Content alone does not guarantee a successful lesson as it is pedagogy (ELT lesson design) which holds the key. However, once the challenge is overcome the effects are satisfactory. Digital videos perform an important but supplementary function in lessons and ICT allows teachers to conduct more learner-centred classes in which cooperation and interaction between the participants are increased. Solid pedagogy undergirds good ELT lessons.

Content: Although all of the samples in fact concern English, the beliefs about language are less distinctly pronounced in the teachers' statements. However, it can be inferred that teachers believe good content is available online (via technology). Elsewhere, when probed about their reasons for choosing particular DVs, teachers indicated access to a 'good quality of English' , 'sophisticated vocabulary', 'native speakers' language', (adequate) 'language level and (high) linguistic value' as benefits of using video clips. Thus, the beliefs about online content (in English) and its ability to represent language are usually present though not explicitly stated.

Changes in teacher beliefs

An additional angle by which to view the data is to consider the teachers' accounts regarding changes in their beliefs. Sample quotes pointing to perceived changes are presented in the table below. Quotes were selected on the basis of evidencing the change resulting from participation in the ICT-CPD course.

Changes in teacher beliefs *(a sample of direct teacher quotes)*	Pedagogical belief changes (incl. elements of technology and content)
I must admit that I was not really able to imagine the lessons based on YouTube sources. Despite my initial scepticism, it turned out to be great idea that I wouldn't like to abandon.	
It made me realize how useful tool is the computer while teaching so it influences my teaching in the positive way	
I've never considered YouTube as a teaching device but now I believe it is good to have the lesson based on it	
(...) it made me realize that we can develop quite comprehensive lesson without any traditional teaching materials and it will work	
It gave me an insight into a new quite unconventional usage of YT videos. I am aware now that almost everything can be used as a good lesson material.	
It showed me new alternatives as far as the methods of teaching go, taught me ways to render the lesson more captivating for learners.	
I had an opportunity to use some not-conventional methods of teaching and that actually worked.	
It made me aware of the fact that technology is important in ELT and with the use of technology the lessons can be made even more interesting.	
Now after this course, I think I'm not so "afraid" of using video materials (not only basing on "safer" lessons)	
I think it's a very good way of learning not only the language but also of developing teaching skills therefore I would definitely recommend it.	
I (now) believe that interesting Youtube videos could (...) grab the attention of the students, give some new, interesting perspective on the topic; they could be a good inspiration for a discussion or a role play.	

Table 5:3: Changes in teachers' beliefs

As demonstrated in the table above, the teachers' perspectives on the changes due to their participation in the course revolve around altering their pedagogical beliefs. For many, moving from the before-the-course to after-the-course spectrum entailed reconstructing their beliefs connected with the realisation of ICT's potential for the following:

- content representations and conveyance
- yielding itself to concrete pedagogical actions (i.e. class activities)

In the process of restructuring their beliefs teachers had to re-build existing beliefs such as the following, concerning:

- the indispensability of using textbooks as the only 'safe' materials
- the frequent fallibility of technology
- general scepticism concerning the use of ICT and DV in a classroom

In sum, the change that took place is evidenced in the participants' realisation of the potential of ICT and DV for TESOL classes and in their beliefs concerning their own ability to conduct such classes. As discussed in the previous sections, technology-related problems were twofold; some were connected with equipment and others resulted from insufficient training. However, what transpired from these problems, i.e. the teachers' disbelief or lack of belief in the place of ICT in their practice, its usefulness and applicability, constituted the most serious hindrance, which in the ICT CPD course is only overcome by a formal requirement to use the technology. However, teaching practice, and most importantly the CMC exchanges, led to a restructuring of their beliefs around the teaching model, which incorporates rich engagement with technology.

As we see, changes in beliefs take place in the aspects relating to the nature of technology as applicable to ELT. Consequently, what emerges is a bipolar character of beliefs which can either support technology integration (e.g. ICT can be learned and controlled in an ELT setting) or prevent such integration (e.g. ICT is complex and unreliable). Beliefs can contain aspects of all the discussed domains (T, P, C), yet have a different focus, e.g. a more pedagogical one such as that ICT is important and useful in ELT. Thus teacher beliefs exist in overlapping domains and are represented as mental constructs of the following:

- **Nature of technology (T):** e.g. coverage, usefulness and practicality, content representation, issues with use, and learning curve
- **The nature and process of language learning and teaching (P)**: e.g. organization, design and realisation of L2 teaching and learning
- **Nature of the English language (C)**: e.g. complexity, attractiveness, certainty, source of English, and the availability of suitable language material online

Prior to the course many teachers thought that using ICT, and in particular DV, was not feasible as there were too many difficulties, but once the CPD setting was readied for them and institutional incentives were in place they adjusted their stances. However, an important aspect of belief change is that teachers did not acquire the expertise that would prevent them from experiencing difficulties in ICT integration but instead through their own and, vicariously, their peers' experience they realized that the fallibility of technological means does not need to detract from its value in ELT. In other words, the teachers came to terms with the prospect of not being able to fully control technology yet accepted this as an inherent part of its use. This is also evidenced in the teachers' emotional states accompanying IT integration in their lesson, (see section 5.4.5.) which they appraised as overly successful though not without difficulties.

I discuss further aspects of teacher beliefs using the findings from the literature and present a unifying construct in the following sections.

5.4.10 Problematising belief change and linking findings to the literature

The role of beliefs in teacher actions has been discussed by various researchers (Borg, 2006; 2011; Borg & Phipps, 2007; Burston, 2006; Gallo et al., 2001; Garton, 2008; Kinzer et al. 2006) , but the proposition offered in this research, i.e. looking at beliefs though the prism of various interrelated domains (technology, pedagogy and content), constitutes an advance. Williams and Kelly (2006) and Linn and Slotta (2006) suggest that using CMC can facilitate changes in teacher beliefs. The results of this study point to the importance of the affective dimension and if affect and cognition are, as Borg (2006) asserts, interdependent, the question arises as to whether a setting like the one offered may engender the affective factors that facilitate belief change.

The intentional lack of expert guidance in the CPD environment offered a number of serious obstacles and increased the affective challenge to the participants in a way that required them to question their pedagogical beliefs. A good explanation of the teachers' actions can be offered when the results are juxtaposed with the concepts developed by Rosenberg et al. (2006). They proposed that teachers have various competing sets of epistemological beliefs, which are activated when they enter different roles. In my research, the participants had to change between the roles of teachers and students and they had a unique opportunity to unify some discrepancies in their beliefs regarding how their teacher-self and student-self perceive the same phenomena. In such an environment, the participants' epistemological beliefs are put to the test, which can facilitate or inhibit learning and teaching (Pintrich, 2002).

As discussed in the literature review, beliefs are not always representative of professional practice. However, observing teachers engaged in working out beliefs held in relation to technology in educational settings suggests where they place their personal values with regards to technology and may help in harnessing these particular technologies for pedagogical use (C. C. Ching, Basham, & Pianfetti, 2005) and, even more importantly, the conveying of content (Henriques, 2002). In more recent studies on teacher beliefs, (Borg, 2011) also confirms the reciprocal and bi-directional relationship between teacher education and the shaping of teacher beliefs. In particular, he sees value in a constant self-examination of one's beliefs that can be supported by verbalising them (confirmed by Gallo et al., 2001). The results of this course are aligned with this view as the participants had a greater chance for a reflective examination of their beliefs due to the sustained character of CMC use.

The above process encouraged the teachers to make their beliefs explicit, mostly by creating a safe, anonymous CMC-aided environment for reflection. The self-discrepancy theory (Higgins, 1987) provides a particularly useful lens to explicate this process of negotiation. Through CMC discussion and elaborations on the teaching model, the participants compared their actual self with an idealised self (or ought self) relating themselves to a 'good teacher' self capable of teaching 'good lessons'. As a result of this, they rebuilt their perspectives and their accompanying beliefs, taking them closer to the abstract concept of a teacher able to overcome most difficulties and successfully implement ICT. As the course progressed, teachers were able to internalise these new self beliefs and use them as self-guidance in their practice, the effect of which continued as evidenced in the follow-up survey two years after the course.

In addition, a prerequisite for technology integration is that teachers interpret technologies and use them in ways that are congruent with their pedagogical beliefs (Scrimshaw, 2001), and as Linn and Slotta (2006) observe a collaborative forum helps participants support reflection. During such reflection, beliefs become salient enough to be negotiated with peers, and through bringing them to the conscious attention of the participants, and allowing for peer validation, their reformulation is encouraged. This research confirms that such actions are supported if structured around a collaboratively negotiated teaching model.

Throughout the study, I witnessed the teachers' uncertainty and resulting indications of 'presentism' in approaching educational technology. Though the teachers in general did not challenge the place of technology in teaching, at times some of them referred to technology as the 'thing of the future', as though failing to notice their actual engagement. Because the use of technology did not generally reach beyond their skills, most of them had adequate technological knowledge in place brought in from the previous BA in TESOL courses. Yet using ICT in their teaching appeared too large a leap not primarily in terms of lack of knowledge but more in terms

of their beliefs, which first needed adjustment to facilitate this integration. The autonomy incorporated in the CPD course design allowed room for the teachers to integrate their interests and reasons for participating in the course. Thus, the participants were supported in their attempts to make their practice more personal, focussing on a 'humane' aspect of teaching, i.e. addressing beliefs, feelings and emotions connected with the process of design, teaching and assessment.

A transformation in teacher beliefs and values is often brought up in field literature as a requirement for changing practice and developing teacher knowledge. Thus, in addition to identifying how the ICT CPD course influenced teacher professional development, a key question to this research is what the relationship between TPACK formation and teacher beliefs is. Of particular value is the investigation into whether beliefs facilitate the development of TPACK. Perhaps the most useful work here is that of Borg (2006), who points to the importance of beliefs as a prerequisite to expounding an interpretation of teacher actions, possibly illuminating knowledge construction as theoretically framed in TPACK. The findings of this research extend and refine extant concepts of TPACK by pointing to teacher beliefs and identifying the affective domain as critical in shaping teacher knowledge and skills; teachers develop their knowledge in alignment with their interests, beliefs and personal dispositions. In addition, changing beliefs may be a prerequisite for forging links between TPACK knowledge domains. Consequently, if beliefs are indeed central to teacher actions, it would seem crucial to recognise how and why a change in beliefs prompts knowledge change.

Empirical studies confirm that changing teacher beliefs is not easy but that it is possible (Luft & Roehrig, 2007; Raturi & Boulton-Lewis, 2014). New experiences and constant re-evaluation are conducive to such changes (Kumaravadivelu, 2013; Resnick, 1987; Richardson, 1994; 1996) and exposing teachers to alternatives, for example, using CMC, offers a tool to develop and support positive changes in teacher beliefs (Albion & Ertmer, 2002; Marra & Palmer, 2012; Williams & Kelly, 2006). This research confirms the value of CMC in aiding personal reflection leading to belief alteration. However, the findings of the study extend the literature insights by pointing to the advantage of designing CPD training which combines considerable teacher autonomy with an intentionally low level of guidance, which encourages teachers to take responsibility for their own learning.

As the results show, the teachers assumed the roles of self-directed learners and collaboratively challenged and changed their beliefs in view of evidence of their own and peer teaching. I posit this proposition in opposition to Moscovici's (1984) view that conflicts are always resolved in favour of the existing beliefs. This is not always the case if a teacher's belief is juxtaposed against a number of peer beliefs supported by personal experience and that of the other participants. In

addition, CMC supports greater explicitness in belief articulation, and through developing discourses allows easier belief processing.

In the main strand of literature on beliefs, epistemological beliefs - the deeply ingrained ideas teachers have about nature of knowledge - can influence teaching style, and consequently contribute integration of technology, but they are rather general in nature and cannot be used to explain particular instances of ICT-relevant belief formation. Self-efficacy beliefs, the second main strain, are usually based on experience and other existing beliefs concerning technology and thus can only be used as a very indirect and rather reverse way of looking at technology related beliefs.

Self-efficacy is heightened through the successful completion of a task. In turn, task completion is motivating if teachers see meaningfulness in it, i.e. they see it as a valuable educational action benefitting their students. Conversely, low self-efficacy beliefs may inhibit use of technology and may stall the development of TPACK which, according to Mishra & Koehler (2006), best develops through practice. Though self-efficacy constitutes an important construct in understanding teacher motivation and may uncover aspects of their practice, it is not specifically tied to any kind of knowledge or skill and does not adequately explain the conditions under which certain actions are taken. For example, teachers might not possess TPACK yet have high though unrealistic self-efficacy beliefs. They might attempt to use some technology and discover that it 'does not work' in their particular context and still formulate a belief about that technology that would encourage its application in other teaching contexts. Conversely, if a teacher lacks technological knowledge but has PCK efficacy belief, this might be sufficient to structure a well-working learning environment. Consequently, recognising value in ICT may supersede having knowledge in that area.

Empirical studies conducted by Ertmer et al. (2012), Henderson and Braday (2008) and Koptcha (2012) demonstrate that those teachers who see value in technology are also more likely to integrate it in their practice. When teachers hold such beliefs it is tempting to assume that they have the accompanying or corresponding knowledge. This research shows that this is not necessarily the case as teachers may develop vicarious beliefs seeing that others, whom they perceive to be at the same level of professional attainment, were successful in integrating technology. Consequently, they may still lack ICT knowledge but have beliefs that its integration is 1) valuable for learners, and 2) technically feasible. If this is the case, much depends on beliefs (or lack of beliefs) as in either situation they can prevent ICT integration in language classrooms. Hence, out of Ottenbreit-Leftwich's (2010) four variables for teacher change (knowledge, self-efficacy, pedagogical beliefs, and subject and school culture), beliefs appear to have a particularly regulative role. As it can be inferred from the above analysis, pedagogical beliefs

which support technology integration are a prerequisite for developing technological pedagogical self-efficacy and as a result promote ICT integration. However, what still needs to be addressed is the specific character of beliefs in technological settings and their relationship to teacher knowledge.

5.5 Introducing a new belief construct for ICT CPD designs

5.5.1 Introduction

The extant concepts of epistemological beliefs and self-efficacy, discussed in the literature review and in the preceding section, describe certain types of beliefs, but they do not usually explain how subject specific beliefs, especially ones relevant to the researched setting, may be formed. In addition, neither epistemological nor self-efficacy beliefs are quite clearly delineated from knowledge and neither of them act as interim knowledge. Instead they orient teachers in their general pedagogical stances, possibly influencing their choices. Hence there is a gap and a need to address teacher beliefs relating to pedagogy, content and technology. In addition, there is a need for a conceptualisation which would address the leading knowledge construct, TPACK, in a way that both extends and complements it.

Identifying the beliefs which promote or hinder ICT integration is a first step after conceptualisation is completed. Such conceptualisation may allow for better shaping teacher beliefs throughout the initial teacher education and later in CPD. However, the model needs to be extensively tested, which is beyond this thesis. An additional challenge is, as many researchers argue, the fact that teachers arrive at their training with the matrices of past experience and understandings, which strongly influence their learning and practice (Albion & Ertmer, 2002; Borko & Putnam, 1996; Richardson, 1996). Many of these understandings are the beliefs teachers developed many years prior to entering tertiary education, and stem from a variety of backgrounds. What complicates our understanding of teacher beliefs is, as Pajares (1992) concludes, the fact that 'teacher belief' is still a 'messy construct' that requires careful re-conceptualisation. Consequently, a good step towards untangling these beliefs and contributing to the unsolved problem of designing effective professional development for teachers (Borko, 2004) would be to go beyond the field-dominating focus on epistemological and self-efficacy beliefs, and to propose a construct for conceptualising teacher beliefs with a particular focus on ICT environments.

Key insights from the literature review point to the multifaceted character of beliefs stressing that they exist in sets, overlap and inform knowledge development, and guide teacher practice by promoting ICT integration (if teachers believe in its usefulness). The data analysis demonstrated a number of beliefs accompanying teaching practice pointing to their complex nature, multi-domain coverage and uncovered their change in the face of a challenging practice. However, only the final part of the analysis, which focussed on the content of espoused beliefs, revealed how they relate to the context-central domains of technology, pedagogy and English language.

Therefore, in order to derive a more abstract understanding, there is a need for a new construct which can be used in ICT-rich domains and accounts for the complex (and cluster-like) character of beliefs while proposing how they link to existing and well established teacher knowledge paradigms. The advantage of such a construct is that teacher beliefs and knowledge could be understood and analysed in as existing in parallel relationships. This facilitates the identification of discrepancies between developed TPACK knowledge and a lack of beliefs or presence of integration-hindering beliefs. In this way, a major obstacle in implementing ICT could be identified and dealt with through appropriately designed CPD.

5.5.2 The construct

As discussed above, looking at beliefs in separation does not reflect the complexity of the interaction between various teacher beliefs and related concepts. This subsection offers an original contribution by providing a unified view on teacher beliefs as relevant to ICT settings.

Based on the literature insights about the nature of beliefs (summarised above) and the analysis which uncovered certain teacher beliefs as complex sets extending beyond single domains, I propose that teacher beliefs relevant to the integration of technology in educational settings exist either as an interrelation of the discrete elements of these three domains (P, T, C) or as a combination of already present beliefs, e.g. a technological pedagogical belief acquiring a content-related dimension (TP+C).

Such belief formation can be understood as a unified construct and I propose to call it Technological Pedagogical and Content Beliefs construct (TPACB). Due to the dynamic character of beliefs, it is more useful to consider such construct as a temporal interplay rather than a permanent formation. Due to the nature of beliefs, it is also possible that particular domain beliefs may have varied and different levels of explicitness (understood as teacher awareness of these beliefs) within the newly structured interactions. Presented in the chart below are the possible domain-based beliefs: technological beliefs, pedagogical beliefs, and content beliefs

within TPACB. In addition, there are also combinations of the above: technological pedagogical beliefs, technological content beliefs, pedagogical content beliefs.

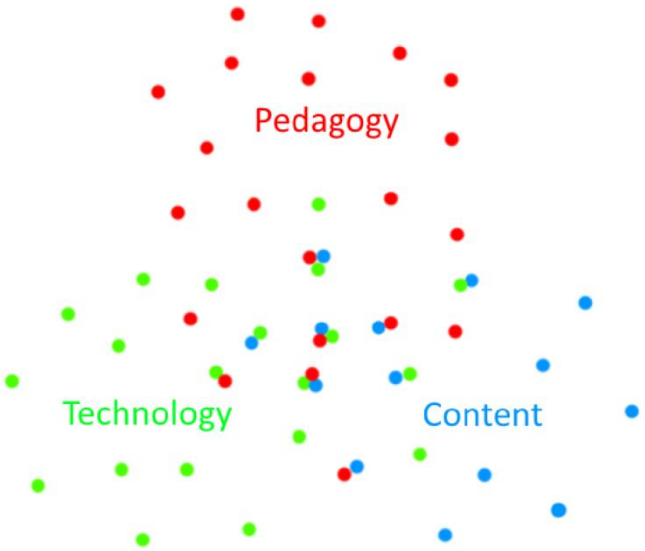

Figure 5:9: Technological Pedagogical and Content Beliefs- a proposed model of their interplay

The core idea within this construct lies in stressing the individual instances of particular combinations of pedagogical, technological and content beliefs. In TESOL, TPACB has a broad explanatory potential and may, for example, incorporate mental representations concerning the efficacy of learning and the teaching of English using technological tools. Thus, self-efficacy relevant to technology should rest on TPACB or at least have a greater chance of developing when TPACB is in place.

The beliefs within TPACB may be represented through various textual formulations and have different levels of specificity. For example, they can be very general in nature (technology helps learning English), very specific (e.g. Preparing Hot Potatoes MCQ tests for tense revision is impractical as it is too time consuming) or mixed (Hot Potatoes can help in exam preparation). They also depend on different aspects of local context (e.g. My students benefit from designing their own Hot Potatoes MCQ tense revision tests but only during our lab sessions, as they learn both through preparing them and sharing and assessing the tests done by their peers). What is important is that such beliefs can co-exist in real or perceived contradiction to one another, e.g. whereas teachers may believe that the Hot Potatoes package is an outdated software with an uninteresting interface and limited functionality, they may still believe that a particular instance of use can constitute a useful intervention (e.g. home-based preparation of vocabulary revision from the assigned readings).

Taking a local context into consideration, it should be noted that for TESOL teachers studying in Polish TESOL institutions, most pedagogical courses are structured around a content dimension (i.e. English language) rather than general teaching principles. The only courses which do not

specifically relate to ELT are the ones in educational psychology. Thus, at the core of the construct are pedagogical content beliefs (PCB) which, in a technology-enhanced setting are extended with an addition of technological belief (TB), forming an instance of TPACB.

Since in educational contexts, teachers often do not hold pedagogical beliefs that are detached from their subject, when espousing their beliefs related to technology, they may often attach to them elements of pedagogy and/or content. In addition, teachers may form belief sets of various coverage, strength and dynamics. These beliefs may collide with other beliefs and rebuild the binding between individual components or form new beliefs. Thus, certain TPACB may subsume other beliefs or be subsumed by them. That is not to say that each belief within the construct consists of exactly one element of pedagogical belief, combined with one element each of technological and content belief. The structure may possibly be more complex yet all of the three elements should be identifiable.

The importance of the above construct lies in the abstract presentation the ICT-relevant belief structure. In addition, what is discussed in the next section, the TPACB construct allows for the explicit acknowledgment of the key role beliefs play in developing knowledge and practice where technology is involved, and thus prevents focusing on knowledge while ignoring beliefs.

5.5.3 Is TPACK an outdated concept?

TPACK has been used by many researchers to understand knowledge construction in teachers. It has also proved useful in this research in as far as the grounded theory lens offers a deeper interpretation of the results by helping to confirm that teacher knowledge development happens in all three areas (T, P and C) but with an additional observation that pedagogy has a regulating role. However, though TPACK is a useful tool in understanding teacher knowledge in ICT contexts, as discussed in the Literature Review chapter, the literature in the field of teacher education falls short of adequately addressing related concepts, i.e. beliefs pertaining to the use of technology.

TPACB refer to the beliefs about the applicability of technological means to assist in language learning and teaching. In the analytical table of constituent parts of TPACB, representations of ' pure' single T, P or C domains in the espoused beliefs are rare though their elements are discernible. The findings of this research indicate that if TPACK is accompanied by positive (and realistic) TPACB a teacher will be more motivated to experiment and possibly risk failure while integrating technology. They are also more likely to involve students in constructivist learning actions.

Moreover, TPACB might provide a temporary supplementation of missing or inadequate components of TPACK. In fact, participants did not learn a lot in terms of knowledge as they all knew adequate teaching techniques. In addition, as participants in the course, they all used YouTube even though they did not necessarily believe it was viable to use this tool in the classroom. However, once TPACK is in place there are many other factors determining its application in a form that is conducive to student learning. Such barriers may be contextual (local teaching culture, career path, syllabus, software/hardware, subject domain, incentives, colleagues, autonomy) or personal (motivation, beliefs, sense of self, personality and character or emotional states). What is key for this research, TPACK though being a useful tool to understand teacher knowledge, fails to acknowledge that teacher knowledge often does not guide teacher practice as it ignores the belief component.

However, further research is necessary to test TPACKAB and find in what ways TPACKAB renders a more complete understanding of the beliefs-knowledge interfaces and their effects on teacher practice. Such research should aim to create tools to estimate the alignment of teacher knowledge and beliefs in ICT-enhanced settings with the intention of improving teacher education.

5.5.4 Technological and Pedagogical Content Knowledge and Beliefs (TPACKAB)

Since much of the literature stresses the overlapping character of beliefs and knowledge, and while it is the intention of this conceptualisation to portray the nature of beliefs in a stand-alone construct, combining TPACK with TPACB (i.e. TPACKAB) yields new avenues for our understanding by addressing the link between teacher beliefs and knowledge in ICT-enhanced settings, illuminating on the reasons for integrating technology which reach beyond context-related limitations. TPACKAB stresses the fact that particular knowledge types are often accompanied by relevant belief sets, so explicating teacher knowledge and practice necessitates addressing belief systems. Thus, what emerges from the results is a refining of TPACK: beliefs are catalysts to ICT use as they facilitate development of TPACK. Beliefs alone cannot guarantee technology integration but the beliefs which are unfavourable may be a serious hindrance despite the provision of other conditions (context, training, knowledge). It is challenging to develop TPACK when teachers hold negative views of the usefulness of such knowledge or of their ability to apply it in their practice.

As indicated earlier, such understanding helps to examine extant beliefs and knowledge in a parallel relationships- i.e. verifying whether beliefs which support ICT integration coexist

alongside the relevant knowledge sets. A reverse order is also useful as it may uncover gaps in knowledge despite the existence of relevant beliefs. In either case, such understanding should inform CPD design as it rests on a well research-backed premise that ICT practice is more likely to be implemented if beliefs are congruent with necessary knowledge (e.g. TPACK). If there is a lack of alignment, for example in case of inadequate knowledge, practice is still possible. This is confirmed by Cheng (2008), who traced one source of discrepancies to incomplete theoretical understanding (i.e. lack of adequate knowledge). However, practice which results from knowledge supported by beliefs is more likely to take place and benefit the participants.

In sum, if we want to explicate what guides teacher practice and the construction of teacher knowledge, we must carefully address their belief systems through courses which allow for their expression while considering teacher knowledge. The findings may then help to shape such forms of teacher training that both cater for existing beliefs and help formulate new ones and thus aid professional practice. This would be particularly important in addressing technology-related beliefs, and possibly in helping willing teachers to confidently and successfully use ICT in their lessons.

6 CHAPTER 6: SUMMARY OF THE MAIN FINDINGS AND CONCLUSION

6.1 Introduction

I traced the answer to the question of how an ICT CPD course influences the professional development of TESOL teachers to changes in teacher knowledge and beliefs. I extracted the data from the teachers' interviews, questionnaires and CMC-based exchanges as the participants engaged in teaching peers using technology. In addition, a perspective on their practice was also offered through the analysis of their accounts.

I discovered that the teachers' actions were directed at fulfilling the goals of the course and at expressing their private and professional selves through the structuring, development and maintenance of a situated teaching model consistent with their beliefs. Teachers went through the rigours of testing and proving themselves on the path to developing their knowledge, skills and accompanying beliefs. Augmenting the teachers' reflective practice with CMC allowed the teachers to develop more positive pedagogical beliefs regarding the use of technology in TESOL. In the process, technology exploited to this end became less visible and moulded itself to the task of meeting pedagogical goals.

Through the engagement with the data analysis, it became evident that the teachers adapted their teaching by critically reflecting on their performance with the intention of making their methods and techniques more congruent with their idealised view of a 'good teacher', and in the process, their personal pedagogies engaged more deeply with their belief constructs. This collaborative and idealised professional identity - which does not normally emerge during conventional practice or training - surfaced in this course, indicating the importance of teacher beliefs. Authoring authentic materials allowed for the creation of tasks which were consonant with what teachers believe is 'good teaching'.

The role of autonomy was confirmed as a guarantor of practice which allows the pedagogical development of teachers in the ICT CPD. The course allowed self-chosen content which encouraged the participants to issues which were relevant to them, thus replacing simulations based on uninteresting or irrelevant topics. CMC was conducive to the process as it encouraged the adoption of the roles of both reflective students and reflective teachers. Operating in the capacity of teachers, learners and assessors engendered reflexive performance and shaped the actions of participants accordingly. The meaning and purpose of the class centred on elevating practice to the level of real life experience, with participants fully engaged in the kind of learning and teaching that would enrich them as whole persons rather than just as students of English.

The technological difficulties encountered in the course teased out the beliefs that similar obstacles existing in schools are a well-justified reason for the teachers' unwillingness to use ICT/DV: 'nobody wants to use them' (i.e. ICT tools in schools). The belief that prevents ICT use, which surfaced in the study, is that ICT is problematic because of equipment issues, and that teachers do not consider it a valid educational resource - even more so if they if they are not given regular assistance. Thus the technical issues highlighted the uncertainty and unpredictability connected with using the technology.

CMC embedded in the course website instilled a sense of accountability for their own work; their efforts were vested in an effort to be seen as teachers recognised by peers for their ability to create valuable and stimulating teaching materials. Finally, the experience of participating in the CMC exchanges constituted a peer-conducted test of one's professionalism.

Throughout the course teachers challenged traditional notions of teaching and assumed a greater degree than usual of informality and self-distancing from traditional teacher roles. By using digital videos, teachers exposed themselves and others to humour, comedy and taboos. Transgressing the traditional boundaries through this self-imposed exposure broadened the 'good teacher' construct in terms of the teachers' understanding of the ethical boundaries which apply during such classes. Reciprocity surfaced as a new trajectory in the teachers' professional conduct. It was manifested through their increasing attempts to continually provide more attractive and better-received lessons. The exchanges aimed at learning how to design a lesson that would help them feel like accomplished teachers while 'rewarding' other participants for their hard work by providing a stimulating learning experience.

6.2 Main findings as relevant to the ICT CPD setting for TESOL teachers

This section offers a synthesis of the findings from the data analysis juxtaposed with the findings from literature. The summary is presented through points which confirm and extend the existing knowledge as evidenced through this research. In addition, features of a new model for understanding teacher beliefs are reiterated.

Confirmation of the findings from the literature:

- Meaningful practice is promoted in an environment where the task carries significance for the lives of other people (Hackman & Oldham, 1976).

- A high level of autonomy supports intrinsic motivation. Intrinsic motivation is further increased in an environment which additionally offers feedback, reflection and meaningful tasks (Dörnyei & Ushioda, 2011).
- Autonomy triggers creativity, promotes involvement and encourages the taking of responsibility (Roth et al., 2007).
- Constant self-examination of one's beliefs is supported by verbalising them (Gallo et al., 2001).
- The sustained character of CMC use increases self-examination, and reflection offers a greater chance for a reflective belief examination (Gallo et al., 2001)

Extension of existing perspectives:

- CMC enables professional reciprocity on the basis of the availability of immediate feedback.
- Minimal external guidance increases accountability for professional actions (Kirschner, 2006). By facing serious obstacles which increase affective challenge, participants are encouraged to question their pedagogical stances.
- Autonomy supports the participants in their attempts to make teaching more personal, focussing on the 'humane' aspect of teaching (i.e. addressing beliefs, feelings and emotions).
- CMC supports the externalisation of knowledge (Nonaka & Takeuchi, 1995).
- Activities driven by visual-content have the potential to trigger a sense of intellectual excitement channelled into pedagogic activity (Zhao et al., (2005c).
- Normalisation of technology (Bax, 2003) takes place through increased focus on pedagogy and engagement in meaningful content.
- Developments in TPACK are guided by pedagogy, which has primacy over the elements of content and technology knowledge (Mishra & Koehler, 2006). The affective domain is critical in shaping teachers' knowledge.
- Development of TPACK is hindered if teacher beliefs do not align with what they are asked to do in their practice. Building TPACK requires that teachers construct subject-specific ICT-based micro-level methodologies in order to successfully teach a lesson (small discrete units that combine pedagogy, content and their best technological representation).
- Technology integration involves understanding the relationships between technology, content and pedagogy, while providing room to accommodate one's beliefs.

- Teachers move the actual self nearer to the idealised (or ought self) (Higgins, 1987)of a 'good teacher' via participation in CMC which is structured around a collaboratively negotiated teaching model.
- Self-efficacy relevant to technology rests on TPACB or at least has a greater chance of developing when TPACB is in place.

Proposition of a new model for understanding teacher beliefs in ICT-enhanced settings

- Beliefs are not guarantors of technology integration but they can hinder ICT integration despite the provision of other conditions (context, training, knowledge).
- Developing TPACK in opposition to negative TPACB beliefs of its usefulness and applicability is challenging
- Positive (and realistic) TPACB accompanying TPACK encourages teachers to take risks and integrate technology despite its potential complexity and unreliability
- TPACB might provide temporary supplementation of missing or inadequate components of TPACK. In fact, participants did not learn a lot in terms of knowledge as they all knew adequate teaching techniques
- Merging Technological and Pedagogical Content Knowledge and Beliefs (TPACKAB) with TPACK constitutes a convenient way of analysing the alignment between teacher knowledge and beliefs in ICT-rich settings

While proposing TPACB as both a stand-alone construct and a complement to TPACK, I do not wish to position it as a monolithic structure with clearly determined boundaries. Beliefs within the construct can be influenced by various factors, including beliefs which do not immediately belong to any of the three domains (e.g. beliefs relating to self or identity). However, the construct attempts to capture a possible interplay between the domains. Future work should continue to verify the construct, both theoretically and practically. I suggest areas requiring further study in Chapter 7.

6.3 How can belief structuring be influenced through CPD design

The key question is how the above understanding could aid in designing ICT CPD training. Below I present a model, which was tested in the course and enhanced theoretically through this research. It presents how one particular application of CPD could be designed to address positive TPACB development and TPACK growth with the intention of increasing the integration of technology in teacher practice despite various contextual limitations.

The implications of the research for TESOL in Poland, and possibly beyond, suggest introducing a new course composed of two subjects that are usually taught separately (practical English and pedagogical methods), and adding the components of peer-teaching (DV and CMC), a prerequisite being some prior knowledge of teaching methods. This new format for an on-site peer ELT ICT-aided practice offers a bridge between language teaching and meaningful pedagogical practice ('do as you preach') for pre-service teachers and also lends itself to supporting CPD for in-service TESOL teachers.

As indicated throughout this research, the course needs to accommodate participants' expression of their values and beliefs by securing a large degree of teacher autonomy in pedagogical actions relating to material authoring, lesson design and teaching. The requirements of the course should not be overly prescribed, as the participants, with the provision of CMC, are most likely to structure and collaboratively develop their own formats of self-regulation through peer feedback and evaluation. A course design such as this enables and encourages avid participation, as the teachers are placed in the roles of participants and reflective observers, whilst relying on themselves and on peers to support the development of pedagogical knowledge and skills. The free choice of topics, digital video, structured peer teaching and mutual feedback in a low-risk environment all feed into the process and play inherent roles in its successful outcome. This blend decreases the disjuncture between the way pedagogical ICT is taught in TESOL teacher training and the way it is actually used by teachers in their subsequent practice.

Most teachers have substantial pedagogical/practical knowledge and need to develop or change those beliefs which help them decide what works and what does not in a particular teaching situation. This said, they need to be given an opportunity to develop their preferred ways of teaching a particular language point or skills through such applications of technologies as are in alignment with their personal pedagogies and teaching styles. What this means for a theory of knowledge is that the construction of knowledge should take into account such integrations of technology as allow for discrete individualised solutions to particular language learning issues. Beliefs development from tacit to explicit thanks to the agentive role of reflexivity (via CMC) which helps interrogate existing stances and juxtapose them with those of other teachers (by peer assessment). This is facilitated through semi-open rather than rigid and prescribed teaching models.

The process of structuring technological aspects of the professional development of teachers must take place both in their teaching practice and in the process of the transformation or reconstruction of their professional identity. Novice teachers hold (mostly tacitly) a precise and quite clear understanding of what they feel constitutes 'a good teacher'. Consequently, the

proposed teaching models must accommodate the current image of 'a good teacher' but be malleable enough to encompass both its own structural development and the teachers' professional growth (which is visible in practice and beliefs). Such teaching models could perhaps constitute the answer to the concern of 'presentism' identified in the teaching practice of teachers who are asked to use technology in their work. If so, this journey has brought me to a much clearer idea of how to help teachers use technology in their lives and in their classrooms.

The graphic below presents the elements of a peer teaching course centred on classes structured around advanced language teaching, the authoring ELT materials and the use of online digital videos.

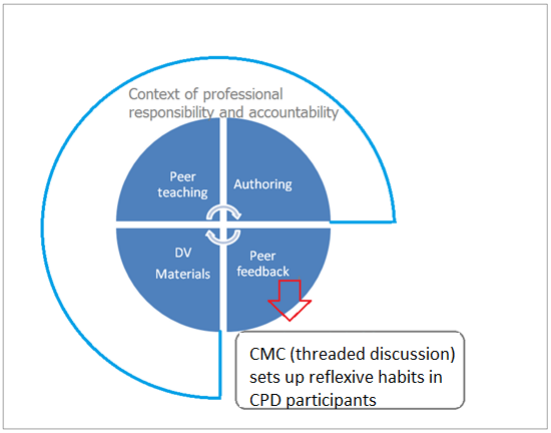

Figure 6:1: : A course model for ICT CPD ELT training

Thus, following the findings of the research, I propose the following methodological construct (teaching model) for an on-site peer ELT ICT-aided practice:

Peer teaching

- Integrated skills English lessons
- Conducting lessons collaboratively
- Each pair taking turns to teach one lesson

Authoring

- Collaborative design of own activities
- Autonomy in the scope and focus of classes
- Digital format in chosen aspects required

Materials

- Based on online DV but self-selected
- Personally-relevant/ informative / genuine

- Shared in an accessible online repository

Peer feedback

- CMC-based, maintaining user anonymity
- 'Looped' (student-teacher, teacher -student)
- Ending with a reflective statement written by teachers

This research investigated the processes surrounding specific uses of ICT in a language classroom with a goal of further facilitating teacher knowledge construction in ICT-aided environments. One major conclusion is that teacher-training sessions should aim to teach small discrete units that combine pedagogy, content and their best technological representation. In other words, it follows that professional development/teacher training schemes may be more effective when particular language learning aims are foregrounded, with specific functions of technological tools simply being marshalled in the service of meeting these micro-level teaching aims.

A teaching-model featuring collaborative practice in a DV- and CMC-rich environment is well justified as it supports the gradual extension of skills, beliefs and knowledge through connectivist 'network creation'. This promotes continuous and extended reflection from multiple perspectives (learners, teachers, administrators), which in turn helps to uncover processes surrounding identity formation and the participants' search for meaning in their practice. Meaning here is understood as being congruent with tacitly and explicitly held beliefs. Once we manage to focus on what meanings teachers assign to their actions and those of their peers, both of which were addressed in this peer-teaching study, then their pedagogical actions, and more importantly the beliefs on which they are based, become more visible.

But above all, the philosophy of such courses has to cater to what turns out to be the pivotal aspect of teacher learning and practice: allowing the participants to pursue and develop their own, personal and private notions of professional identity and professionalism in ICT environs, as one participant put it, to 'really feel like teachers'.

7 CHAPTER 7: REFLECTIONS, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Integrating the data from the analysis of multiple domains enabled me to obtain a more complete understanding of the interfaces of pedagogy and technology in TESOL. I propose that I managed to illuminate some vague or as yet unacknowledged aspects of TESOL teacher experience and of Teacher Training/ICT interfaces. Since I studied the environment in which I worked, I was able to reflect on my own professional practice and as a result understand some of the background processes affecting the educational approaches present in my teaching practice. The research process also offered me insights into what the participants assumed was real and how they interpreted and acted on their view of reality. In particular, I came closer to an understanding of the inter-subjective constructions of their multiple roles, an innovative- at least in the Polish setting -'learning community'.

There are also limitations to such a course. Participating and teaching in this skills-based course omitted any direct language work or explicit linguistic form focus, the focus being on the promotion of fluency and listening practice. Though the course provided general language practice and most students' claimed they had benefitted greatly from their participation in it, the purely language-based development value is unclear. In addition, the transfer value of the pedagogical knowledge and skills gained remains uncertain. However, encouraging sustained involvement through CMC or a course website could foster adherence to teaching principles and help update pedagogical skills. Such involvement will be maintained if the insertion of ICT into the course allows the participants to build content (ELT activities) of immediate applicability in their teaching situations after completion of the course.

In addition, another potentially problematic issue is the lack of experience in the design and conduct of teaching adults at advanced levels. Participants were given no guidance as to how this teaching might be different from previous settings. In some respects, this provided the raison d'être of the course, where participants needed to draw together relevant past experiences of teaching and learning to develop a new model for creating lessons, and thus progress in their teaching abilities. There are also limitations to the practical and theoretical contribution of this study. Considering the formal limitations of the EdD thesis, this research took a possibly overambitious approach in trying to integrate multiple domains. Thus I recognise that this research cannot address the complexities and the nuances of the researched context in full detail and offer suggestions of proven validity beyond the local environment of a teacher training institute in Poland. However, despite the fact that the results are not necessarily directly applicable in better-resourced and theoretically more reflexive educational cultures, what I hope

it offers is a perspective on situated teacher development and some practical advice on designing on-site peer ELT ICT-aided practice for teachers of English. Though this is a potential limitation, there is a need for smaller and limited to local contexts studies, a gap which this research fills.

Although the research answered the questions asked, there were some unavoidable limitations. First, the data was gathered five years ago and considering the time span both ICT and online DV have gained on their educational implementation. In all probability, fewer teachers today would consider it such a novelty in a classroom as the participants of this research did. What it means for the research is that data gathered today are likely to tease out different stances towards the same type of ICT CPD course. Secondly, the nature of the data collected, which was mostly perceptual and extracted from teachers' accounts was an unavoidable limitation. As I explained in Chapter 2, the ICT CPD course was not designed as an intervention to be studied and the decision to research the course came only towards its end, making observations not feasible. Should similar research be conducted again, collecting baseline data, which was not possible in the case of this study, would allow limiting the number of sources and streamline the process of the study. However, the lack of observational data was partially countered by the study of provided artefacts (lesson plans, including lesson materials) and breadth of other data sources including interviews, questionnaires and CMC posts. In addition, considering that the final focus was on teacher cognition and in particular teacher beliefs, which cannot be observed directly, the nature of data gathered fitted the needs of this study.

Another limitation is connected with the use of GT. Using GT meant delaying the initial literature review, which poses a considerable risk in that engagement with the leading theories and paradigms in the field is postponed until the late stages of the research, possibly limiting the avenues needing exploration. On the other hand, GT offers a researcher professionally immersed in the studied environment, a chance to have a fresh look. In its restructured form this research gained the best of these two worlds since once the key themes were identified through deliberately broad exploratory questions, a more focussed literature review was conducted and new focus delineated. The research then entered its new trajectory, allowing for an original contribution which was previously only limited to confirmation of the already known facts. Additionally, though this process was by far more laborious, it allowed for a clear gap to be established in relation to the studied environment and my interests.

In retrospect, the following brief compilation of teachers' enthusiastic opinions, gathered from the teachers' mid-term feedback of the course only acquired particular significance once the research had been completed: 'We really felt like teachers' because 'we never planned lessons so carefully' and, as a result, it 'helped us solve teaching problems' and 'we could finally talk,

joke and think in English'. It was 'enjoyable but time-consuming' and 'fascinating because I learned a lot'. It was 'really difficult to prepare the classes' but the 'videos gave us guidance'. I suggest that this collage of opinions reflects the reality of the course I investigated.

Future research should be focussed on the delineation of particular two-area beliefs (TP, TC, PC), for example on the mechanism through which they can form TPACB and on the exploration of the relationship with TPACK. Particularly worth investigating are a particular instances of knowledge belief interplay within a specific subject domains. Creating theoretical depictions of such interplays could then lead to designing teacher training clearly addressing their beliefs and knowledge in an integrative way. This is important as there are many possible ways for the elements to interact. For example, a particular interplay may not feature the technological knowledge element. However, as discussed above, a technological belief can act as interim knowledge and the entire set can be still conducive to implementation in practice.

In addition, in order to understand the link between TPACB and practice, research aiming to identify which TPACB are conducive to the integration of technology and which hinder its use are necessary. In addition, creating metrics to investigate TPACKB beliefs would be the next move to validate the applicability of the proposed concept to the studied environments and to facilitate the application of the construct in order to estimate the alignment of teacher knowledge and beliefs in ICT-enhanced settings.

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APPENDIX I: Maryska's and Szczepan's pen portraits

Maryśka (female, name changed). Maryśka is twenty-two. She decided to take this extramural weekend course as she is fully occupied in her job as a teacher in a private language school on most weekdays. She believes that gaining an MA will open a new door in her career. She treats her private-language school job as temporary one, as she does not feel it provides enough financial stability and is not predictable in terms of re-employment. She also gives private lessons to younger children commuting to their houses on some weekday evenings.

Maryśka is an enthusiastic and diligent student who is determined to become a teacher and have credentials allowing her to run classes beyond the primary level- that is why she chose further training in the methodology of teaching English as her specialization. The impression she gives in class is a very positive one - she always attends the meetings and is well-prepared and willing to contribute in the lessons. Her proficiency in English is very high and with some preparation she would be a viable candidate for the Cambridge Proficiency Exam. Despite this, she complains of having some language related inhibitions, particularly in speaking with foreigners. She has concerns about her final practical English exams, particularly the reading and vocabulary sections, and the oral exam. She views studying in the Institute favourably but believes that there is an excessive load of advanced vocabulary items to learn, without any real opportunity for their use. She also expresses the wish that classes featured more speaking activities as this is the skill she is unable to practice on her own. She states her preference for this type of course as it is 'more relaxing' than her others and provides her with a chance to activate language in a communicative environment.

Szczepan (male, name changed). Szczepan is twenty-four. He has enrolled in this course alongside the one in the political sciences. Since he already holds a BA in teaching, he had no interest in furthering his qualifications and thus he had decided to take the literature specialization. He knows he will still complete some ELT methodology courses as a part of this degree but he is glad they will not be the main focus. Szczepan is not officially employed as a teacher but he gives some private lesson to provide for his financial needs. He has little interest in finding employment in schools but he is not ruling out the possibility of seeking a university position as a tutor in the ELT department once he graduates from his two faculties. He says he has ambitions to take up a doctoral course then.

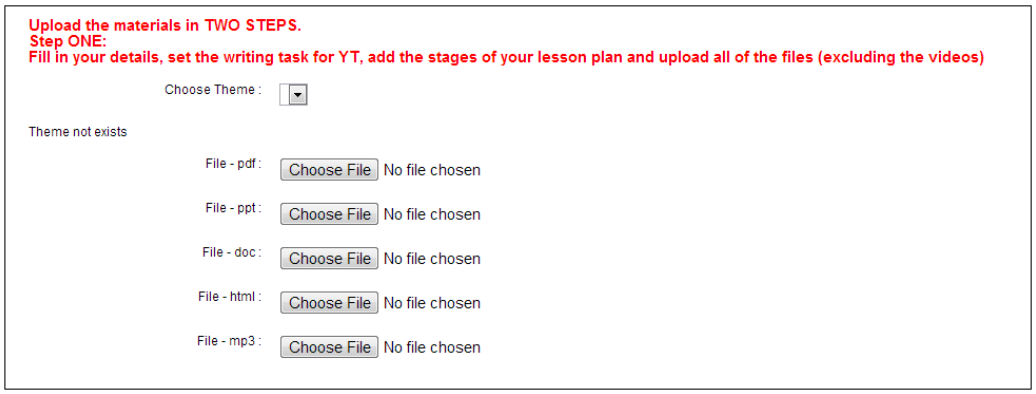
Szczepan willingly contributes in the classes as his main motivation is to maintain his level of English, which is among the highest in the group. He is very serious about his learning and wants

to feel that spending every minute is of benefit. The final exams are not the chief incentive as he does a lot on his own to expand his command of English. In the classes he usually remains quiet but always dutifully engages in set tasks. Being quite self-assured, he is not afraid to express his opinions when asked. Szczepan perceives the classes as an opportunity to obtain new knowledge through English. The lessons he prepares for the course are focused, as he says, on ’educating others’ on various topics. He believes that ‘learning through English’ is the best practice the advanced students can get.

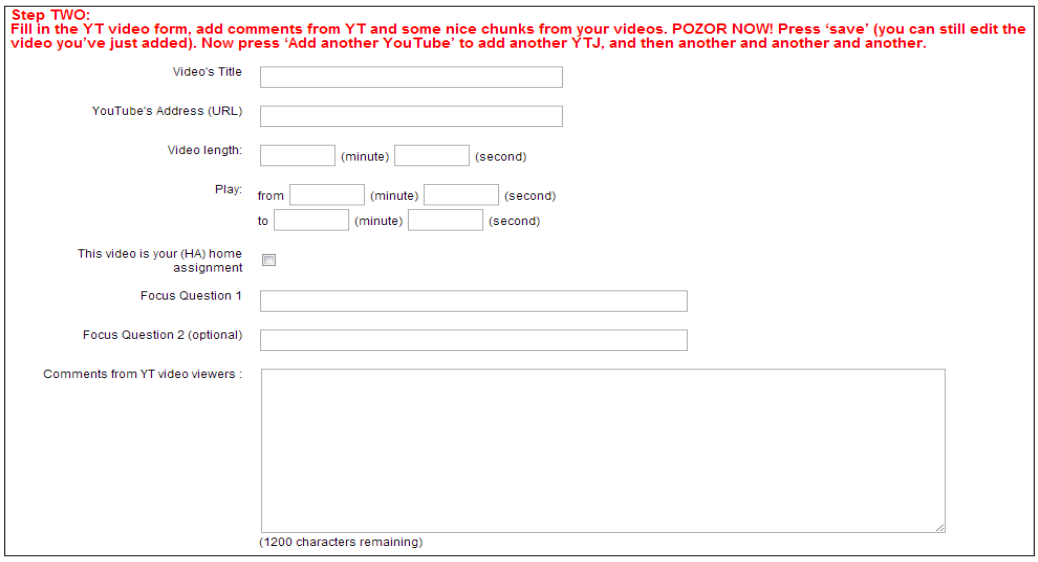
APPENDIX II – Online lesson planning form (backend)

See Appendix III for the online lesson planning tool (frontend).

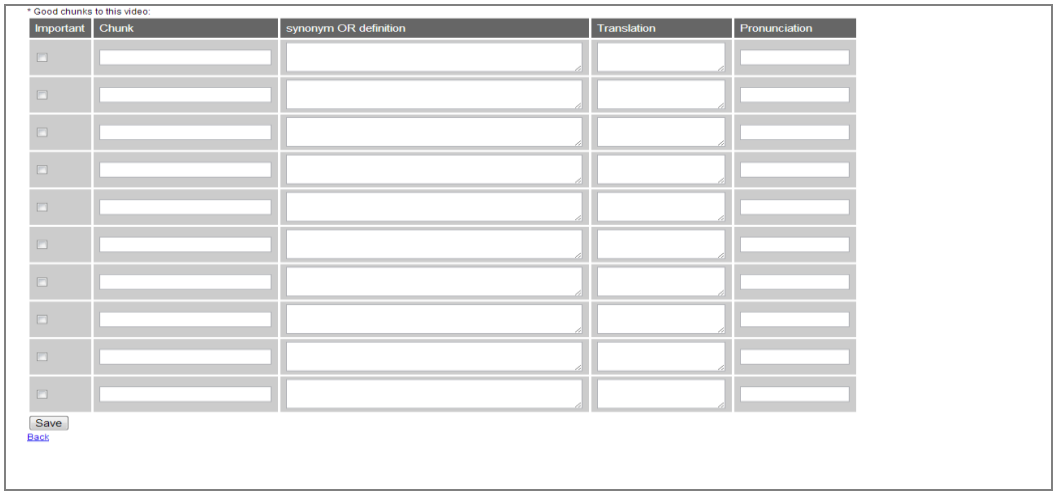
Screenshot 1: Lesson themes, lesson plans and accompanying files (Mp3, PPT, images)



Screenshot 2: Videos, focus questions, comments from YouTube users



Screenshot 3: Video glossary builder



APPENDIX III: Features of the online lesson planning tool (frontend)

See Appendix II for the online lesson planning form (backend).

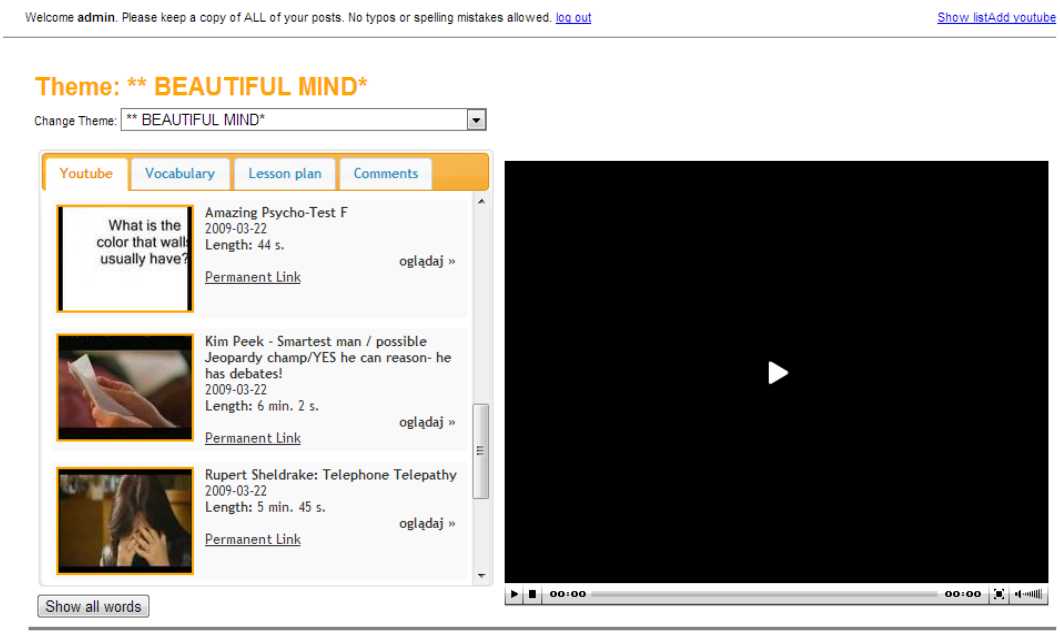
The features of the online lesson planning tool:

- Aim/benefit of the lesson (e.g. linguistic, cultural)
- Full lesson plan with student interaction patterns
- Materials and links to YouTube videos (or excerpts from the videos)
- Plan B - in case there was no access to the Internet or the equipment failed
- Focus questions for each video (displayed above the videos)
- Chosen comments from other YouTube users (copied/pasted from YouTube)
- Video glossary (translation, synonym and definition of a word) to supplement more difficult videos
- Brief lesson plan (Generated automatically)

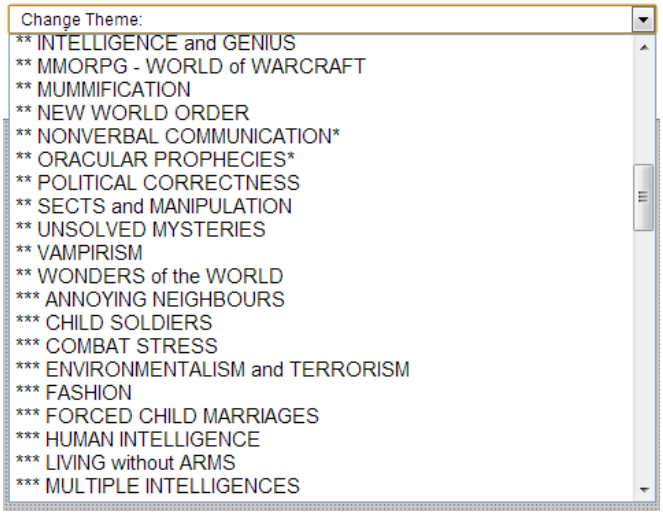
Sample screenshots:

Screenshot 1: The Video section:

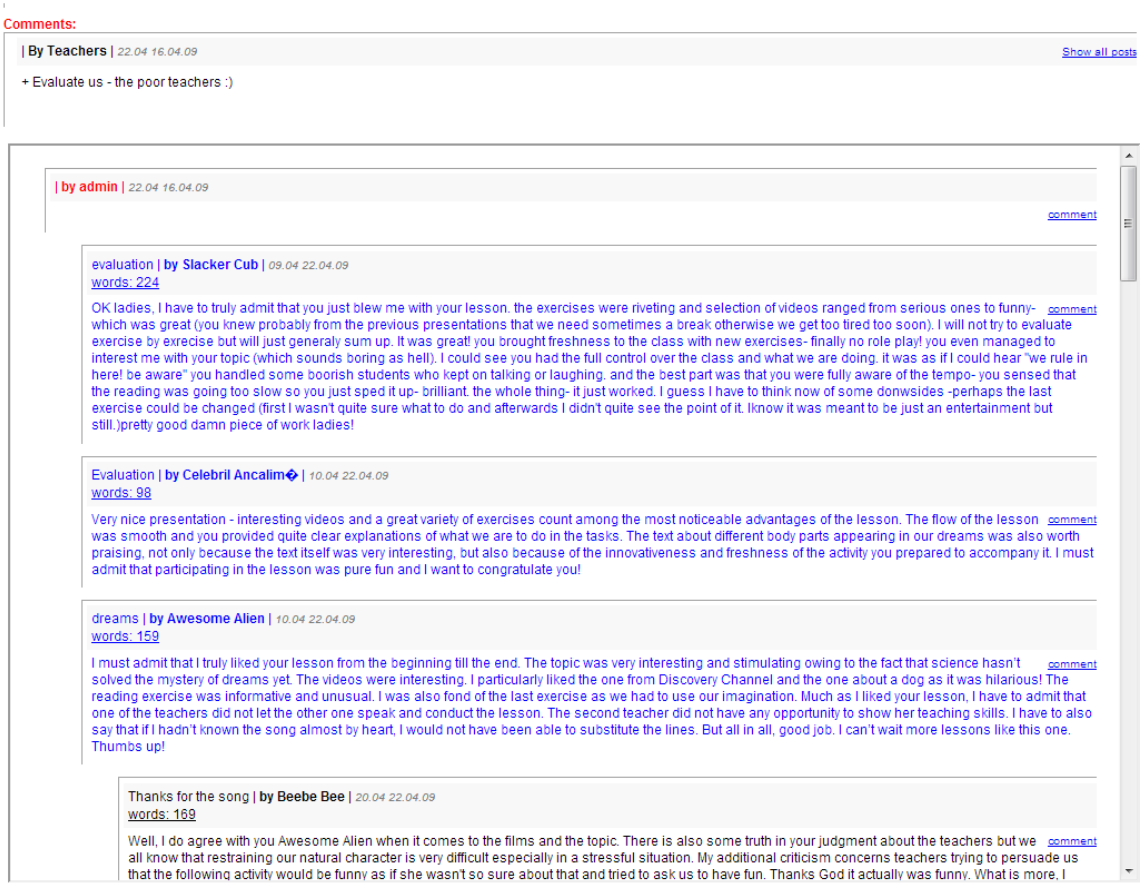
- Theme selected
- Tab 1: DV selected (selection of all lesson videos below)
- Tab 2: Video glossary- vocabulary
- Tab 3: Brief lesson outline
- Tab 4: Selected comments from YouTube
- Focus question (not displayed)
- Video player



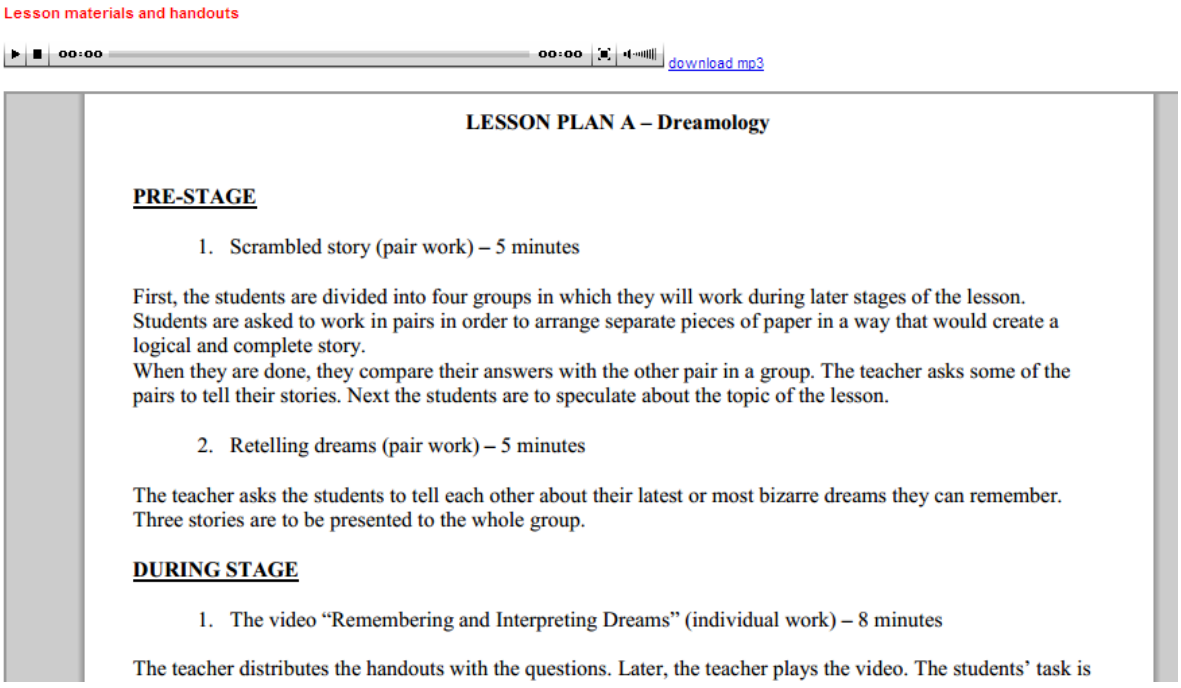
Screenshot 2: Sample selection of lesson topics available in the lesson planning tool



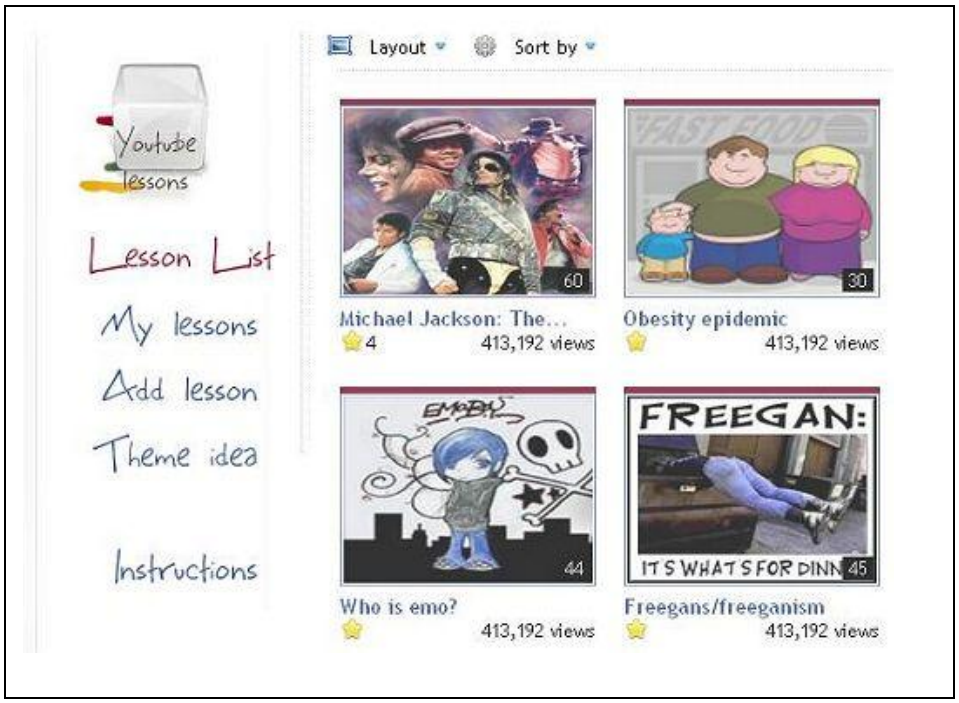
Screenshot 3: Sample peer feedback and teacher comments about the lesson (Discussion thread 1). See Appendix XIII for a selection of raw data from the tool.



Screenshot 4: A sample beginning of a lesson plan with an accompanying Mp3 file (top of the screenshot)



Screenshot 5: The second upgraded version of the video section (see screenshot 1 for the original version).



APPENDIX IV: Alternative methods considered

One other method that could be employed is an extended case study method (Burawoy, 1998). However, one of the main strengths of this method - continual prediction making and reconstructing theory during the field work (rather than afterwards) would constitute a serious handicap in the research design I employed; the wealth of the data, the limited availability of participants and the power relations between them have prompted me to do the main analytical processing only after the field work has been conducted. Burawoy writes that theory is not discovered but reconstructed and a researcher using the extended case study method works on and develops an existing theory rather than discovers it (Burawoy, 1998). This rejection of one of the main tenets of GT refers mostly to the works of earlier writings of Glaser and Strauss (1967-1987), whose work has been developed since then by e.g. by Charmaz (2000, 2006), (Clarke, 2005) Dey (1999), Glaser (2002) Strauss and Corbin (1978).

Another possible alternative method to grounded theory would be a discourse analysis method as it offers an opportunity to enact social and cultural perspectives and identities (Gee, 2005). What with the design of the research being located in the constructivist tradition, the discourse analysis method could provide interpretations of the research context and accompanying participants' belief systems while reflecting on the researcher positionality (Rogers, 2003). However, the quantity of data and numerous sources used in this study means the use of such a method would result in an unduly protracted and possibly unwieldy undertaking.

Additionally, some data sources that were gathered in the process of research – such as lesson plans, materials and online tools do not allow for a straightforward application of the discourse analysis as the focus of discourse analysis is various forms of written and spoken language rather than e.g. visual artefacts which were the materials used during the lesson. However, where the discourse analysis would be particularly valuable were the recorded and videotaped group interviews, whose analysis might make more salient any hidden meanings expressed by the participants, especially the ones relating to the power and control relations. Alternatively, the textual data, (in this case the exchanges in the forum), could be studied by using content analysis (Prior, 2003; Silverman, 2006). If used, this approach would necessitate the inclusion of communication models to trace the influence of the CMC (computer mediated communication) on the format and content of online exchanges.

APPENDIX V: Presentation of data characteristics

Section 1) Data sources, purpose and ways of processing

Category of data source	Name of data source *(go to Section 2 for a more detailed description*	Number	When created/ conducted	Word count (rounded)	Purpose of use of and general ways of data processing	
Initial sources of data used to generate ideas and test tools	a. Mid-term feedback	40	Towards the end of term 1	2 000	Generate ideas for interview and questionnaire questions	Summarized and synthesised, hunches noted, results integrated with other initial sources
	b. Observation notes	5	Towards the end of term 1	1 000	Generate ideas for interview and questionnaire questions	Summarized and synthesised, hunches noted, results integrated with other initial sources
	c. Pilot group interview	1	At the end of the term 2	4 0 00	As corrective to interview	Examined for repetitions and redundancies or gaps, hunches noted
	d. Pilot online questionnaire	2	At the end of term 2	3 000	As corrective to questionnaire	Examined for repetitions and redundancies or gaps, hunches noted
Primary sources of data used to provide the core material for analysis	e. Discussion thread 1: Posts about the lessons (term I)	45	Towards the end of term 2	16 000	Elucidating the answers to the research question	Coded, synthesised, categories extracted, key quotes gathered, memoed, merged with other sources, hunches gathered
	f. Discussion thread 2: Comments about the course (term I)	45	Throughout term 1	44 000	Elucidating the answers to the research question	Coded, synthesised, categories extracted, key quotes gathered, memoed, merged with other sources, hunches gathered
	g. Discussion thread 3: Posts about the lessons (term II)	45	Throughout term 2	65 000	Not processed	Not processed- excluded from the analysis
	h. Online questionnaire (about terms I and II)	40	At the end of term 2	40 000	Elucidating the answers to research question	Coded, synthesised, categories extracted, key quotes gathered, memoed, merged with other sources, hunches gathered
	i. Group interview (about terms I and II)	7	At the end of term 2	24 000	Elucidating the answers to research question	Transcribed, coded, synthesised, categories extracted, key quotes gathered, memoed, merged with other sources, hunches gathered
Additional sources of data	j. Inventory of video clips (terms I and II)	235	Throughout term one and two	2 000	Added as result of theoretical sampling	Examined for themes, length and amount,
	k. Lesson plans (terms I and II)	38	Throughout term one and two	10 000	Added as result of theoretical sampling	Examined for congruence with actions declared by the teachers, examined for themes, task types, interaction patterns, hunches gathered
	l. Lesson-planning tool	N/A	Created: The beginning of term 1	N/A	Added as result of theoretical sampling	Considered for implicit and explicit methodologies, hunches gathered
	m. Follow-up questionnaire	10	Over two years after the course	350 0	Added as result of theoretical sampling	Coded, synthesised, categories extracted, key quotes gathered, memoed, merged with other sources, hunches gathered

Section 2) Initial, primary, secondary and additional sources presented in greater detail

Initial sources: mid-term feedback, observation notes, pilot group interview and pilot online questionnaire

a. Mid-term feedback: A brief satisfaction survey was given between term one and two, requesting students' suggestion for improvement, an assessment of own and peer work, and opinions about continuing the format of the course in the second term. The mid-term feedback questions and sample answers are available in section 1 of Appendix VI and section 1 of Appendix XIII.
b. Observation notes: The decision to conduct the research was made in the second term with the draft of the proposal only completed by the end of the second term. Consequently, I managed to gather only five observation notes corresponding to the last 2 and 3 sessions of each of the two groups, respectively. The notes were rather loosely structured representation of procedures and tasks used by students with comments regarding alternative pedagogical choices. I attempted to focus on the DV with its attendant technology and made notes on class management.
c. Pilot group interview was semi-structured, lasted over one hour, and I spoke about sixty times and asked over fifty questions. I conducted this interview with two Slovakian students who were leaving Poland immediately after the last classes. It was designed to pre-test the questions for the subsequent interviews, to see what kind of responses the questions it provoked, and to establish the core set of questions. The preliminary set of questions was based on the themes that were emerging during the study of the mid-term satisfaction questionnaire. The pilot group interview, observation notes, and preliminary analysis of student's comments about the lessons were used to locate themes to be explored, hone the questions and help decide on the adequate sample both in subsequent interviews and in online questionnaires..
d. Pilot online questionnaire was conducted on two Erasmus exchange students and one Polish student who participated in the course who were leaving before the end of the term. The pilot questions were based on the comments received from the students after the first term and the five observation notes. The online questionnaire questions are available in section 3 of Appendix VI.

Primary sources: discussion threads 1-3, online questionnaires, and group interviews (used to provide the core material for analysis)

e. Discussion thread 1: Posts about the lessons (term I) were posted throughout the term, as they constituted part of the requirements for the course - hence their number is equal to the total number of sessions conducted in both groups in the first term (21 sets). Though there was no word count minimum or maximum, they usually varied between 150 and 250 words per comment. They come in defined sets attached to each lesson, as each participant was to comment on every lesson using the suggested criteria and adding any additional comments they thought were necessary. The sample posts from discussion thread 1 are available in section 2 of Appendix XIII.

Teachers' and students' comments were not divided into separate groups for the analysis but were kept in the original order. Consequently, extricating what a given person is saying as a student (i.e. a language learner) from what they are saying as a teacher was not feasible. Students responsible for teaching a given session also left their comments in the form of the reflective statements after reading all comments left by their peers. All comments but for the teachers' (who were last in that process) were anonymous since their names were coded by the system and comments were only posted from home. The discussion threads proved to be the interesting data source to process, with attitudes and emotions captured at the time of writing.

f. Discussion thread 2: Comments about the course (term I): This thread was open towards the end of the first term and the students were asked to put forward their opinions about the course and suggestions for possible improvement. The sample posts from discussion thread 2 are available in section 3 of Appendix XIII.
g. Discussion thread 3: Posts about the lessons (term II): Similarly to term one, students were asked to write posts on their peer lesson all throughout the second term. As explained earlier- this data set was subsequently not included in the analysis.
h. Online questionnaire (about terms I and II): This extensive (46 questions) online questionnaire was given at the end of second term and for easy access was sent in the form of a link. The questionnaires teased out issues relevant to the points outlined in the theoretical and methodological parts of this research and provided the most comprehensive source of data. To an extent it addressed the issues raised in the discussion threads. The respondents did not need to identify their gender, the topic of their presentation or any other personal identifiable data. The sample posts from the online questionnaire are available in Appendix VII and the question set is available in section 3 of Appendix VI.
i. Group interviews (about terms I and II) helped the triangulation of the data obtained from the online questionnaires and provided further insight into students' mutual reactions concerning their lessons and teaching. Students were divided into groups of 6

(three teaching pairs form the same group) and all group interviews were video-taped. The interview conducted was semi structured and further explored the issues signalled after a preliminary analysis of the online questionnaires. Thanks to piloting the interview, the mean number of now more focused questions was reduced in number and the interview lasted around forty-five minutes each. The interviews became more structured but I still followed any interesting developments doing the sessions. Re-examining the questions during the transcription stage allowed me to identify twelve core questions and the five auxiliary questions (section 4 of Appendix VI). I used mostly open-ended questions as they increase the truthfulness of the answers (Singleton & Straits, 2001).

Additional sources (as a result of theoretical sampling): the inventory of video clips, all lesson plans, follow-up questionnaire, the lesson planning tools

j. The inventory of video clips (terms I and II) - collected from the online lesson-planning tool.
k. All lesson plans (terms I and II): were uploaded and are stored online in the repository that is part of the YouTube-based custom-made teaching software. The group contributed 21 lesson plans in total (20 pairs of students + 5 visiting Erasmus students). Lesson materials included all files that complemented a lesson plan. These included files in the following format: .flv (flash video files), .ppt (MS Power Point files), .doc, .docx and .pdf (files with activities and handouts), mp3 (audio and music files), HTML (Hot Potatoes-authored interactive tests, web pages). All of the files in the repository are attached to the corresponding lesson plans. This research uses only description of the stages and does not investigate any attached materials.
l. The lesson planning tool was a tailor made software to gather, sort, convert, organise, upload and handle all digital material compiled for the lessons, its characteristics are presented in Appendices II and III.
m. A follow-up questionnaire was answered by about 25% of the students at the time of writing the conclusions. It served the purpose of validating the data processing and confirming the initial findings. This questionnaire (section 2 of Appendix VI) attempted to tease out possible influence of the course in terms of altering students' current thinking, beliefs and actions. Additionally, it was accompanied by a set of tentative results of the study requesting students' reactions to them.

APPENDIX VI

Section 1) Mid-term feedback (5 questions – 40 respondents)

Sample answers are available in section 1 of Appendix XIII.

Feedback questions:

1. I was happy with:
2. I found the following problematic:
3. Want to use YT next term: (YES/ NO)
4. Assess the tool from 1 to 5 (5 = very happy)
5. Assess the quality of work done during the course from 1 to 5 (5 = very high).

Section 2) Follow up questionnaire

The questionnaire below was conducted with www.kwicksurveys.com.

1. Where do you teach (your current main place of employment)?
2. Which (if any) of the following could be a result of your participation in the YouTube-based course:
   - your current way of designing and teaching the English lessons
   - going beyond textbooks and using YouTube (other digital video) in your classes
   - exploring meaningful (life-related) topics to teach more than a language
   - using edutainment as a way to teach your classes
   - trying to influence your students values and opinions about the world
   - using technology in your practice more frequently
   - other:
3. Did the YouTube-based course have any significant impact on your personal and professional learning/teaching? Do you see that impact today? How?
4. How and to what extent the course influenced your beliefs and values?
5. How and to what extent are your activities as a teacher different today because of the course?
6. Please find the attached summary of the results from my research. I would greatly appreciate your reaction. Thank you.

Section 3) Online Questionnaire - the questions

1. Which group do you belong to?
2. How would you define/characterize good teaching?
3. How has this YT-based course influenced your teaching?
4. To what extent and how you drew on the skills and knowledge you gained in your method classes?
5. Have you received sufficient pedagogical training to handle running classes at such an advanced level? Why?
6. Could you have used more structure or guidance in your use of YouTube as a teaching tool? Why?
7. How did planning the lesson this way differ from previous experiences? What was different?
8. How was your presentation influenced by the presentations done by other students?
9. Can using YouTube cover up a poorly designed and delivered lesson? If so, how? What was the case with you?
10. What are the downsides of using YouTube? Are there any types of YouTube clip you would not use?
11. Does the element of fun/enjoyment enhance or detract from 'real learning'?
12. Was the amount of freedom you were given acting to your advantage?
13. What was your motivation for investing so much time and energy into your preparation?
14. Did the students stick to the principles of good teaching? How?
15. What was the influence of the fact that the tutor was present during the lessons?
16. How was preparing/ teaching a lesson in a group different from preparing/ teaching it in pairs?
17. What did you gain from planning your lesson?
18. What did you gain from conducting your lesson?
19. What was the strongest point of your lessons?
20. What was the weakest point of your lesson?
21. What did the others gain from your lesson?
22. What did using YouTube bring to planning/teaching the lesson
23. What would be different if you participated in an identical course with no YouTube component in it?
24. Why (not) would you take part in a similar course or recommend it to others?
25. Did having to use YouTube and the tool limit you in any way?
26. What was your motivation to do it well?
27. Were you trying to share your personal interests?

28. How would you describe your ‘tech’ knowledge and skills?
29. Were there any technical bugs that you found (constricting) - what were they?
30. What was impractical while designing the lesson?
31. How did you arrive at the topic? What was your inspiration?
32. Why did you choose the clips you did?
33. What was the purpose of the video you used?
34. What do you think about the amount of video in your presentation?
35. What do you think about the amount of video in others’ presentations?
36. What would you change in your lesson plan or the activities?
37. How many hours did you spend preparing the lesson?
38. Can you give me a detailed account of what you did in that time (describe the process)
39. How did you feel before and after the lesson?
40. What do you think about the comments you received?
41. What do you think about the comments you wrote?
42. Do you express differently/adopt a speaker role in English that is different from your native language.
43. Is there any difference in the way you express yourself and relate to other people in English than in your first language (linguistically and in other ways)?
44. Has any of the YouTube material you have used made you change your mind about any of the issues?
45. Have you developed new interests (cultural, linguistic other?)

Section 4) Group Interview questions

First interview was conducted to pre-test the questions for the general interview, i.e. to see what kind of responses given questions bring and to establish the core set of questions for the subsequent interviews. The preliminary set of questions was based on the themes that were emerging during earlier data analysis.

In the first interview (over one hour long) I spoke over fifty times asking more than forty questions, afterwards the mean average was less than 20. In fact I have identified 12 core questions. Other questions were usually a follow up to what was happening in the interview – like the 5 auxiliary questions below.

Core questions:

1. T: What was the purpose of your lesson?

2. T: What was the focus of your lesson?
3. T: What was your motivation to invest 20-30 hours to prepare one lesson?
4. T: What was your inspiration for the topic?
5. T: Pedagogical (teaching skills), cultural, technological and linguistic benefit? Other benefits?
6. T: YouTube vs. no YouTube in the lessons? How was this course different?
7. T: How was your lesson influenced by other's people's lesson? Was it influenced in any way?
8. T: Writing the online comments- the process and its influence on you and peers?
9. T: Can you transfer this knowledge to achieve a long term teaching benefit?
10. T: How did the fact that you were given free hand/ autonomy influence the process?
11. T: Any frustrations?
12. T: Any suggestions for improvement of the course?

Sample auxiliary questions:

1. T: Bias in YT or presenting cultural material?
2. T: How did your teaching methods course help you in this particular situation?
3. T: Any competition between you?
4. T: Was technological component an obstacle?
5. T: Strongest and weakest point of your lesson?

Sample questions (transcribed verbatim from interview four):

1. T: What was your last presentation about?
2. T: Is it Ok if I use your work in an anonymous way for the research purposes?
3. T: Any frustrations during preparing or teaching the lesson?
4. T: So was the technical part somehow limiting?
5. T: Why 20-30 hours- what was happening in those long hours before the lesson and after the lesson when you had to read other people's comments and reflect?
6. T: Want was your real motivation to invest so much time?
7. T: Anything about language gain?
8. T: Any other gain- because you were teaching?
9. T: Any other pedagogical benefit?
10. T: So did you handle the situation?
11. T: but if you not going to teach such this kind of lesson again- where is the benefit?
12. T: So does it translate to the future practice?

13. T: In terms of the methodological and pedagogical courses you had before did you feel prepared?
14. T: What was in the comments?
15. T: Is there any benefit in reading what other people say in their comments?
16. T: (you said you'd be more willing) But after this course is it YT only or technology in general that you'd find easier to use?
17. T: Was technology a way to cover up a poor lesson in your case sometimes?
18. T: You know the tricks of the trade. You'd know but the question is whether intermediate students would notice?
19. T: Knowledge, culture, information- any gain here?
20. T: Any bias in presentation of the topics?

APPENDIX VI: Online questionnaire coding

Below is a sample question from the online questionnaire with the accompanying codes.

How did planning your lesson differ from the previous experiences?	**Observation note: Respondents talk both about 'planning' and the actual 'teaching' lessons**
Answers	**Codes**
It was much more demanding and difficult to prepare.	Experiencing challenge
It was quite extraordinary and innovative. That's way I liked it. Experimenting in the field of teaching is precious.	*Experimenting* as a value
It was completely new experience for me, very innovative. Previously everything was based rather on book knowledge and exercises. This technique involves much more work and preparation. Conventional lessons are much more repetitive.	Reflecting on previous experience 'old ways' boring but 'new ways' innovative
It did differ. First of all, the whole case concerning the choice of YouTube film was totally innovative. However, when it comes to certain stages of the lesson, the differences were not so apparent.	Grounding new (YouTube) practice in previous training
For me, it was much more interesting for me as a teacher, but at the same time much more time consuming.	Time consuming but pedagogically interesting
This was definitely new experience, since the lessons are really complex, they contain different kinds of materials (movies) and there is a whole range of issues that do not come into play at ordinary classes.	Classifying previous classes as 'ordinary' Confirming 'complexity'
It differs a lot. The presentations were delivered by means of technological a device (which is sth. new) and to prepare a lesson we had to use computers, projector, become familiar with certain programs, etc. We learnt much in this sphere.	Using technology Confirming learning ICT skills
It certainly took much more time and effort than it takes to prepare a usual lesson plan. What is more, honestly teachers do not usually prepare lesson plans as such but they are more likely to incorporate already prepared materials like course books.	Taking more time Admitting novel practice (lesson planning)
It differed dramatically from what I was doing before in e.g. technological aspect	Pointing to technology as a 'dramatic difference'
It took much more time than usually. We had to really engage in searching for the appropriate material and creating our own exercise. All content was generated by us, teachers, therefore we had to put a great deal of effort into orchestrating all details.	Individually generating content Searching and creating laborious
Most of the lesson plans prepared in my previous teaching practice dealt with grammar, reading or vocabulary items, I guess that I've never prepared video lesson before	Switching focus of learning from grammar, reading and vocabulary to video Confirming novel experience
The whole YT experience was different. Usually we prepare lessons	Confirming originality of the

from reading materials or “ordinal” listening materials (from books or on-line radio) so the idea of incorporating watching with listening was new. Especially since the videos in most cases were really interesting	source Interesting videos made it different
The new thing was that we had to introduce so much multimedia into our lesson. What’s more, we had to be prepared for difficult questions (as we were teaching our equals) so in-depth understanding of your topic was a necessity.	Facing peers and their questions Bracing for potential problems
The input we had to work on was different and that was the ultimate thrill! No more dull lessons about deforestation and global warming. We were able to create interesting lessons about things we like to do, not the things that the course book authors like to talk about. Also, the lesson required far more preparation, but, on the other hand, it was a greater satisfaction for us.	Being able to decide themselves about entire content and being able to find materials to structure a lesson
We knew that we were going to have technology with us. So synchronizing the devices, planning the class according to the videos and many other things were different from the traditional classroom setting. We had to take all these things into consideration. Planning everything so carefully, asking yourself so many questions like ` what is that problem happens, and etc`. It was, for me, harder than planning a traditional lesson for me but it was much more interesting and enjoying because I was on computer watching videos and so on.	Accepting difficulty as a part of the process Predicting problems and trying to prevent them
I had a chance to use some new tools and techniques; I had more freedom of choice when it comes to the topic and the structure of the lesson.	Noticing ‘more freedom’ – labelling the design as a ’chance’
What differs is the element of YT movies, but I treated it as any other type of activity so after all it was more or less the same.	Classifying YT as a ’ any other type of activity’
At first this reminded me a bit of listening-based classes I used to design, but it turned out to be more demanding. The workload I put in the planning translated to even more time put into the actual doing all the things that had to be done. But in the end more work meant also more satisfaction.	Noticing similarity to previous practice (listening lesson) Admitting challenge but confirming satisfaction
We had to keep in mind additional time for technical problems and prepare plan B in case of any ‘emergency’	Expecting technological problems Taking precautions if technology fails
It took an enormous amount of time devoted to research and coming up with new strategies to exceed what has already been done by the other groups	Competing with peers in finding new strategies to teach a lesson Aiming to improve on others’ performance
There was less theoretical aspects, more practical stuff was included: research before the presentation, preparing the videos to be played, etc.	More hands-on and practical experience

APPENDIX VIII: Example of a memo

Defining and aiming to achieve professional value through altering quality of teaching

The course allows for the values to emerge as the disclosure is secured through:

- Autonomous turn-taking (all have to perform) in front of others
- Teaching English classes to peers who all are qualified teachers
- CMC interactions (feedback and comments on lessons and performance)
- Uploading all materials to a common and accessible online repository
- My distancing from the role of 'a leader of the course'

Agency allows teachers to claim a full authorship over the taught classes. But responsibility comes with the authorship. Actions must be taken to convince the authors of the value of their teaching and the created materials. Teachers come to the course with their own notions of a 'good lesson' but they probe the expectations of others observing their in-class reaction to the taught classes and examining the CMC concerning the lessons.

Collaboratively negotiated set of values relevant to their pedagogical situation is defined during their interacting with the online lesson planning tool (and embedded methodologies), designing, observing lessons, teaching and reflecting on lessons, reading and reacting to peers' comments, informally interacting before, during and after the classes- exchanging opinions and lesson materials. Explicitly pronounced 'markers of value' (seen in CMC) are closely related to the implicit concept of the 'good teacher 'and define what kind of digital materials should be used and how the lessons should be (planned?) and taught. The markers are generally aligned with the methodologies of ELT but stress edutainment and new content (often cultural) knowledge input, and above all, focus on the affective side of teaching, visible through their compassionate and RECIPROCAL attitude to other students. Student engagement, observed during the classes and traced in the subsequent comments, became a gauge for quality of teaching. Other didactic values are well-established principles in teaching such as typical (recommended) lesson formats, tasks types or activity sequences. Language practice is considered good when it includes interesting or important ideas from other spheres of life.

A teacher who is inspiring and enthusiastic, fair and friendly, responsive to students' needs was defined as a *good teacher*. Being well- organized and effective occupies lower priority. Thus the value in lessons was seen through the prism of engagement - secured through teaching informative and true/relevant to life lessons with a clear knowledge gain (rather than through grades). An image of a teacher which is shared in the opinions emerges as a humane and a compassionate professional focusing on engaging (not forcing) their students by providing them with a pleasant and informative language practice. It should be stressed that this is a highly situated model that may only appeal to teacher trainees at a MA level in a Polish public universities.

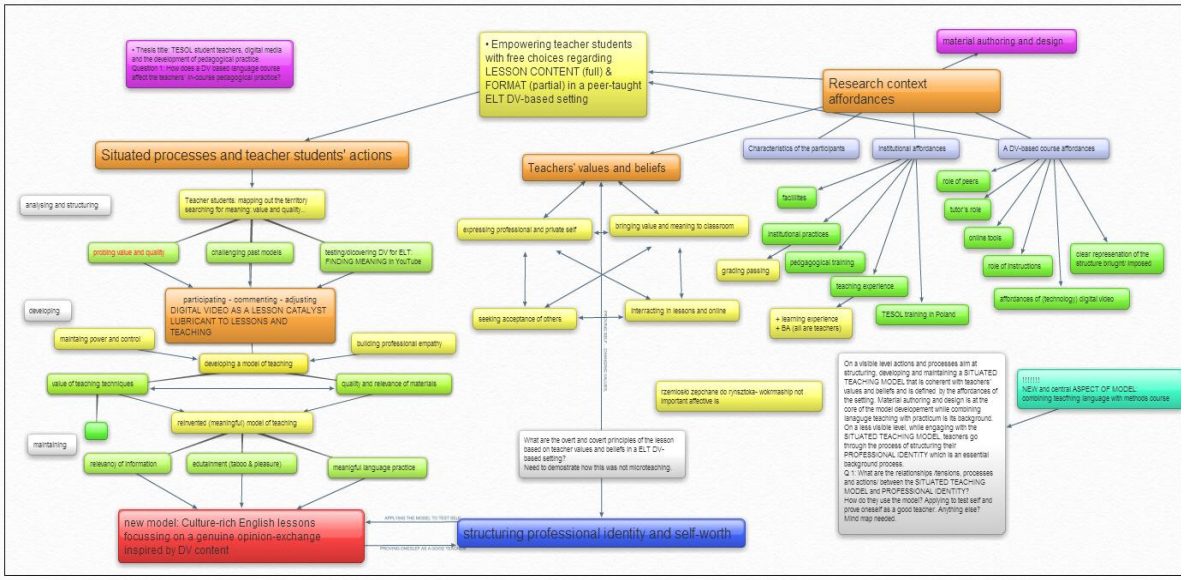
The value of digital video, which was a pivotal element of each class is defined in terms of appropriate linguistic level, interesting content, good quality of recording and relevancy to the topic. Videos serve ONLY (?) facilitating function to the tasks, enhancing the flow of the lesson and providing context and reason for exercises.

Emerging professional value are set in opposition to a 'traditional lesson' which in students' discourse denotes 'boring' and 'uninspiring'. Interestingly, reciprocity surfaces as a new trajectory resulting in students' increasing attempts to provide continually more attractive and better received lessons. This in turn results in a greater willingness to improve on others' performance and exceed in lesson design and teaching, consequently further shaping the quality of the teaching.

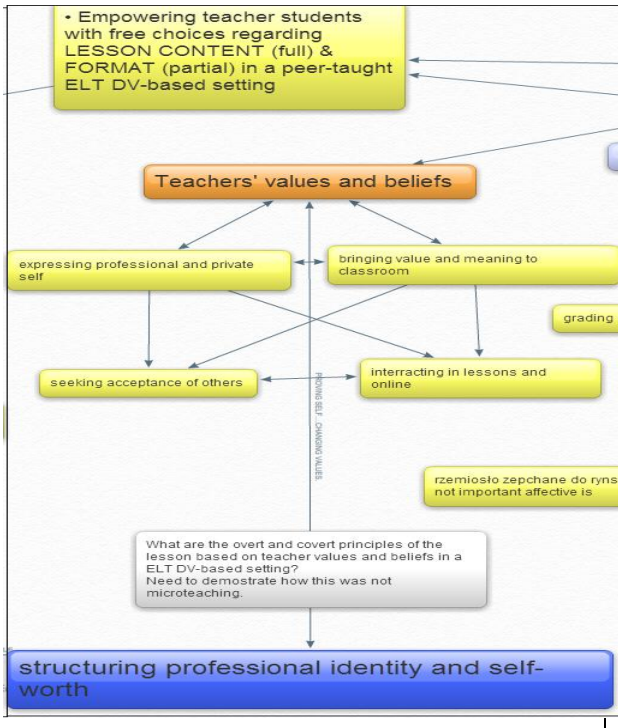
Teachers' are not likely to be naming their values as direct descriptors to their actual actions (that may bring a false alignment). Since the teachers are not acting on the assumption of the infallibility of their expertise but openly admit their inadequacies and collectively engage critically and emotionally with others in designing a lesson that will help them feel as accomplished teachers.

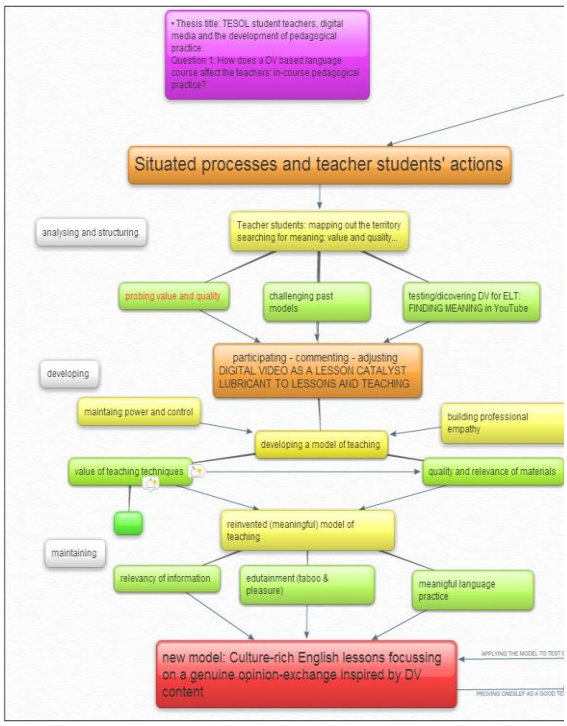
APPENDIX IX: Mind-mapping themes and categories

Section 1) Sample mind-map- an orientation overview (font decreased)



Section 2) Sample mind-map - close-ups





APPENDIX X: Steps taken during the online questionnaire analysis

I frequently returned to the raw data during the steps taken below.

1. Coding my the questions to understand the implicit meanings I embedded in them
2. Looking for connections, and possible overlap between the questions
3. Grouping the questions according to the relationship in the meanings
4. Organizing all forty one responses under each particular question
5. Colour-coding the answers – highlighting key points in two colours- high priority and lower
6. Re-reading answers coding each answer with gerunds and verbatim codes
7. Transferring all codes to new document to search for patterns
8. Rearranging and grouping the answers within a given questions
9. Combining codes from various questions under a master question
10. Arranging codes in categories, looking for categories to subsume the remaining codes
11. Comparing with other data codes- looking for gaps, deciding about other sources (e.g. using lesson plans to as data source)
12. Re-examining the answers of a particular student across many questions (e.g. student no. 26 who submitted particularly insightful responses)
13. Summarizing and synthesising the codes
14. Using MS Excel to visualize numerical codes
15. Rearranging the questions according to the codes and categories they were close in meaning
16. Analyzing the codes- writing analysis – using highlighting if telling categories emerges, writing a memo for a key code subsuming other codes
17. Transferring quotes- supplementing with analysis from quotes and retained verbatim codes
18. Posing questions to refine thinking and further analysis
19. Using mind mapping software to subsume categories
20. Synthesizing and abridging entire analysis to look again for dominant themes and categories
21. Rearranging the existing and arranging the remaining codes and themes into categories
22. Rearranging , re-analyzing the existing categories, subcategories, exemplifying codes and telling quotes to write analytical hunches and formulate memo drafts
23. Going back to the existing analysis on the basis of remaining data to organize them against the dominant themes
24. Juxtaposing codes and categories from other sources to saturate them with codes and quotes

25. Deciding the hierarchy and the interrelationship of the categories from this source and other sources
26. Writing more advanced memos and visually graphing them to organize emergent answer to the research question.

APPENDIX XI

Section 1) Sample early hunches

Below are four examples of early hunches noted down during data coding

- Advanced learners who have covered many course books, see the advantage of this design over textbooks as less limiting ('textbooks have restrictions and the topics are repetitive'). Teachers are taught ELT in a vacuum and their lessons cannot really be innovative (they must 'boring' follow textbooks). Disjuncture between the training and the actual practice: in the Institute, students are often taught not in the way they are asked to teach later. Then, they are observed whether they are able to teach in the way they were not taught but taught to teach.
- During the course participants are redefining their notions of teaching English, i.e.: interesting content served in pedagogically sound environment. Consequently, exercises were considered 'good' when they did not distract from getting the cultural content (language by-the-way). This type of class brings the fakeness and simulation of ELT classroom closer to real life learning- as the process of lesson design is reversed- you start with the topic /interest/ and generate the activities around it- in school exercises come first.
- When teachers do not have already designed materials, they devise their own methodology of design in a collaborative way. When they are peer-teaching, the benefit is to be given feedback from people who have instruments to know exactly what they are doing and how they are performing. The course offered a unique chance that enabled teachers to link the theory with practice (rather than just performing out of a course book).
- Utilizing the cultural and content-knowledge themes became a preferred way to meet the challenge of performing before people at a similar language (and pedagogy) proficiency level. In the first term teachers tried to shock to get attention and control the classes. In the second found out that depth of knowledge can do the job, consequently – the language practice was more in focus and the quality of presentation was more refined.

Section 2) Themes emergent from the data

Below are sample themes emergent from the chosen analysed sources of data.

A. Themes emergent from the initial sources of data

Themes based on the observation notes:

Pedagogy:

1. High- quality materials, passionate teachers – poor delivery at times. Often, inability to realise what is planned in lesson plans
2. Competent P/Pedagogy/ integrators ('good teachers') better integrate technology into lessons
3. Involving content and technology masquerades as good lesson (T /technology/ serves as a smokescreen for didactic mediocrity, does not compensate for pedagogical inadequacies?)
4. Most problems are didactic rather than technological/ handling tasks, monitoring, TTT, justification for tasks/
5. Sometimes the teachers get so engrossed in their topics that they do not seem to notice that others do not necessarily enjoy the topic - over focus on generating interest and introducing intercultural novelties cannot patch up the threadbare fabric of poor teaching
6. Good selection of clips present in the lessons- appropriate level-wise, and well-woven into the lessons.

Technology:

1. Addiction to technology camouflages didactic inadequacies and successfully prevents them from being spotted and corrected- or not. (Basic principles of ELT are straightforward- as are informed from SLA research)
2. Though the technical issues hinder the lesson flow, technology does enhances only some elements of practice (interests, teacher personality)

General:

1. Can because of the degree of autonomy, wrong or pedagogically ineffective didactic patterns be formed, reinforced or fossilized?
2. 'You-tube-based' appears to be a stretch – the lessons themselves were tips of the iceberg – really interesting things were happening during preparation and reflection. DV

acts as a trigger allowing teachers to present themselves and their lesson in a flexible manner.

Themes based on the mid-term feedback themes:

1. Satisfaction-key concepts: Controversial, engaging , real life, variety, view-shaping, innovative, creative and stimulating creativity, opportunity to practice language
2. Technical problems: Grading tool, lesson plan, problems with browsers
3. Willingness to repeat the course (continue) in the following term :40 yes/40 answers
4. Tool assessment: On scale 1-5- mean average: 4,2 (38 answers)
5. Work done by students and teachers- assessment: On scale 1-5- mean average: 4,7 (36 answers)
6. Key concepts: Cooperation, involving everybody, equal and clear division of labour, when you're assessed you do your best

B. Themes emergent from the primary sources of data (discussion thread 1, discussion thread 2)

Discussion thread 1 (CMC) themes: Lesson assessment done by teachers' (comments) and students' feedback.

1. Relevance of lesson topics to real walking life – new experience
2. Changes in beliefs and attitudes (about life and teaching)
3. Changes in pedagogical practice- criticism and self-reflection: time management, conducting lesson- 'sense of ethics and justice', conducting and planning lessons- general principles, technology (marginal), job appreciation or its lack (marginal), general comments

Discussion thread 2 (CMC) themes: Online tools and teaching methods assessment

1. Vocabulary (can be dismissed as opinions were contrived)-do not focus on vocabulary
2. General comments about project- definitely worth participating in
3. Topics of the presentations/lessons, general comments - very involving
4. Topics of the presentations/lessons – the scope and ideas- new suggestions
5. Exposure to and language practice- value is in it
6. Personal (opinion) development
7. Pedagogical practice
8. Technical comments
9. Change in beliefs
10. Teacher conduct
11. More technology (ICT)

12. Tutor's role
13. Ideas for new activities and sources, solutions to problems
14. Lesson structure- new ideas

Colour-coded list of themes identified in discussion thread 1, discussion thread 2 and synthesised with the group interviews:

- *Group interviews (Italics= Blue)*
- Discussion thread 1 (Underlined= Orange)
- Discussion thread 2 (Standard =Purple)

Theme set 1: Pedagogical management of the course

- General comments about pedagogy, pedagogical practice, *methodology, teaching skills, previous training, development/ change from term 1*, lesson structure- new ideas, time management , conducting lesson- 'sense of ethics and justice', conducting and planning lessons- general principles, changes in practice- declaratory, teacher conduct, *influence of future teaching,* tutor's role
- *Organization of the course, affordances of the tool, affordances of the course*, positive comments about project, *satisfaction-key concepts*, ideas for new activities and sources, solutions to problems, *students' perception of classes, assessment of peer work ,affordances of YouTube*

Theme set 2: Learning processes and content knowledge and pedagogical knowledge gains

- *Comments about peer comments – learning form peer comments, COP (Communities of Practice), support, mutual learning,*
- *Knowledge and culture gain, Language gain*, Exposure to and language practice- embedding value in it, vocabulary (can be dismissed as opinions were contrived)
- *Choosing topics and videos*, topics of the presentations/lessons, positive comments about topic, topics of the presentations/lessons – the scope and ideas- new suggestions, relevance of lesson topics to real walking life – new experience
- Technology (marginal), technical comments, more technology (ICT), *technology*, tool assessment / technical problems

Theme set 3: Affect

- *Beliefs about teaching/ reflexivity* , change in beliefs, changes in beliefs and attitudes (about life and teaching), personal (opinion) development, *motivations and feelings* , job appreciation or its lack (marginal)

1. Solving technological issues
2. Raising own ICT awareness
3. Assembling ICT knowledge
4. Exploring YouTube for classroom use
5. Preparing lessons (choosing topics and DV)
6. Handling digital anxiety
7. Offering suggestions for improvement of the online tools
8. Using DV to facilitate teaching
9. Assigning value to CMC feedback
10. Shaping teaching actions through CMC
11. Learning from peer feedback
12. Reflecting on own performance
13. Reflecting on peer performance
14. Challenging others' performance
15. Stipulating on the CMC potential
16. Interpreting peer actions
17. Seeking peer appreciation
18. Satisfying peer expectations
19. Fearing peer teaching
20. Emulating peers
21. Competing with peers
22. Showing empathy towards peers
23. Interpreting the context
24. Probing value and quality (pedagogical, content, emotional)
25. Building meaning (searching for meaningful ways of teaching)
26. Engaging with situated teaching model
27. Evaluating previous training
28. Challenging (own current knowledge / skills)
29. Revising the vocabulary routine ('the old ways')
30. Honing newly acquired pedagogical skills
31. Rediscovering teaching methods
32. Handling challenges of lesson preparation
33. Experimenting with new ways of teaching
34. Using DV as carrier of meaning
35. Testing own teaching skills
36. Shaping own performance
37. Integrating new pedagogy
38. Handling unfamiliar classroom situations
39. Learning English
40. Understanding the learning and teaching processes
41. Developing pedagogical own benchmarks
42. Benchmarking performance of peers
43. Contemplating course impact on future teaching
44. Aspiring to the teaching ideal (as represented by collaboratively developed teaching model)
45. Changing beliefs about teaching
46. Expressing self (own interest, ideals etc)
47. Bouncing self-perceived values off others
48. Inspiring others- bringing reciprocity
49. Proving oneself as worthy teachers
50. Expressing emotions about in-class actions
51. Avoiding embarrassment through strengthening content
52. Employing face-saving techniques
53. Surpassing the requirements of the course
54. Shunning restrictions
55. Realising one's lesson vision
56. Maintaining power and control
57. Taking responsibility
58. Enacting methodological decisions on peers
59. Adapting genuine materials as a way of confirming professional skills
60. Seeking ways to satisfy peer expectations
61. Confirming material relevance to life
62. Exploring edutainment
63. Resorting to culture-based topics
64. Enhancing lessons through content-innovative themes

APPENDIX XII: A list of lesson topics (term I and II)

The topics below are presented in alphabetical order.

Term 1	Term II
Child obesity 1	Addiction types
Child obesity 2	Battle of the sexes
Condoms	Beautiful Minds
Cosmetic Surgery	Conspiracy theories
Dangerous sports	Dreamology
Eating disorders	Dreams
Euthanasia	Game shows
Handling negative emotions	Gender differences
Homosexuality	Guns
Illegal aliens in the USA	Intelligence and genius
Manipulation in advertising	MMORPG - world of Warcraft
Modern Art	Mummification
Poles in the UK	New world order
Serial killers	Nonverbal communication
The phenomenon of atheism	Oracular prophesies
UFO	Political correctness
Women in Army	Sects and manipulation
	Stereotypes
	Unsolved mysteries
	Vampirism
	Wonders of the world

APPENDIX XIII: Raw data samples

Section 1) Sample initial data- Mid-term feedback- sample answers

Please comment on the YouTube-based course.				
I was happy with:	I found the following problematic:	Want to use YT next term: (YES/ NO)	Assess the tool from 1to 5 (5 = very happy).	Assess the quality of work done during the course from 1 to 5 (5 = very high).
Inventive type of lesson,	Star rating / Mozilla, lesson	Yes,	4	4,5
something that made us much	plans - should be in PDF	YES!	5	5 everyone was equally
more active than any vocabulary	format, or you cannot find	Definitely	4,5	involved, 5 totally satisfied
course would have chances to	(sadly: (),	yes!	4, but	with the cooperation, 4 (not
do.	evaluating asterisks marks for	Yes,	many bugs	bad at all, but some people
Nice idea with the website, The	star	yes,	are still	were only coping others'
whole idea of YouTube, the	assessment of the star, the	yes!	visible	work), 4,5
whole idea of the course – very	problem with posting	Yes	5	work based on
interesting videos, engaging	timetable (Mozilla)	Yes	4.5	cooperation=4.5
exercises, the whole idea	rating with stars & posting	yes	4.5	everybody has the
nice idea with this YouTube	lesson plans (Mozilla)	yes	4	opportunity to take part, 4.5
thing=controversial topics, etc	Stars, marking the selected	yes	4	all of us had a chance to
preparing presentation, nicely	words	yes	4	present their work
prepared presentations,	Lesson plan (Opera, IE)	sure	5	5 everybody had a chance to
preparing the presentation,	Lesson plan	yes	4	present something
discussion of many various and	Lesson plan	yes	4,5	interesting;
sometimes really controversial	Judging by Stars	Yes	4.5	4,5all people in the group
topics, happy with learning new	(Firefox) evaluation star,	yes	4	were equally involved
methods of presenting	videos from sources other	yes	4	5 work equally divided among
controversial topics	than YT were not running font	yes	4	people within the group,
opportunity to practice speaking	for pronunciation, the time	yes but	4	successful cooperation.
practically everything –	limit is not enabled	with	5	5,
electronics is a backward step	Adding vocabulary	some	4	5 – it was something different
into future (backward – should	rating (stars)	improve	4	– not only reading and
be in presence 10 years ago)	ranking, posting plans	ments	4	vocabulary
YouTube – good source of real	(Mozilla)	yes	4	5 – it was cool cooperating
life language	stars' ranking on Mozilla	yes	3+	with several people I didn't
the yt presentation – it's a good	Firefox	yes	4	know
idea for future lessons	rating with stars, videos from	YES	4,5	5- good group work, well-
good learning opportunities	sources other than YouTube	yes	5	structured presentation
YouTube presentations- good	It was impossible to attach a	YES of	4	4,5- everyone was working in
source of real life language	lesson plan (Mozilla) despite	course	4.5	a group equally,
discussions during presentations	many attempts ...	yes	4	4,5 – clear division of labour,
films	I suspect that it is a matter of	yes:)	4/4,5	creation of a huge database
films, would opt for other media,	too many characters in the	yes	4	of lesson plans and lesson
especially songs, great topics,	"Universal Box" ...	yarrr	4	models
great discussions, a tool showing	Could create a number of	yes	4	5 -everyone was involved
great potential, happy that we	"boxes" with the word "test"	yes	4.5	4 (technicality!)
were included in the designing	so my guess ...	Yes	4	5.\4
of the tool	Evaluating star did not work in	yes	3.5	5- everybody worked hard on
topics of the presentation	Mozilla.	yes	4.5	it
with having the chance to voice	I also evaluate asterisks did	yes	4,5	4,5 ,4+ ,5

our views challenging topic, controversial discussions interesting topics engaging discussions diversity of materials (PowerPoint presentations, PDF files, websites, movies) YouTube =great idea! It's extremely interesting as it provides us with multitude of various points of view and interesting language innovative classes; The basic idea of the classes: incorporating YT videos, doing presentations, having engaging discussions; commenting and writing in the scribbling bank or doing creative homework assignments I liked it. YouTube projects help us to develop. I liked the projects as they really changed my point of view on some issues. I enjoy the YouTube projects as they helped us to develop our speaking skills. YouTube projects were fine, not stunning, but fine. YouTube projects were sth new, good experience YouTube, methodological aspect of the course YouTube projects something innovative and engaging good idea with films and using them for the vocabulary test i liked watching films; i think it is a good idea for classes that are so late, and vocabulary from the film i enjoyed is easier to memorize I generally liked the tool	not work on Mozilla Stars' failed (firefox too!) evaluating star: work only when you refresh the Mozilla: enter the password and nothing happens (surely a good password), Explorer works. Uploading the lesson plan was the major problem Star tool with FF grading the presentations / Which system was not responding sometimes rating with stars, you cannot 'throw' any pdf files if I use Explorer	yes- great idea yes why not yes yes		5 (everybody was involved, thought-provoking topics, classes encourage speaking and exchanging views) 5 (full cooperation, nice topics, etc.) 5 we put a lot of effort into our presentations, I believe they were successful 5 You do the presentation and you are assessed, so you try to do your best (at least I do so) 5 it seems fine 5 4.5- everyone had a chance to show what s/he can do. The cooperation was flourished as there were usually 3-4 people in a the group- fruitful work 4. I don't like working in groups I prefer preparing lessons/presentations on my own because in this way I am in charge of everything 3.5- not bad but could be better i kind of enjoyed watching movies and later testing- that could be a solution to our YT problem 5-everyone's involved in preparing the presentational and later in conducting the lesson during the classes 4

Section 2) Sample primary data from Discussion Thread 1.

Below are samples of lesson self-reflection (italicised, in blue) together with peer feedback (no italics, black).The lessons were on UFO and Child Obesity.

UFO LESSON | by Missing Brooch words: 259

My reflections on our little UFO project…. Here it goes!

I'll start off by stating that time was of the essence and there was too little of it. Fortunately, we have additional 30 minutes to finish the project during our next meeting so my opinion will be more detailed afterwards. As for now, I can conclude by pointing out some pluses and minuses of the project so far (in my humble opinion, of course):

(+) The topic was interesting - we looked for videos that would show different perspectives of the UFO phenomenon. Hence a look-at-those-freaks introduction, bound to make people laugh; a religious stance; a scientific one; and a video examining a particular case of an alien abduction "proving" the existence of extraterrestrials. Naturally, we have encountered many more videos but it was hard to squeeze in so much in such a short time (which as I mentioned before, was of the essence).

(+) Additionally, the idea of brainstorming particular UFO vocabulary items at the beginning of the class was very useful - it racked peoples' brains and gave this little element of competition. Unfortunately, due to the lack of time, we couldn't give people more time to think about the vocab. Too bad…

(-) To me, the lesson was a bit chaotic: it seemed as if we didn't thoroughly talk the order through and some of us did his/her part too soon, or at least it was my impression that it was done too soon.

(-) I also think some of us should have been speaking louder, but then again, maybe I'm too picky :P

UFO lesson by Orchards Path | *21.11 05.11.08* words: 95

I assume the technical problems that You encountered during Your presentation (for instance splitting the lesson into two classes) shouldn't cast a shadow on the general, and in fact - very positive, impression of the lesson. I appreciate the careful choice of materials that showed the issue of the UFO from many different angles. Therefore, I am convinced that both the UFO-supporters and the UFO-skeptics may feel satisfied;] Although I can attribute myself to the latter group I have to admit that the pictures might have been quite plausible... if they were genuine of

course ;D

UFO lesson | by Beebe Bee () | *13.11 06.11.08* words: 136

I don't agree! The whole presentation was well-organised and thought over. At least that is my impression. What is more, that is not the only advantage of your performance. The "teachers" were very confident so it gave me the impression that they are true experts on the topic of aliens and possible alien-invasion. The visual aids in form of pictures of aliens looked very real and helped us understand what the abducted might have felt during the encounter with extraterrestrials. :p Furthermore, the topic is very controversial so it was a good incentive for a heated discussion that followed the projection of youtubes. When it comes to the vocabulary items, I like their level of sophistication and their usefulness. I think I might use some ideas from the presentation if I happen to become a teacher.

UFO lesson | by Awesome Alien | *17.11 12.11.08* words: 142

I've never believed in UFO in spite of the fact that I've read some books and watched some TV programmes about the phenomenon. Your lesson, however, cast a doubt on my opinions and beliefs. Still, I don't believe in UFO but your choice of videos and exercises was quite convincing. A few more and who knows... ;-) But seriously, great job. The videos were captivating and I honestly regretted that you did not manage to present all of them during your first lesson. The vocabulary exercise was really difficult and some of us had problems with matching the items. The discussion about the existence of UFO was very lively. You gave us the chance to express our views. The quiz at the end of the lesson was very funny. Fortunately, it turned out that almost none of us was abducted by the aliens.

UFO lesson | by Baker's Axe | *17.11 12.11.08* words: 103

UFO presentation can be undoubtedly called the embodiment of perfect arousing curiosity. I must admit that I was somewhat skeptical about the topic at the very beginning. But, in fact, you made me change my mind quite quickly. First of all, it is crucial to state the films you played were really captivating. They introduced mysterious atmosphere and made non-believers think. In addition to this, the factfile provided us with truly intriguing findings. Besides, the abduction test ended your performance in a very entertaining way. Unfortunately, I failed it but it was possible to notice a slight hesitation on other people's faces.

UFO lesson | by Willing Raven | *19.11 28.11.08* words: 129

On the whole, your presentation was very engaging. The choice of videos thanks to which we managed to gain many insights into the subject, was unarguably the strongest point of your performance. The discussion and additional exercises complemented the visual material successfully.

The presentation also appears to be very well-structured and thoroughly thought over, although you weren't given a chance to prove it. Firstly, you acted assuming that you had to squeeze everything till the end of the lesson and then, in the middle of that, you learned that there was a possibility of finishing it off next time. This bad time management destroyed the sense of continuity, didn't allow you to fully realize your potential and on top of that deprived us of opportunity to fully appreciate your performance.

UFO lesson by Opium Flower | *19.12 14.12.08* words: 109

In my opinion your lesson went very well. The strongest point of the presentation was challenging vocabulary as it was not a plain sailing to do your vocabulary exercise. What is more, the movies were captivating and hilarious, showing various cases of people obsessed with extraterrestrial creatures. I also enjoyed the idea of dividing us into the advocates and opponents of the belief in UFO which resulted in a exciting and site-splitting discussion. When it comes to your doubt that the lesson was chaotic, maybe your impression is spurred by the fact that it came in two parts. In fact, it seemed to be well-planned and went really smoothly.

CHILD OBESITY | by Opium Flower | 16.12 07.12.08 words: 102

It's really difficult to reflect upon our presentation as not everything went well. Firstly, the choice of topic was probably inappropriate as you seemed not to be really interested in it and I am not fishing for compliments here ;)

Secondly, we failed to balance time between our activities, and therefore our role play was quite short and messy while it was supposed to be the most entertaining and the longest part along with the movies presentation.

All in all, I would like to thank you for your attention and participation in our lesson. We'll try to arouse more interest in you next time ;)

CHILD OBESITY lesson by Orchards Path () | 20.12 08.12.08words: 141

Don't be so severe with your presentation cause it wasn't so bad. To cheer you up I want to focus on some benefits it did entail: First of all I like this Shreck-commercial ;) hilarious, stimulating and being placed at the right time perfectly adequate as an introduction to the topic. Besides, I found the movies enormously educative particularly the one with the scientist

talking about eating habits and the other concerning food being served in the school canteens in Britain. Both of them revealed some surprising yet crucial facts that I haven't been aware of before I'm really thankful for that. And finally the role-play activity. It worked - such things always work;) I could notice that the students were inspired by their roles, which resulted in a fine performance and, although I didn't actively participated in, I still enjoyed it.

CHILD OBESITY lesson by Frozen Rose () | *00.12 09.12.08* words: 79

Don't be so hard on yourself! You did your job as good as you could - you presented the topic from different angles, some of which we were not aware of, namely the interaction between diet and behaviour. Your exercises were adequate, the role play was fun as you predicted and if we gave you an impression of not being interested you mistook it with tiredness. All in all, we learnt something interesting and possibly useful, so good work!

CHILD OBESITY lesson by Missing Brooch () | *16.12 12.12.08* words: 160

You started off with a bang: showing us a short video and asking later about the supposed topic of your presentation. This gave us a chance to brainstorm. I also liked the lead-in text about the possible causes of child obesity. To tell you the truth, I was not even aware that child obesity might be the result of a genetic mutation and some children might be so pained by this disease that they will even it dirt to satiate their hunger. WOW. The role play was also well prepared: this was THE FIRST activity so far in all the presentations which actually gave us written instructions to know what to say and how to behave as the persona we portrayed. This meant that the role play had been thought through and was supposed to head in a certain direction. As for the vocabulary exercise I agree with my peers - they were too undemanding. All in all a good presentation :)

CHILD OBESITY lesson by CelebrilAncalimë () | *11.12 16.12.08* words: 183

You assess yourselves too harshly - we were interested in your presentation! But it's really hard to show great enthusiasm at this time of day. This we obviously have no influence on, but we will try to give the "presenters" more positive feedback from now on;) I think that the videos were carefully selected and presented many different aspects of the problem including a chef's fight with obesity, which I've found the most valuable. he role play was engaging, but it really turned out to be a bit chaotic and not everybody knew what they were supposed to do. Maybe if you invited the participants of the role play to the front of the class and have other people listen to them and make notes or give them a chance to say sth too, it would be better. But it was not the most successful part of your presentation mostly due to the lack of time and even your

flawless organization of the role play could not help much to that problem, so I think you have no cause to spend sleepless nights pondering about this;)

Section 3) Sample comments about the course (term 1) Discussion Thread 2

by Lull Aby () | *19.12 13.12.08* words: 202

I have to admit that the idea to utilize You Tube for academic purposes did not seem viable for me at the very start. I was therefore surprised how useful a tool it can be when it is thoughtfully embedded into the context of a class. The presentations are usually ingeniously made and base on captivating topics. If diligently done, they serve as a perfect warm-up for engaging and efficient discussions.

On the other hand, though I have no intention to discredit our enjoyable classes, one has to come to grips with the fact that You Tube videos can rarely serve as a challenging vocabulary practice, unless you invest several days of preparatory research which are not available given the heavy workload in our studies. For me, the main value of the class is the exposure to the real life language and serious conversations in the form of compelling interactive presentations. These elements should be accentuated instead of focusing on vocabulary exercises.

I would also like to add that I greatly appreciate the ability to express my views concerning the socio-ethical matters that are being mentioned in the class and, even more, the chance to hear what are my peers' opinions on them.

by Count Maldoror () | *13.12 14.12.08* words: 182

First of all, as probably most of us, if not everybody, I enjoyed our YouTube presentations. Especially films that were presented. I think that films used during classes generally give such impression of relaxation and pleasure, maybe because the very idea of watching a film is strictly associated with pleasure. If they are properly used during classes, it would be a great thing to continue.

If we used it in an appropriate way, I am not sure. Maybe on the second round the number of them could be slightly reduced, because they are not a good source of sophisticated vocabulary, as the spoken language.

I think that those films along with discussions were the strongest points in every presentation. Role plays were very entertaining, and I consider them successful, because they really stimulated to practice our speaking skills.

Vocabulary activities were the weaker parts, and in my opinion also timing was a bit of a problem. Maybe if in the next round of presentations each group would be given the more time and there would be one group per classes, that will be beneficial.

by Acer Juss () | 15.12 14.12.08words: 177

At first, I was a bit afraid of the continuation of the book by our favourite - Mr Skipper. That's why, the introduction of lessons based on YouTube videos fancied me from the very beginning. However, I did not know that I would be so into this idea. At first, in my opinion, working with the Internet and YouTube, which is known and widely used by everyone of us, is both an interesting and valuable lesson. We are able to swift through maaany videos, gaining some new knowledge on the issue that concerns us. Moreover, the topics chosen by our collegues are gripping, but also shocking and treated most as taboos. As a result, the opinions are different, which create passionate and sometimes even emotional discussions. As far as the lesson conduction is concerned, I think that sometimes some shortcomings appear, however we are still learning how to be good teachers. To sum up, I have to admit that I am a huge fan of these kind of lessons and am waiting impatiently for their development and improvement.

by Dainty Speck () | *09.12 15.12.08* words: 526

Generally, we really like our lessons with YouTube . There is no unnecessary stress and tension, and, as we know, positive atmosphere and low anxiety level are indispensable for teaching.
First aspect expectations vs. outcomes initially, we thought that there would be too much hi-tech equipment and that we would be lost somewhere among all different cables and plugs. But the explanation which was provided was informative enough and we managed not to fall behind. We also believed that the topics would be similar so far we've believed that Youtube means skits, songs, blond ladies advertising their charm or stupid geeks who try to jump to a puddle from 200 m. So we were positively surprised to find out that Youtube can be a real treasure house of serious subjects ranging from atheism to serial killers. Maybe the vocabulary is not as advanced as our teacher would like to, but it is a real-life language with high communicative value and there is a huge chance that we will remember and use it.
Second aspect that has not been mentioned yet but which, according to us, deserves some attention concerns the way in that discussions are conducted. It has been really an invaluable experience for us to be allowed to freely exchange our ideas since during our different classes we aren't given such an ample opportunity to do so. Nevertheless, we have come up with certain ideas that could refine this part of the lesson a little bit. We think that it would be quite

beneficial to have an open discussion from time to time. By ‘open’, we mean not forcing anyone to take any of the sides and play devil’s advocate. We don’t question the educational value of such an exercise but sometimes it would be simply better to allow people to divide themselves into those who actually advocate a certain idea and those who don’ t. Moreover, we have a certain hint for those who prepare the presentations. Since we all are potential candidates for teachers, we should behave like real ones and follow the well-known principle: the less you speak, the better. Unfortunately, some of us tend to forget about it depriving others of this chance.

Another thing that deserves mentioning is the development of general knowledge that the course entails. In the presentations, we all mention controversial subjects which to a great extent concern modern life as well as us. As the materials that students prepare are highly informative, we have a chance to find out a lot about the issues concerned and thus we develop our own opinions. And consequently, I think that such a course has a great educational value for us although it is not as intensive as the second-year vocabulary-enriching classes which we had the pleasure to participate in. What is also important for us as future teachers, especially those who did not choose methodology as their specialization, is that we have the opportunity to prepare lessons and conduct them, maybe not always as impeccably as we wish to, but it is always invaluable practice which we wouldn't be allowed to have but for the YouTube projects.

by Asian Woolly () | *10.12 15.12.08*words: 222

I must agree with my colleagues. At the very beginning the whole idea with You Tube presentations seemed a bit strange to me. Even though we were explicitly informed how to approach this unconventional learning/teaching method, many of us failed to understand it. However, as the time went by we have managed to fathom the mystery of this undertaking and, as far as I am concerned, the presentations conducted by us were not so mediocre. Still, some improvements would be advisable.

When it comes to the lexical aspect of these classes then yes, it was not appropriate for our level. Nonetheless, we have already agreed that it seems unfeasible to extract sophisticated vocabulary items from You Tube videos. They should definitely come from some additional sources (mainly written texts).

However, during our studies we have already had dozens of words to learn by heart (and we still practise it-Newsweek) and for me this should not be perceived as the sole purpose of the learning process. The classes based on You Tube give us a chance to develop our autonomy and practise our teaching skills. With more effort on both sides the pedagogical approach that has

been adopted may yield very positive results and I would not abandon it. I am sure that the whole year would like to continue with this type of classes.

by Awesome Alien () | *16.12 15.12.08*words: 459

Firstly, I must admit that I was not really able to imagine the lessons based on Youtube sources. Despite my initial scepticism, it turned out to be great idea that I wouldn't like to abandon. Some changes, however, would be useful.

In my opinion, the time limit for each presentation should be definitely extended as we all were really pressed for time while conducting our lessons. My idea is to have only one presentation of, let's say, 120 minutes during each class. The remaining 15 minutes can be devoted to the discussion of the pros and cons of the lesson or of our expectations concerning the next presentation. If the time limit was to be extended, it would be good to choose the teachers two weeks before the actual presentation.

What is more, the application of some written texts could be also useful. The texts shouldn't be very long but they should be interesting and related to the topic of the presentation. We could find them in numerous online newspapers editions or even in books on the topic. We could read them during the presentation.

Moreover, the vocabulary items should be presented in context. They shouldn't be isolated. It's a good idea to present them in context, in the previously mentioned texts, or simply in the sentences. After such a contextualisation we could use them and do some vocabulary exercises such as: matching, filing the gaps, multiple choice, matching the synonyms or the antonyms, writing the sentences using these words, true-false exercises, we can also use some crosswords created to incorporate the vocabulary covered during the lesson. As for vocabulary itself, it would be good to use the items which did not appear in the videos, but also the ones that are related to the topic and can be found in other places: vocabulary books, dictionaries, articles etc. Youtube is not very affluent place when it comes to proficiency vocabulary items.

Speaking exercises can be also varied. We could use the role-play (which I think is the most interesting J), organise some debates during which every person should present the different point of view or her/his own viewpoint; we could discuss the articles or videos in pairs and do it later in front of group or have some kinds of interviews and change our partners.

I believe that the whole Youtube project is beneficial for us as it is really enriching in all contexts: we practise listening and speaking, we learn new vocabulary which (starting at least from previous presentations) is on proficiency level, we practise our communicative skills and learn

how to express our views even if we've just heard about some issues. Generally, I'm sure that the changes will contribute to improvement in the level and quality of our presentations.

by Missing Brooch () | *20.12 15.12.08*words: 896

Ok, here it goes: I liked our YT presentations, because they did not require yet another night of burning the midnight oil for another vocabulary test. To tell you the truth, I am a bit fed up with studying nothing but vocabulary. That is why I believe that for many of us this project was a breath of fresh air and a springboard to a more innovative approach to teaching / learning. Contrary to some viewpoints, I believe that this idea was an eye-opener and taught us a lot! Those may have not been words as such (I believe the lot I am covering in Mr.Szâ™s classes is enough) but something else, maybe even more important (considering our future). We had a chance to conduct a class with people of a similar level, we had the opportunity to prepare a presentation of our interests or of some pressing matters we believed should be discussed - or we had a chance to speak bluntly about taboo subjects. What is more, we had a chance to actually TALK and DISCUSS matters that are nowhere to be discussed. As for the improvements for future presentations:

1) As my peers already mentioned: if you insist on more vocab, we have to incorporate reading materials into our presentations (It is basically impossible to find such a video on YT which would meet your requirements there are few things more advanced than Here's the News and Mr. Skipper. And those things cannot be found in the YT database!) If that should be the case, we need more time for a presentation. Preferably one per class: this gives us enough time to present videos, use some reading materials, hopefully expand our vocab pool, and do some talking.

2) As we have the benefit of the computer room (and hopefully the Internet as well) we should use it as much as we can! Maybe we should incorporate the use of individual computers for our presentations? Use Hot Potatoes for vocab exercises for example? Of course I am aware that not all students are acquainted with this program, but you could prepare a separate class in order to give us a tour of it so that others may use it in future presentations.
3) I also think we should e.g. BBC radio programs and include strictly listening exercises into our presentations. This might prove satisfactory: first we watch a few videos, than we have a

listening exercise with filling in the gaps and then we move on to vocabulary items. In that way we cover more typical English skills into one presentation.

4) When it comes to the choice of presentations, I believe we should do some brainstorming beforehand, so that we may know which topic will actually be greeted with interest and which one with indifference. To give a tangible example: I believed that the topic of my presentation was appealing (UFOs) but while conducting the class I did not feel this involvement in the matter from the students, as I have felt while participating in the Polish Immigrants in the UK presentation. Don't get me wrong! My presentation went well but because not many students were touched by it personally, I believe their engagement in the discussion, or the class in general, was simply smaller.

5) Again, when it comes to my presentation, I definitely need to narrow the subject down a bit in the future. So what would I change if I were to do this presentation again? I would change the scope of it. The topic UFOs by all means is too general! I should have focused only on abductions, or the disputes between science and imagination, or give examples of UFO encounters on Earth: Area 51, crop signs etc. What I did was cover a few general things and ultimately by doing this, I eliminated other important facts. That is why the presentation felt as if it was lacking some important elements.

6) Another idea of mine: There is a series called Boston Legal (about lawyers). In each episode this group of lawyers encounter a different case which they have to present in court. Now these trails are (at least to me) heavily engaging as they often tackle with controversial sociological stances. What is more, those lawyers like to play with conventions and have a lot of controversial beliefs which they do not hesitate to present in court. I believe watching a few episodes of this series from time to time would be perfect ground for a heated discussion in our class. Additionally, it is of an American production (=understandable) and as it is targeted at a more sophisticated and demanding viewer, it also has quite a few advanced vocabulary items (which could later be covered in class in a form of exercises).

7) Last but not least, I believe we should be given a tour on how to use the projector, how to connect it with the computer, how to use the speaker etc. Why? Because as of recently, I think we relied more on luck not knowledge in doing those matters. You had a few laughs, but we were terrified of destroying the machinery. You threw us in at the deep end hoping we would succeed. Well, we didn't and we spent precious time trying to decipher what to do instead of

engaging and focusing on the presentations

I think I wrote too much :) I hope I did not bore anyone.

Section 4) Sample interview transcript

T: What was your lesson about? Couple of sentences about it.

S1: Our lesson was about game shows. We presented different types of shows form all over the world and we discussed why people take part in such kind of entertainment.

S2: Intelligence and Genius. We tried to define what's intelligence and then focus mostly on child geniuses. NA present the examples and discuss what is the life of such child prodigy. Is it a prodigy or a tragedy.

S3: Our topic was about Unsolved Mysteries and generally our lesson concentrated on different types of mysteries e.g. Bermuda Triangle, Mary Celeste Ship and the main aim was to decide whether people believe it or not, what is the attitude towards such things.

T: I did As you about it in the questionnaires but I was wondering if you could share it with us now. What was your motivation to run this particular lesson/ topic?

S3: IN our case there wasn't any- there was a brainstorm and we decided to.. check whether YouTube has anything to offer in this particular subject and there were some particular mysteries we could find something about. Sometimes there was a lack of videos for the topic we decided to choose.

S;2: when it comes to us there was a similar case so we discussed many possibilities and then checked whether there are certain valuable movies on this topic and if we managed to find something we decided that this topic would be ours- at first we chose a different topic but we couldn't find any videos so we changed .We wanted to do sth about hypnosis but there wasn't any valuable videos e.g. about examples of hypnosis. *T: What do you mean by 'valuable'?* we only got examples of hypnotic trances or parts of shows presenting people hypnotized- how do you react to hypnosis. Bu tfor example there were no movies concerning some knowledge or some comments from specialists- only the instances of hypnosis*./can they search?/* So we did not have any base for exercises.

S1: I came up with a topic first and my main motivation was to do something original. So I came with the idea for my topic to be Game Shows and I had to research it came out very well I wanted to broaden the idea. But as my friends have noticed, first I wanted to have some material showing some types of game shows but also I wanted to have some comment from the specialists for example how do game shows influence psychology or sth like that and but I did not find anything like that. T: so you had to tweak it because you could not find the right video. S1: Yes,. But it was not that disadvantageous.

S3: I think in the case of Eating Disorders- in the first semester lesson it was much more difficult to find something valuable because we had to go through a whole pile of different rubbish

/**students find that YT features lots of pedagogically useless stuff/** to find something valuable. In case of Unsolved Mysteries it was quite different because the movies the films that were provided on YouTube were, let's say from technological point of view, form scientific point of view. S3/2 Yes- we were also able to choose the videos from very many different angles. For example we had Marry Celeste case, Hamilton Curse- so it was much easier to choose- S3: Simply we were not limited just to one particular mystery – Yes we had like a few topics.

S1: I want to say something – that I find my research very valuable but in finding a good video helped me pre-research in the internet /***students devise their own strategies to handle the complexity of the task****!*/ on my topic because I found some interesting examples of game shows and then I looked for the titles on the YouTube so I did not have to go through many worthless videos but was focused on the particular. So it's like a pre-research in the internet not in the YouTube so that you have some ideas noted and you then search YT according to those ideas. In previous class in previous semester I did not do that and it was much harder.

T: What do you think about this idea?

S3: It's a very good idea, when you go through YouTube movies and you see what people upload there actually you are sick and tired and shocked. S3/2 and shocked, T: *How would you describe what they actually upload ?* It's quite worthless. *T: Hadn't you known about it before*? Maybe we knew but not to this extent. Because were weren't searching for the YouTube videos so much. S3/1: I remember when we were preparing Eating Disorder presentation I had an idea to do something about suicide and violence and such stuff. And when I started to research YouTube for this stuff, I don't know ,the majority of the films was about making jokes, pretending suicide, a lot of Emo stuff and so on. Actually it appeared completely worthless.

S2: In our case it was not so difficult maybe- although it would be easier if we did the research in the Internet because we were putting for example, like, 'child prodigy or child genius', and if we put it in Google then we could get names and then put it in YT. S2/2: Such preparing that B was describing before is also possible on YT because for example, if we wrote 'intelligence' and click it then emotional intelligence appeared there as well. So we had some different perspectives on YT as well, S2/1 and then we got a new idea.

S1: But when I look on the Internet first about ideas for the exercise because when I found examples of these vintage American game shows I also found the information about them, where the roots are, so I also included this in the exercise.

T: I usually ask you after the classes how much time you spent and the number of hours always baffled me, what was your motivation to invest such a tremendous about of time into preparing a single lesson?

S3/2: We were preparing for about , we were meeting for two day and each day for about five hours, something like this with breaks of course. At first it was hard to find these videos to somehow to discuss them and then to prepare the whole lesson, the who le schedule . It was difficult, S3/1 especially role-plays, and the exercises . Something that would suit (…) the subject. S3/2 Also remember about the time, proper time.

S1/2: I think the most difficult was to prepare the thing with all the exercises – how we can use the videos, films and YT films to incorporate them into the lesson, and I think it was the most time consuming. I remember that I spend five hours only uploading because I had some problems with it (all laughing). Also preparing the pdf file, it was not easy or difficult but it was time-consuming because you have to be careful not to make any mistakes and so on. *T: But did you get anything form it*? S1/1: after this lesson I know how to prepare pdf files. It's useful. S1/1: Because we did not meet in person so it was also difficult to communicate via email and Skype S1/2: but we managed to.

S2: We divided our work, I mean we had a meeting but later we only we found appropriate films we decided to take these to and take these two and we created exercises. And we communicated through net as well to share our ideas. Uploading was frustrating (.. *more agree*) I really hated it as at one moment I lost the connection with the internet and again I had to upload once again and I could not upload pdf fill and so on but I managed.

S1/2 /T: *Any frustrations*? Yes also with uploading because some things were not working, but once Sunday (sacrifice – *all laughing*.)

T: Suggestions for improvement of the course?

S1/2 In my opinion it would be better if we worked in groups of free because two people it's not enough- it could be easier because it's too much work. For example if there is a group of 4 or 5 it is chaos it was less work but it was chaos because people could not manage with each other during the lesson. But I think a group of 3 people would be netter. That's my opinion.

S1: I think a pair was OK but I did not do the uploading, but I agree I found 4-people groups I did not like them at all. Because the work division was uneven and we couldn't communicate that well. And I did not feel I was doing the lesson actually that much , so small groups is a plus.

If you do not say anything I will think that was an ideal course…

S3/2: That's how we are thinking (all laughing) . maybe that there were some technological problems so if there weren't the work would be much easier. I enjoyed working in pairs and in groups of three because we were working previously in the previous semester in three.

T: (…) what about technological skills in lesson preparation and lesson teaching?

S1: I think I don't have it that good- technological skills, and I found even though I was not uploading, when I was preparing the lesson. All those tiny things with the computer plus I was not sure (gesticulating)I think the practice would help. S3/2: Yes I agree, S3/1: When you know how to upload all this stuff it is extremely simple. I am also technologically handicapped but I managed. S1: if there was some blue line – keep calling us- sometimes vey helpful (a helpdesk)

T: If you were to do it for the 3rd time or or time- Is it easier every time you do it?

S2: (all agree) Yes, because we have previous examples, we have some basis and we know how to do the lesson plan- What sort of videos to choose. What kind of exercise. What works well and what's useless. What will encourage students and generally what people like.

T: How was your lesson influenced by other's people's lesson? Was it influenced in any way?

S3: we were at the very beginning so we could not be influenced by other lessons. S2: I think it is a very difficult task to be the first because they did not have any example to follow. And later on we knew how to do certain exercises and so on. S2/2: when something was successful then we tried to incorporate it into our lesson as well, slightly modifying it.

T: Were you refining your teaching skills? Was something happening with you teaching skills then?

S1: yes, because when you observe the presentation you notice those distinguishing mistakes and then you try to avoid them./*ego? or something calling form more attention and improvement than in the case of regular school practice*?. Although it is not that obvious because when I doing my presentation I wanted to be very original and creative and focused on that but I was trying to avoid mistakes that people did previously and were commented in the comments thing /*learning from comments/*. S3: It was very beneficial in terms of teaching skills because I had never had the opportunity to work on a lesson with so advanced students simply. And it is also not only the level of English but also the fact that we have some (private?) connection and it is actually more stressful /does not seem like a criticism/ . S3/2: It was more stressful but it was also more pleasurable. (others agree). Because we could communicate at the same level and we shared the same knowledge. S2: I guess we had to come up with some creative ideas- like for a discussion- if you give people 5 minutes you have to give them the topics that they will be able to discuss for five minutes- not that they just answer the questions and for the remaining time they are doing nothing or discussing something else.

T: In terms of the language – has anything else been happening- this was skills course (practical lesson)?

S3/2: I haven't conducted this lesson before so the lesson connected with some technological usage, the internet and the YouTube videos, and I think that the language used in the videos was precious and was valuable also because it was not very formal language – it was informal- Sometimes it was hard to identify the speaker ….to know what they were talking about. So I think it was quite extraordinary. S1/2: I think it was the biggest advantage of such kind of lessons. Because we are exposed to real life language so we have a chance to hear and we have a chance to express our opinions on real and true topics we are interested in. We speak a lot. S1: Yes, it is fantastic that the language is connected with the situation – you can see and you can hear it- this is really valuable.

T: was there any benefit language wise for you?

S1: I think it is difficult to notice it on this level but truly there was (others agree). S2/2: we do hope there was.

T: Wasn't it leisure only?

S2/2: No, S1: I think some of the topics were unusual so you could actually learn something from that field. S2: and we had the opportunity to put in use the vocabulary that we had. And I think it could be noticeable in the comments (all laughing) also in the language used during the lesson.

T: Comments are generally very well written – how would you explain that to me.

S2/2: because we had time to think to consider the lesson, to prepare our comments what we really think. S3: to replace one word with a better word.. to think about a better equivalent (all laughing, confirming)

T: any value in reading the comments? Weren't people just trying to pamper each other?

S1: When people criticize you , first I feel a little bit offended, but then you start to think they might be right about it. I'll put it this way: You always idolizing your presentation, so you get to read a lot of people's comments to other people's presentations, you notice their mistakes ect, and that is OK . But then you read the comments about your presentation and then you say ' how could they say ..these things' because you think it is the most valuable because you were presenting it you were doing it. S3: when I was reading these comments I think they were incredible and beneficial because I was purely amazed what kind of details people can mention actually- what do they see exactly (others agree) what kind of mistakes. So it was incredibly beneficial to read these comments. S2: Positive comments were also valuable because they were giving us some kind of confidence and satisfaction but those negative comments also made us aware that we did not make some mistakes and that some improvements should be made. And while preparing the next presentation we tried to take them into consideration.

T: What kind of mistakes were commented on?

S1/2: for example that there wasn't any connection with the film. You've got a task and you've got a film but there is no connection –so what's the ;purpose of the film? So I think it was this kind of mistakes that appeared most often. Or something with time . S3/2: or the quality of the videos were sometimes disappointing. S2: the instructions were not comprehensible enough so we did not know what to do. S2: Or that the questions for discussion were too easy.

T: what if we had no YT?

S1: Maybe it would be easier to prepare because we would not have to look for the videos and connect them with the tasks and discussions but I think it would not be so attractive and valuable. S2: and challenging as well. S1: I do not think it would be easier because we would not have this motivation to work because you wouldn't have all these tasks, these video , new info and they are all stimulating and it's OK. S2/2: and you have a wide range of possibility thanks to YouTube. You may choose various movies, show the topic from various perspectives, and make it very, very interesting and engaging. S3/2 And you become creative and original. S2/2: You are not onlay using some texts, vocabulary exercises or whatever. S3/2: and everybody can do it like that. /*need to be creative, original, and bring variety through multimedia*/

T: Has this course influenced your teaching skills in any way?

S3/2: For sure, because it's showed us that we can conduct a lesson in a different way. S3: Yes, that is no conventional, original, interesting. And with the usage of different means for example YT. /need to get off the beaten track/. S2/3: that is why everything had to be really carefully thought over. S3/2: Maybe that we should not be afraid of using the internet */benefit to teaching skills/* Is2: I also think we learned to be a lot more careful because if we spend so much

time preparing the lesson we want to do well during the classes because it would not be worth doing in any way.

There were no threads about Addiction.

APPENDIX XIV Reflective Statement

My professional background, in addition to language teaching, includes online language tool design, running Computer Assisted Language Learning courses and teaching pedagogical ICT to TESOL teacher trainees in language teacher trainee institutes in Poland. In this reflective statement I provide a summary and present the link between the various elements of the EdD programme and reflect on how they contributed to my professional development. The EdD requirements were that I write five essays, four of them relevant to my practice and one examining The Education for All Game, in addition to conducting the Institutional Focus study and the thesis research. A summary of these is presented below together with my comments on how the experience as a whole helped me develop as a teacher, teacher instructor and a novice researcher.

The five essays

My first essay, ICT and the Professional- Emperor's New Media, discusses ICT as a series of critical incidents, namely the googlisation of knowledge, which forced educationists to re-evaluate their stances. I also point out that, in the hands of educational managers, ICT is becoming a tool of control under the guise of quality assurance. I propose the redefinition of traditional notions of professionalism by supporting an ICT-enhanced extended professionalism as the counterbalance to what I call the ordeal by silicone that many educationalists have been subjected to. Further, I attempt to present the various attitudes and actions of those who are trying to reassess their value and place within the educational system. I also point to a sounder pedagogical scaffold as a means of equipping teachers with the necessary methodologies to reflectively deliver ICT-enhanced content. Finally, I suggest that accepting ICT, pedagogy and the content knowledge of the subjects as an axiomatic unity could provide adequate schemata both for novice teachers and those who need to redefine their roles in new realities. As a reflection, in this essay I had independently proposed what in the same year Mishra and Koehler (2006) called TPCK which continues to be one of the leading paradigms in the field.

My second essay, ICT Manifestations in Teacher Practitioners' Professional Practice, is a qualitative research proposal in which, by using grounded theory, I position TESOL teacher trainees within the investigative scope to explore the factors influencing their ICT-related decision-making processes and the accompanying contexts of the earliest stages of their practice. My aim was to develop a set of propositions illuminating the nature of their presence of ICT in their teaching. In particular, I was interested in ICT use and the principles which govern

its integration at particular points on the teacher trainees' educational continuum. The assumption behind the study was that pedagogically justified and properly employed technology can and should be an inherent part of the teaching/learning processes. Though my main research question was why practitioners choose to use, choose not to use or fail to make any choices concerning ICT, the study did not attempt to measure the effectiveness of the ICT/CALL training that teacher students receive during their course of study. Thus, the research aimed to develop a set of propositions presenting a matrix of vectors impinging on the choices which underpin teacher trainees' ICT-related elements of practice during the mentor-led teaching internship in my Institute. Through designing this proposal I had a chance to acquaint myself with the principles of conducting a qualitative study using grounded theory, and to reflect on teacher practitioners' actions helping me to consider methodological, technical and logistical issues that are at play.

My third essay, *A Report on the ICT/CALL Competencies and Attitudes of Teacher Trainees' Mentors,* was structured as a small-scale study which set out to probe TESOL teaching practice mentors' awareness and the actual use of technologies in their teaching. It was in fact an auxiliary study to the IFS as it assumed that in order to understand some aspects of why trainees decide to use ICT in their practice, it is essential to investigate more closely their mentors, who in the apprenticeship type of system, offer guidance and often act as role models. In other words, through focusing on mentors' beliefs and practice, I sought a perspective on the trainees' actions. Trainees' development was viewed as a continuum with ICT-relevant amplifying or de-amplifying factors which were seen as the catalysts to their decisions concerning the use of modern technologies. The research findings indicated that mentors generally believe that trainees should be doing what they themselves are actually not doing (nor encouraging the trainees to do) which in this instance is to use ICT in their everyday practice. Moreover, some of the mentors perceive ICT as a mere gimmick and an obstacle to the successful fulfilment of curricular requirements during exam-focused teaching. I understood that in these circumstances the trainees would have to act despite and against the environment. Consequently, mentors, whose role as skilled practitioners is to introduce their disciples to the arcana of teaching, constitute a de-amplifying factor in their ICT-specific development. Thus, I was able to continue the investigation of issues concerning the application of ICT in ELT and address the above concerns by suggesting the creation of a collaborative internet-based platform which features CMC at its core.

My fourth essay, *A Reflection on the Realism of the 'World View' Implicit in the Classroom Challenge,* offered a critique of some of the elements of The Education for All Game tested within the IOE, University of London. I observed that the Game offers a powerful bird's eye view on education, politics and international economies, yet it inadvertently compresses time and space and imposes simplifications that might lead to the formulation of distorted impressions concerning the intricacies of the decisions educationalists face. Additionally, the game compromises reality for the sake of practicality, clarity and playability and offers a de-contextualized setting that does not account for the trajectory of global social changes. Though this essay was not directly connected with my professional interest, the task of critical appraisal of the game allowed me to take a more global perspective on education and realize some of the macro-factors (i.e. political, social, economic) which shape education.

My fifth essay, *Playing the Player-Teacher's Reflection on the Nature of ICT Discourses,* was an attempt to examine both the oppressive and the liberating aspects of technology in education. In a way, it drew on some of the ideas touched upon in the first essay, *ICT and the Professional-Emperor's New Media,* further examining the discursive construct of pedagogical ICT. On the one hand ICT displays its liberating nature by introducing the discourses of freedom and opportunity. For instance, it changes the delivery and ownership of knowledge and it helps structure the defiance against rigidity of curricula. In addition, ICT offers an alternative to the uniformity of products offered by publishing houses. On the other hand, ICT is charged by the content it carries, either political or economic. One of my main observations was that ICT no longer offers a possibility of opting out (teachers autonomy is limited) and it has emerged as a new self-relying strata that carries discourses of power and control. This can coerce the teachers to internalize the desired modes of behaviour as self-regulating and self-policing persons. Furthermore, ICT can also be used to invoke shame and guilt as a control device, which is even more likely in a situation when the design methodologies of the ICT worlds are not transparent to teachers and the locally-produced feedback to those who design the ICT tools used for education use becomes hardly possible. I concluded that education managers should be careful not to let the indiscriminate imposition of ICT environments happen, as certain aspects of education do not lend themselves to be conveyed through technological means. These themes echoed in my subsequent thesis research where I attempted to structure the learning/teaching environment and examined how teacher students are influenced by ICT-enhanced practice.

All of the essays carry the common denominator of education and technology. Reflecting on my progress, I observed that my unbiased fascination with technology had been waning and was

gradually replaced by more careful and critical judgments. Most importantly, I was able to realise many dangers that are inherently linked to the presence of ICT in education. However, I could also see that many of these risks could be averted with the solid backbone of acknowledged pedagogies in place. I concluded that the potential of pedagogical ICT cannot be understated as the tools and resources this medium offers. Despite their relatively short shelf-life, they exert a huge impact on both professional and personal lives.

On a personal level, writing these essays evoked the feeling of uncertainty which forces me to constantly revise long-held cheerful notions of what technology brings to our world. Noticing problems is a prerequisite to being able to tackle them effectively. I surmise that my endeavour to structure all of my essay assignments in such a way that they would be complimentary to both my IFS and my thesis was a successful one.

The Institutional Focus study

Through my Institutional Focus Study (IFS) I was given an opportunity to investigate issues that are at the core of my professional practice in the linguistic institute in which I have been designing, organizing and running courses on ICT in Teaching English for both teacher trainees and in-service teachers. My professional motivation was fuelled by the fact that teacher students and teachers, though potentially equipped with at least a rudimentary knowledge of pedagogical ICT tools, do not use them in their teaching practice at all, or not as often as one might imagine or hope they would. Thus the analysis centred on a group of language teacher trainees engaged in teaching practice in a secondary school in Krakow, Poland. A requirement of the practice was that they employ ICT, to an extent of their own choosing, as part of their teaching. I examined their understandings and uses of ICT, with a particular emphasis on relationships between the cognitive processes, personal dispositions and institutional factors that influence the attempts of the trainees to become competent integrators of technology into their teaching.

The two main areas to emerge are, perhaps unsurprisingly, the trials, tribulations and (very) occasional joys of trying to develop TPCK, or something analogous to it, and a preoccupation with the what and how of becoming a teacher in a more general sense. This discussion of the role of the teacher incorporates three themes: Pedagogical content Knowledge (PCK), the intercultural ethic and what I have called ‘discourses of social pragmatism’. The latter - and pragmatism more generally - appear to play an important mediating role in the ways in which

the trainees assign priorities to the development of ICT-competence. Thus, the study took the examination trainees' temporal perspectives and orientations beyond the notion of 'presentism', or the imaginative limits which make it difficult for the individual to project forwards into the future and envisage themselves as successful teachers, and offered an insight into the ways in which trainees may settle for provisional presents and idealised futures, particularly where the integration of ICT is concerned. The scarcity of reliable technological equipment, and the lack of rigour and integration in the methodological/pedagogical elements of courses, exacerbate routine presentism and leave the desire for the professional development of TPCK – or a set of knowledge and dispositions analogous to it – in a perpetually receding, idealised future.

In terms of professional significance, perhaps the most important aspect of the research was its calling into question the assumptions of applicability of leading edge models of pedagogy and ICT. I realised that Mishra and Koehler's (2006) notion of TPCK, while an exciting theoretical development, is the product of a well resourced and theoretically reflexive educational culture. Its intellectual presuppositions must be set against not only the material/institutional constraints hindering the development of ICT competence, but some of the local cultural factors that impinge upon trainees. The findings also allowed me to question the widespread assumption that trainee teachers want, as a matter of course, to extend their practical integration of ICT into their teaching. The complicated, time consuming and uncertain quality of technology in the context under study clearly play a role in influencing the formation of some of the trainees' core perspectives; these may not involve allocating a particularly high priority to ICT, particularly in social contexts characterised by deeply pragmatic and relatively unreflective forms of practical knowledge and self awareness.

In reflection, I would suggest that this research has addressed the question of 'what happens when trainee teachers are asked to integrate ICT into their work?' in a way that is both empirically rich and theoretically serious. Moreover, the intellectual and professional benefits of conducting the research have been considerable. In my previous essays I identified and discussed a number of ICT-relevant catalysts to teacher trainees' decisions concerning the use of modern technologies; in particular the general ICT and language specific ICT training, institutional regulations, pedagogical training, graduation requirements and their mentors' practice and attitudes to educational technology. This research has informed my practice on a more theoretical level, helping me construct my understating of the intricate web of factors behind the trainees' decisions (or lack thereof) to use or not use ICT in their practice.

Furthermore, my professional practice has also been informed in a way quite contrary to my intuition; as long as teacher trainees do not integrate a conceptual understanding of ICT into their teaching, develop a confident independence from its constraints and possible pitfalls and receive positive amplifications at various career aspects and levels, they will choose to rely on less fallible methods, denying their students and themselves the benefits offered by educational ICT. In the absence of clear signs that in the near future the Polish educational system will position ICT at the core of teacher training and student teaching, developing a sound TPCK foundation by means of a single ICT course presents itself as a chimera worth chasing.

The Thesis

When designing my thesis I located the main question in my practice and extended it using the context of my previous research on teacher training and technology. Thus the findings addressed the inadequate implementation of technology by graduate and post-graduate teacher students in their professional practice, as it was one of the key findings of my Institutional Focus Study. Whereas the literature on teacher beliefs is quite abundant, the same cannot be said about the literature on the beliefs of ELT teachers in ICT- rich contexts. There is also scarce literature on the interplay of teacher beliefs with a perspective on their relation to teacher knowledge. Thus, this research investigates how the ICT CPD course influenced teachers of English with an aim to investigate teacher beliefs and related concept as a direction to answer to the research question of how such practice influences teachers' pedagogical development.

In addition, the research questions were motivated by my interest in the efficacy of allowing teachers to decide the content and form of the practical English and TESOL classes and by my interest in examining how the classes promote the professional development of the participants. Through this final research I attempted to include various elements emerging from the assignments in the programme: teachers' knowledge acquisition and cognitive management of the competing demands of competence in ICT, pedagogy and content knowledge in the context of on-site peer ELT ICT-aided practice. The process of the study precipitated my professional reflexions; I was able to reflect on some of my beliefs which affect my educational choices and actions. In addition, the process of inquiry brought me closer to a realization of what the participants assumed was real and how they interpreted and acted on their view of reality in the digitally-enhanced training. In particular, I came to a greater understanding of the process of formation of professional beliefs in an ELT CPD setting. Thus, supporting professional development in teachers must account for the transformation or reconstruction of their professional identity and hinge on the implicit notions of 'a good teacher' held by the

participants. This perhaps also addresses the concern of 'presentism' in relation to using ICT in a language classroom identified as the key finding in the IFS.

The thesis combines GT methodology with a more traditional approach by re-engaging with the literature and going back to data. As a result, the focus moved from educational technology (digital video) into teacher beliefs and teacher knowledge. This allowed for an original contribution to the existing body of knowledge by proposing a new construct for understanding teacher beliefs and relating them to teacher knowledge, thus indicating how the findings advance the study of the subject.

Finally, this grounded theory study presented me with an opportunity to study mental habits and personalities of people as they grapple with the shared constructions of their roles within specific social processes. The experience of analysing and reflecting upon the minutiae of a part of this particular process has been deeply absorbing, satisfying and, in some sense, dramatic: having never looked so closely beneath the surface of social interactions previously, I am left with a sense of the social world, and social roles, as being more complex, subtle and full of interest than I had imagined.