



'How in-service language teachers become effective users of CALL for online teaching and learning: A case study of their development processes in a transformative online teacher training and development course'

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Abstract

The design of courses for training teachers in the use of technology for language learning is a continuing focus of interest in the teacher training community, and standards have been proposed regarding the skills and knowledge that teachers need in order to use technology with their learners. However, the issue is not only what teachers need to know and can do with technology, but how teacher training courses can be created in ways as to help teachers to both implement technology effectively and keep pace with technological advances. Evidence about the process of developing those skills and knowledge is therefore central to the design of teacher training courses which are both effective and sustainable, in the sense of being adaptable to different contexts and changes in the technology.

This thesis directly engages with the transformative processes experienced by language educators learning how to use technology for online language teaching. By examining how teachers develop their CALL competence for online language teaching, it is possible to suggest strategies to improve models for teacher professional development in CALL.

This investigation is a case study of 8 in-service English language teachers in Chile who participated voluntarily in a guided online training and development course for Computer Assisted Language Learning (CALL) during 8 weeks. This course supported the teachers' integration of theory, practice and reflection and was delivered via the virtual learning environment Moodle. The design of the course was based upon four main components, namely socio-constructivism, transformative learning, the community of inquiry model and the skills for online language teaching. Evaluative instruments such as pre- and post-course online questionnaires and interviews, the teachers' log files and discussion forums and blogs posts in Moodle were applied to collect data. These data were analysed using Content analysis and descriptive statistics in order to uncover the teachers' developmental processes.

The findings of this study highlight the relevance of both collaborative and individual reflection to developing CALL skills and knowledge in CALL teacher education. The presence of an online tutor was also identified as key to promoting teaching presence in the online course. Additionally, the results suggest that a spiral rather than a linear or pyramid model provides a better representation of how the teachers developed their CALL skills and knowledge for online language teaching. The outcomes show that the teachers improved their understanding of using online resources and gained the confidence they needed to apply that technology effectively in their language courses, a process that the study refers to as the development of 'digital self-esteem'. Based on an in depth consideration of the developmental processes revealed in this study, proposals are made for further research and recommendations are made for improvements to the design of the online training and development course.

Declaration

Publications associated to this thesis

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Dedication

This thesis is dedicated to my family, a fine example of social mobility.

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Chapter 1. Introduction

In language (L2) teacher professional development in Computer Assisted Language Learning (CALL), L2 teachers are required to develop their CALL knowledge (familiarity with technological resources) and skills (set of techniques to apply technology in the language classroom) in order to use technological resources to enrich their students' learning experience. This is a challenging goal in today's digital world, considering the rapid pace of technology, the language learners' profile (i.e. digital natives) and easy access to Internet and mobile resources.

Therefore, it is imperative that L2 teachers receive proper support to develop their understanding of technology so they are empowered to face such challenges and improve their teaching. How do L2 teachers become CALL competent? What can CALL teacher trainers and researchers do to improve the models they use for designing and managing teacher training courses for CALL? How can L2 teachers' needs be met as regards current and future technological developments? Answers to questions such as these will have implications for how to approach teacher training and development effectively in CALL programs now and in the future. Also, extending our knowledge about how teachers learn about CALL will help teachers continue to develop their knowledge and skills beyond teacher education courses for CALL, which will have a positive effect on teachers, their colleagues and their students.

The aim of this investigation is to examine how in-service L2 teachers develop their CALL skills and knowledge for teaching languages using online resources in an online teacher education course for CALL. This online course provides theoretical input and encourages reflection on the links between theory and practice. The study seeks to explore this developmental process, that is, the way(s) L2 teachers enhance their CALL competence for online language teaching. This involves investigating the teachers' attitudes towards technology, prior technological and

pedagogical skills, alongside the choices, actions and changes that help them become 'technologically-savvy' in a CALL professional development course.

1.1 Rationale

Second Language Teacher education has become a matter of interest and investigation due to the massive educational changes throughout time (Freeman, 2009; Hall and Knox, 2009). Nowadays, the language teacher is required to become competent in using resources such as technology in the classroom due to the perceived usefulness that technological tools add to face-to-face and online language learning and teaching. This is currently of great importance for educational institutions and policies, as the vast majority of learners come from a digital generation that has incorporated technology into their lives and education.

In general, second language teachers see technological tools (e.g. Internet) as rich sources of access to authentic materials which can be used with language students to encourage Second Language Acquisition (SLA). A number of CALL studies have been conducted (Hubbard, 1996; Warschauer and Kern, 2000; Chapelle, 2001; Lamy and Hampel, 2007; Levy and Stockwell, 2006) to evaluate the advantages and drawbacks of CALL in second language learning and teaching. Thus, language teachers have to become CALL competent in order to make appropriate decisions when incorporating technological resources in their language classes. However, although L2 teachers acknowledge the benefits of technology, using it to teach languages may be a challenge, mostly, due to the mobile and changeable nature of technological resources and the number of options available for L2 teaching and learning. Consequently, it is necessary to give L2 teachers appropriate support in order to help them to improve their teaching practices so that they can properly help their students in their learning process.

Hubbard (2006) argues that teacher training in CALL is mandatory nowadays, and presents 7 questions that teacher educators and researchers in CALL should consider in their academic practices:

1. What should CALL teacher education include?
2. How should the teachers be taught whatever it is we think they should learn?
3. When should they be taught it?
4. Where should they be taught it?
5. Who should teach it to them?
6. How will we determine they have learned it?
7. What are the obstacles to implementing the answers to these questions once we have them?

There is no doubt that progress has been made since Hubbard proposed these lines of inquiry, as literature in L2 teacher development in CALL has been widely discussed in academic publications such as Hubbard and Levy (2006) and special issues of peer reviewed journals such as *Language Learning and Technology* (2002, 2015), *CALICO* (2006) and *ReCALL* (2011). These studies are greatly valued as indications that researchers are moving forwards in promoting discussion and research in CALL teacher training matters.

As a result of this evolution, researchers in CALL teacher education have investigated L2 teachers' attitudes towards technology (Kessler, 2007) and identified skills (Hampel and Stickler, 2005; Compton, 2009; Healey et al, 2011) that L2 teachers need in order to use technology effectively. With regards to online language teaching specifically, Hampel and Stickler (2005) suggest that L2 teachers should possess a series of technological skills (to deal with online resources) and pedagogical skills (to implement online resources for teaching purposes) in order to teach successfully with online resources. They also argue that L2 teachers may build upon existing knowledge. Teachers may transfer, that is 'the ability to extend what has been learned in one context to new contexts' (Bransford, Brown, and Cocking, 2000, p.51), for online teaching some of the skills they have developed on their language teacher training.

Nevertheless, despite the available studies regarding the education of teachers in CALL (some well-known include; Son, 2004; Motteram, 2006; Levy, Wang and Chen, 2009; Hee Hong, 2010; Hu and McGrath, 2011; McNeil, 2013) further research is needed to actually provide more insights into the *processes* teachers undergo and how they change their views over time when learning to use technological tools for online teaching in formal CALL teacher development courses. It is especially important to investigate how teachers develop in collaborative learning environments such as online communities as technology is increasingly social and embedded in everyday life. Garrison, Anderson and Archer, 2000, suggest the term 'communities of inquiry', others such as Lave and Wenger, 1991; Hanson-Smith, 2006 call them 'communities of practice'. Thus CALL, and CALL teacher education research, is concerned with how language students and teachers learn in socio-constructivist environments (Motteram, 2012).

As a consequence, CALL teacher educators and researchers need to observe the developmental processes that teachers go through when becoming effective users of CALL. Thus, this study seeks to add to existing knowledge in L2 teacher development in CALL by engaging with developmental processes through a case study of 8 different teachers in 8 different contexts. This would allow CALL teacher educators to effectively move L2 teachers toward making informed decisions and be empowered to take the lead in their own and others' implementation of online language teaching in real language teaching contexts. Also, the theoretical framework and practical methods employed in this study aim to add to the body of knowledge of effective ways to conduct and analyze research into CALL teacher development.

1.2 Research Context

This investigation focuses on an in-depth and rigorous study into how in-service English as a Foreign Language (EFL) teachers from Chile and Easter Island develop the CALL skills and knowledge they need for online language teaching through an online teacher training and development course for CALL.

1.2.1 Why conduct this research with Chilean in-service EFL teachers

Firstly, the inception of this research comes from this researcher's own interest as language teacher, teacher trainer and CALL researcher and practitioner. Being an EFL teacher myself, I have experienced the benefits and challenges of using online resources with language learners. Therefore, my intrinsic motivation to support and give voice to fellow EFL teachers, particularly in my home country, Chile, inspires me to carry out this study.

A secondary reason to conduct this study comes from the fact that in Chile, learning English is seen as essential to narrowing down educational gaps and increase social mobility. Matear (2006, p. 140) states that 'in Chile the education system is highly stratified by social class, and this becomes even more pronounced with regard to foreign language learning'. For this reason, if teachers are more prepared to innovate, by using technology and online resources for language teaching, for example, they will be better equipped to motivate students and provide them with a useful language learning experience which will foster their bilingual education.

1.2.2 English language learners in Chile

In 2004, the Ministry of Education in alliance with Cambridge English Speakers of Other Languages (ESOL) examinations conducted a national diagnostic test for competence in English. They tested primary (grade 8) and secondary (grade 4) school learners (11.000 in total) in private and public educational institutions throughout the country. The pattern of poor results showed the worrying reality of English language proficiency among Chilean students. Taking into account the Association of Language Testers in Europe (ALTE) levels, the findings stated that 62% (primary schools) and 45% (secondary schools) of the students were below the 'basic user' category (i.e. comprehension of simple words and short texts). Only 1% (primary schools) and 4% (secondary schools) of the students were categorized as 'autonomous users' (i.e. able to understand main ideas and talk about everyday life). This means that there is a large amount of students in Chile

who have very limited understanding of English, thus the urgency to enhance English teaching and learning strategies (Ministry of Education, 2004).

1.2.3 English Language teachers in Chile

Regarding in-service English teachers, they were evaluated as well in 2004. The findings of the diagnostic test (Ministry of Education, 2004) conducted in 299 schools suggest that the role of the teacher is essential for the students' language learning success. As shown in the findings, the students whose teachers had a degree in English and/or postgraduate studies obtained better results in the test. Thus, there was a correlation between teachers' English language competence and the students' performance in the evaluation (Matear, 2006).

In 2012, the Ministry of Education issued a report regarding in-service EFL teachers' language proficiency. Here, 2,758 language teachers across the country were assessed. The findings indicated that a 40% of in-service teachers in Chile did not meet the language proficiency standard (B2 level) for English instructors required by the Ministry of Education. The teachers' deficient language proficiency could affect the use of innovations in the language classroom. For example, how can teachers access to technological resources, authentic materials and professional development opportunities if their language proficiency is limited? As a result, in the past few years, Chile's government has prioritized their educational policies regarding English education in order to improve the quality of English teaching and learning.

1.2.4 Chile's government response to English teaching and learning issues

Useful initiatives such as the educational program 'English Opens Doors' ('Ingles Abre Puertas', <http://www.ingles.mineduc.cl/>) have been implemented by Chile's Ministry of Education as a strategy to meet the teaching and learning needs of both L2 teachers and students. Some of the activities in the 'English Opens Doors' program include:

1. **The National Volunteer Center:** Native and near-native users of English work as teaching assistants in public schools.
2. **English summer and winter camps:** Students learn English in a 'total immersion' teaching approach during their holidays.
3. **National Competitions:** Debates, spelling bee and public speaking contests for primary and secondary students.
4. **Scholarships:** Study abroad opportunities for pre-service teachers, so they can improve their language skills and cultural awareness of the English language in English-speaking countries.
5. **Professional development for EFL teachers:** In-service EFL teachers have the opportunity to attend workshops to improve their language skills and teaching methodologies, as well as to be part of local language teaching communities.

Additionally, the use of technological resources in education, and for language teaching in particular, has also been fostered by Chile's Ministry of Education. The governmental initiative 'Enlaces' (<http://www.enlaces.cl/index.php?t=44>) provides public schools with state-of-the-art technologies, such as smart whiteboards, free Wi-Fi Internet connection, and self-access English language laboratories.

Nevertheless, despite the government's efforts to support English language learners and teachers, the effective implementation of such strategies have been problematic. For example, regarding teacher training and development, Matear (2006, p. 138) state that 'Chilean teachers are under pressure to incorporate continuous professional development for English language into already busy schedules-often training during their holidays and on weekends-and there is insufficient time in the working day for preparation of support material and other activities to facilitate active learning'. The government and educational institutions are aware of this situation, thus, the constant concern about how to implement effective teacher education courses. In the case of professional development for technology, the government has given the resources but failed to provide the teachers with continuous support which can help them not only to use

technological resources in their language classrooms, but also in their own professional education.

1.3. Research Gap

In his critique of research in L2 teacher education in CALL, Motteram (2012) presents a thought-provoking argument in relation to the ways CALL researchers and practitioners have been approaching research in L2 teacher professional development. He states that studies in this area have tended to be rather descriptive and predominantly of a quantitative epistemology. Thus, Motteram (2012) encourages new generations of researchers to modify their current methodological approaches for research in CALL L2 teacher training and development by using theoretical foundations from general L2 teacher education (see literature review section). For instance, he proposes the use of social approaches such as narratives, Activity Theory principles (Engestrom, 1987) and communities of practice (Leve and Wenger, 1991). These approaches, he says, may stimulate more insightful analysis of CALL teacher training and development courses in order to develop effective methodologies to support sustainable L2 teacher education in CALL.

In the 2015 *Language learning and Technology* special issue on CALL teacher education, Arnold and Ducate (2015, p.1) also highlight the relevance of conducting studies which focus on L2 teachers' developmental experiences in CALL. In their editorial commentary, they state that 'to advance our understanding of CALL teacher education, the main goal for this issue is to move beyond research on teachers' beliefs and attitudes and to investigate actual practices and competencies, especially from a longitudinal perspective, that traces teachers' development'. These views and suggestions are helpful, yet their implementation is challenging. Issues regarding theoretical frameworks to support L2 teacher education in CALL, data collection methods, validity, reliability and procedures should be considered, as technology could be used not only to deliver L2 teacher training and development courses, but also to collect and process data (e.g. online communities on VLEs, data mining).

The background to L2 teacher education and CALL teacher training and development shows why CALL teacher training and development has become a major concern in second language education. For example, Kern (2006, p.200) presents a challenging view of what to expect from L2 teachers nowadays saying that: 'success in CMC, multimedia authoring and distance-learning projects has been repeatedly shown to depend largely on teachers' efforts in coordinating learners' activities, structuring language and content learning, and helping learners to reflect critically on language, culture and context'. Consequently, it is necessary to support L2 teachers in developing their understanding of the role of technology and how it can enhance their language teaching.

While there are a number of existing resources that can be drawn upon when designing courses to educate L2 teachers in CALL, there is still a need to investigate the developmental processes of teachers on such courses in order to evaluate and build upon existing frameworks and approaches to course design. For example, using socio-constructivist and reflective approaches for L2 teacher education (Wallace, 1991; Mezirow, 2000; Johnson, 2009), the TESOL Standards for technology (Healey et al, 2011) Hampel and Stickler's (2005) identification of skills needed for online teaching and the community of inquiry model for online learning (Garrison, Anderson and Archer, 2000) are examples which strongly contribute to L2 teacher education in CALL. Nonetheless, in order to improve CALL teacher education it is necessary to learn more about the process of how L2 teachers analyse, share, transfer and develop pedagogical and technological CALL skills and knowledge. For this reason, this study aims to contribute to the design, implementation and evaluation of L2 teacher training and development courses in CALL, especially to courses delivered online.

This investigation, therefore, focuses on observing how L2 teachers improve their CALL skills and knowledge for online teaching in an online teacher training and development course. The findings from observing the L2 teachers' developmental processes in an online L2 teacher training and development course for CALL will allow this researcher to suggest improvements the design, implementation and

evaluation of CALL teacher training and development courses. This observation and analysis is important (i.e. the significance of this research) a means to (1) find ways to educate L2 teachers in CALL (2) support L2 teachers to make useful decisions for online language teaching (3) find strategies which serve L2 teachers in maintaining CALL skills and knowledge over time, and (4) report on how the observation process was conducted in order to improve techniques for L2 teacher education in CALL research.

1.4 Theoretical and Methodological Framework

In this study, the socio-constructivist approach is adopted, taking as a starting point Dewey's (1933) claim that knowledge is acquired based upon an individual's reflection regarding personal experiences and dialogue with others. This socio-constructivist view has links with both Piaget's cognitive ideas on learning and the socio-cultural theory developed by Vygotsky (1978). For Dewey (1933), critical thinking is crucial for promoting significant learning. In this study, this is adopted in order to provide L2 teachers with experiential learning in the online community of inquiry and guide them to analyse their teaching practices, and those of others, for their own professional development. The process of development is also considered in Mezirow's (2000) transformative learning theory. Its central argument is that learning is a transformative process that helps to improve people's individual and professional actions. In this sense 'transformation' is regarded as changes in people's frames of reference, as the outcome of reflection and collaboration with peers. Socio-constructivist approaches are predominant in CALL as technological resources foster interaction, communication and authentic materials that promote language learning and construction of knowledge. Therefore, L2 teachers should be familiar with and prepared to apply such approaches in their teaching contexts as well (Hubbard, 2004, Swain, 2013). For this study, the term 'community of inquiry' (Garrison, Anderson and Archer, 2000) is adopted for theoretical and analytical reasons. Shea (2006) describes an online learning community as a group of people with similar professional interests who collaborate, share information and support each other via technological resources for learning objectives.

The investigation also takes a design-based stance as the context of the research (i.e. the online teacher training and development course) was designed by the researcher. In design based-research learning, processes are investigated in a contextualized fashion. According to Dede et al (2004, p. 159) one of the principles of design-based studies is that 'research accounts for how designs function in authentic settings, not only documenting success or failure, but also focusing on interactions that refine our understanding of the learning issues involved.'

Therefore, the main reason to design the online course was to link the process of observing how teachers develop their CALL skills and knowledge for online teaching to the environment where the research takes place in order to obtain richer findings. This is beneficial, particularly in technology-mediated learning environments, as a means to improve their design. For instance, in teacher education in CALL, Beaven et al, 2010 created an online teacher development course which was then empirically evaluated.

The methodological framework of this investigation uses the case study strategy. Case studies have been proven to be appropriate to study processes (Yin, 2003) and also been previously used in CALL teacher development research (Motteram, 2006; Orlando, 2009; Cutrim Schmid and Whyte, 2012). The research design involves gathering data that will be analyzed qualitatively (pre-post course interviews, online textual discussions) and quantitatively (pre-post course questionnaires, log files). In relation to data analysis, Content Analysis has been a widely used technique in the exploration of online learning environments (Garrison and Cleveland-Innes, 2005; Hauck and Warnecke, 2012). In this study, it serves as a strategy to investigate the useful indicators that the community of inquiry framework (Garrison, Anderson and Archer, 2000) provides to identify the teachers' participation and evolution in the online community. Motteram's (2006) Transformative Education Scale for Distance Learners was used to interpret evidence from the interviews after the course regarding possible changes in the L2 teachers' CALL skills and knowledge for online teaching. In addition, pre-and post-course questionnaire data are analysed statistically regarding the teachers' CALL skills and knowledge. Data from the teachers' log files in the online community are

used as evidence of the teachers' participation in the online course. The study therefore adopts a variety of types and sources of data to increase the validity and reliability of the findings.

1.5 Research Questions

The aim of this exploratory study is to examine how in-service L2 teachers develop their CALL knowledge and skills for online teaching through formal training in an online community. The study uses a voluntary online teacher training and development course designed by this researcher as a means to observe the teachers' developmental processes. The online course is delivered in the virtual learning environment Moodle and includes an online tutor (this researcher) as a guide. The online course incorporated theoretical input on CALL, practical activities and individual and group reflection.

In order to guide this case study, the main research question investigated in this thesis is:

'How do L2 teachers develop their CALL attitudes, skills and knowledge for online teaching in an online training and development course for CALL?'

The sub-questions are:

1. *What attitudes towards CALL, pedagogical skills and knowledge of CALL and online teaching of languages do teachers bring to the course?*

This examines the teachers' attitudes towards CALL and CALL competence before the online teacher training and development course in order to compare and observe possible changes after the course. Data will be based on interviews and questionnaires.

2. *How does the teachers' understanding of CALL theory and practice for online teaching develop through social, cognitive and teaching presence in an online community of inquiry?*

This examines the teachers' choices and actions to develop their CALL skills and knowledge for online teaching in the online teacher training and development course. Data will be based on the teachers' textual data and records in the virtual learning environment where the online course takes place.

3. *What evidence is there of transformation in the teachers' attitudes towards CALL, knowledge and skills for CALL and online teaching of languages?*

This examines the possible changes in the teachers' attitudes towards CALL and knowledge and skills for CALL and online teaching after the online teacher training and development course. The data will be based on interviews and questionnaires.

The findings from this research seek to improve our understanding of second language teacher development in CALL in order to:

1. Understand the factors that influence the teachers' CALL skills and knowledge development through online training.
2. Support the design, implementation and evaluation of effective models of teacher training and development in CALL.
3. Support language teachers' continuous professional development in CALL.

1.6 Thesis Summary

The aim of this study is to observe how language teachers develop their technological and pedagogical CALL skills for teaching languages with online resources in an online teacher training and development course. In order to do so, an online teacher training course was designed, implemented and evaluated. The results will provide the basis of a set of guidelines for an effective future design and management of technology-mediated L2 teacher development courses for CALL.

What is the research gap?

Researchers have conducted studies on L2 teachers' attitudes towards technology and identified the skills they need to know in order to use technology effectively in both face-to-face and online environments. Nevertheless, little has been done to further explore the processes teachers go through when becoming technologically competent in teacher training courses. This study, therefore, focuses on the observation of the L2 teachers' processes as they enhance their knowledge and skills in an online training course for teaching languages online.

What is the argument of this thesis?

If we observe the process L2 teachers undergo when developing their technological and pedagogical CALL skills for online teaching, then it is possible to identify some of the factors/patterns that foster this process. This will help to identify and build up effective frameworks for designing teacher training courses and methodologies. The findings will influence the decision making processes of course designers in their attempts to provide teachers with support in tackling challenges of online teaching, and in helping them ensure the knowledge they gain can be maintained and increased over time.

1.7 Thesis Outline

Chapter 1: Introduction

In chapter 1 the aims and overview of the study is stated.

Chapter 2: Literature review

Chapter 2 aims to locate the study in the literature regarding second language teacher education and teacher development in CALL. The theoretical framework for the study is explained in further detail considering socio-constructivism, transformative learning theory, experiential learning, online learning and how these are related to teacher development in CALL.

Chapter 3: Methodology

In this chapter, methodological paradigms, choices and procedures for this research are discussed. Sampling techniques, participants' profiles, methods for data collection and analysis are explained in this chapter. The role of the researcher, validity and reliability, ethical considerations and pilot study are also presented.

Chapter 4: Results

In this chapter, evidence and results of the study are presented in order to answer the research questions.

Chapter 5: Discussion

In this chapter the results of the study are interpreted with reference to the existing literature in the field of L2 teacher development in CALL.

Chapter 6: Conclusion

This section presents an overview of the study and revisits the main ideas behind the research questions. A summary of the study and findings is provided, along with implications for theoretical and practice. Limitations of the research are discussed and recommendations for further research are proposed.

Chapter 2. Literature Review

The purpose of this literature review is to discuss and justify decisions regarding the topics surrounding the focus of this investigation, namely socio-constructivism, transformative learning, the community of inquiry model and L2 teachers' CALL skills and models. In sections 2.1 and 2.2 issues regarding general second language teacher training and development are explored. In section 2.3, socio-constructivism as a theoretical framework is described as well as the transformative learning theory (2.4). In section 2.5, the community of inquiry concept is elaborated on. Then, models in teacher education are examined in section 2.6. In section 2.7 CALL is defined and discussed in relation to teaching languages in the digital era and online learning and teaching. In section 2.8 the online community of inquiry concept is developed. In section 2.9, the attitudes of teachers towards CALL are discussed. The skills teachers need for online teaching are explained in section 2.10. In section 2.11, different models for teacher education in CALL are explained.

2.1 The Context of Second Language Teacher training and development

Due to the relevance English language has gradually acquired as a means of global communication and access to information, professionals in language teacher education have observed that 'there is consequently increasing demand worldwide for competent English teachers and for more effective approaches for their preparation and professional development' (Burns and Richards, 2009, p.1). In language teacher education, the fact that a language teacher possesses linguistic competence (disciplinary knowledge or *what* is taught) is not enough to assure quality of teaching, thus the inclusion of practice (pedagogical content knowledge or *how* to teach) is strongly recommended in the professional education of L2 teachers (Johnson, 2009).

Therefore, in order to meet the needs of language teachers to improve their teaching and align their teaching to policies in second language education, second language teacher training and development has undergone significant changes

over time. Currently, methodological approaches for teacher education have shifted from a more theoretical emphasis to a more social approach, in which the teacher is seen as an individual and as a member of a teaching community in professional training and development experiences (Freeman, 2009; Hollins, 2011).

2.2 Second language teacher education: The concepts of training and development

In order to understand the context of second language teacher education, it is important to clarify the concepts of language teacher ‘training’ and ‘development’. Richards (1989) presents an interesting critique of the differences between these two notions L2 teacher education at levels of approach, content, process, teacher roles and teacher educator roles. In table 1, a summary of the differences between training and development are offered:

Level	Training	Development
Approach	Teachers need to fulfill a teaching gap. They increase knowledge in an instrumental manner.	Teachers use their background knowledge to solve teaching issues
Content	It is organized and established by the teacher trainer	It is flexible according to the teachers' needs
Process	Knowledge based on models and activities that can be replicated.	Knowledge based on reflection and critical inquiry.
Teacher roles	Learner, recipient of knowledge	Participant, active and co-creator of knowledge
Teacher educator roles	Knowledge authority, expert.	Knowledge collaborator and moderator.

Table 1: Teacher training vs Development

In relation to this training/development dichotomy, Mann (2005) indicates that teacher development can be seen as an individual process which teachers are willing to go through in order to better understand their pedagogical decisions and practices. He argues that teacher development goes beyond training, as teachers constantly examine their behaviors, beliefs and actions introspectively as a means of making changes in their professional contexts. Moreover, he claims that teacher education programs *should* incorporate self-examination and questioning supported by collaboration that can lead to development. Mann's (2005) argument underlines the continuous nature of teacher development, as teachers need to be equipped with strategies that can help them to go beyond their training in teacher education courses. Therefore, his views leads us to consider the need for establishing opportunities to foster self-analysis and collaborative work in order to improve teachers' pedagogical knowledge, perceptions and techniques with the aim of helping them improve L2 teaching.

Teachers' cognition is another factor that L2 teacher development courses should take account of, which is strongly related to self-analysis, as part of the training process as a means to encourage professional development. Borg (2003, p.81) defines L2 teachers' cognition as 'the unobservable cognitive dimension of teaching - what teachers know, believe and think'. In general, when L2 teachers go through training, there is not much consideration to what they actually bring to the course and how this can be used for their benefit. Consequently, considering teachers' cognition, it may be possible to infer what L2 teachers know (1) how they develop their knowledge (2) how they engage with their learning and (3) how they engage with their practices (Borg, 2003). By consciously reasoning about their prior knowledge and the knowledge they acquire during training, L2 teachers are able to better reflect, thus leading to a more conscious transformational process.

Consequently, having knowledge of teachers' personal perspectives can help to meet their developmental needs and improve guiding procedures that might eventually foster skills enhancement. Dede et al (2009) suggest that teacher professional development initiatives should incorporate ongoing support in order to encourage teachers to increase their pedagogical knowledge and foster action research as strategies to improve teaching.

Richards (1989, 2008) also agrees with L2 teachers being exposed to developmental courses, rather than simply undergoing training, as the former has greater long term benefits. For example, L2 teachers would be equipped with strategies, such as reflection and collaboration, to help ensure development is an ongoing process, instead of a 'one off' experience. Nevertheless, he also points out that the developmental approach has its limitations, as it may be difficult to implement without the teachers' commitment to improve, and/or the educational institutions' support. This could be considered as a paradox, as on the one hand, L2 teachers are required to be competent and able to maintain and increase their teaching knowledge and skills. On the other hand, they may not have enough support from their educational institution and colleagues. In addition, L2 teachers might not even be willing to engage in developmental professional experiences, as some of them might prefer just the training, a more immediate and straightforward approach, when they need to improve their teaching techniques.

What can CALL researcher do to tackle these limitations as they can conflict with the new perspectives of language teacher education? Regarding language teaching effectiveness and teacher development approaches, one possible solution could be to use a combination of approaches so that L2 teachers are able to fulfill their more immediate need for knowledge, but also learn how to apply strategies to continue to develop professionally in the longer term.

2.3 Socio-constructivism: The synthesis between the individual and social learning

As suggested in the discussion above, language teacher education approaches are changing at a training and development level. They are moving from a theoretical perspective where L2 teachers improve their education only by themselves as individuals towards a more inclusive approach where teachers improve their skills by collaborating with others. In this scenario, teachers are no longer only developing their teaching in isolation, but as a part of a larger professional community. In this sense, learning theories that could help to inform professional development experiences play a significant role in second language teacher education.

Constructivism, for instance, is a theoretical paradigm that presents learning mainly as an *experiential* process (Swan, 2005), as opposed to a behaviouristic process which does not consider experience as a relevant factor for knowledge acquisition. Moon (2004, p.122) discusses a series of characteristics that define experiential learning as follows:

- Experiential learning is not usually mediated
- The material of learning is usually direct experience
- There is often a sense that it is a specially good form of learning
- Reflection is usually involved
- There is usually an 'active' phase of the learning
- There is usually some mechanism of feedback present
- There is usually an intention to learn

For this reason, constructivist perspectives have been used to support educational methodologies for learning (Swan, 2005), as they prioritize development through experience, cognitive activities and social interaction. For example, cognitive constructivism is based on the work of Piaget (1932) about child learning. In cognitive constructivism, learning is individual; a person constructs their own knowledge and develops skills based on their own experiences. On the other hand, socio-constructivist paradigms consider the learner, and learning processes, as part of a socially-moderated learning environment (Felix, 2005).

Within this constructivist spectrum, the socio-constructivist philosophy bases its principles in mainly *problem-solving* learning which can be seen from two divergent epistemological stances (Glassman, 2001): (1) Dewey's learner-centred perspective (1933) and (2) Vygotsky's sociocultural learning approach (1978). For Dewey, learning is built up based on the assumption that the learner is a thinking being who acquires knowledge by reflecting on experiences, personal motivation and making effective use of resources. Thus, knowledge is acquired in a series of developmental stages of content input, analysis and investigation which prioritize critical reflection that will result in a more educated individual. In Vygotsky's perspective, learning is socially constructed. It can be conceptualized in a 'zone of proximal development' where learning is mainly supported by peers, experts and a socio-cultural context, such as a classroom, for example. This 'scaffolding' (Vygotsky, 1978) process greatly relies on the input of collaborative learning activities to grow knowledge. Later, Leontiev (1981), based on Vygotsky's work, would present the notion of 'situated learning' which suggests that learners develop knowledge in a social context (e.g. with peers) by collaborating in *real-world* activities. To some extent, Dewey and Vygotsky agree that social interaction has an influence on learning experiences; however, Dewey's views tend to acknowledge individual cognition as part of the process as well.

Nowadays, the idea of combining cognitive and social constructivist perspectives for educational purposes, or at least, accepting them as 'not mutually exclusive', has arisen. Researchers in education are suggesting that both cognitive and social views should be considered for teaching (Mayer, 2008), as Packer and Goicoechea (2000, p. 227) explain 'these differences have sparked heated debates. Yet some have suggested that socio-cultural and constructivist approaches are not irreconcilable but complementary'. In language learning in particular, these ideas have also started to emerge in relation to both designing and conducting research about methodological approaches for SLA that could improve cognitive learning processes (e.g. comprehension, analysis, evaluation from Bloom's taxonomy, Bloom, 1956) by also paying attention to the social factors that support language acquisition, as shared interaction plays a significant role in L2 learning. In this sense, Swain (2013, p.195) addresses this issue by calling it 'the inseparability of cognition and emotion' and argues that approaches to both teaching and researching SLA should be designed to foster mutual interaction and individual learning.

In language teacher education these suggestions have been taken into consideration as well, as they highlight the importance of teachers' cognition but also the relevance of the social environment where professional development takes place. In her 2006 article Johnson (2006, p. 237) suggests that 'in order to understand human learning or higher cognitive development, one must look at the social activities that the individual engages in and see how they reappear as mental activities in the individual'. Therefore, if L2 teacher educators seek for more effective outcomes in language teacher development, it is necessary to consider the context in which they L2 teachers are enhancing their teaching skills *and* their individual background knowledge.

2.4 Transformative Learning Theory: A socio-constructivist approach for L2 teacher development

2.4.1 What is transformative learning?

In the context of constructivist approaches for adult education, the theory of Transformative Learning (henceforth, TL) provides an appropriate framework for observing, understanding and analysing the processes teachers undergo during professional development courses. This learning theory promotes critical thinking and allows the problematization of issues based upon existing views and actions, in order to make new ideas more meaningful to improve professional practices (Mezirow, 2000). Moon (2008) indicates that even though there is not a single definition of critical thinking, this is part of mental processes that allow individuals to create new knowledge. The author links this procedure to Bloom's taxonomy (1956), as she suggests that people need to analyse, comprehend, summarize and evaluate existing data to improve their learning.

The concept of 'transformation' in Mezirow's (2000, p.19) perspective 'refers to a movement through time of reformulating reified structures of meaning by reconstructing dominant narratives'. This theory emerges from the work of Dewey and his perspectives on socio-constructivist learning approaches. Also, TL is based upon the principles of psychological analysis of the individual's set of beliefs and how perspectives are modified in order to better understand and solve problems through a consciousness-raising process. This includes the exploration of referential structures, evaluation of behaviours and implementation of new assumptions in a collaborative learning environment (Dirkx, 1998; Mezirow and Taylor, 2009). In transformative learning, learning is delineated as a process which occurs through an analytical engagement of previous paradigms of knowledge where individuals retrieve and revise concepts. According to Mezirow (1990, p.1) this experience 'guides subsequent understanding, appreciation and action'. Transformation, then, the author explains (2000, p.19), takes place by either (1) elaborating on existing frames of reference (e.g. personal and/or shared assumptions, beliefs, values) (2) learning new frames of reference (3) transforming points of views or (4) transforming tendencies or what he calls 'habits of mind'.

2.4.2 Stages and conditions for Transformation

Critical thinking allows teachers to explore their own attitudes, beliefs and procedures in order to reconstruct perspectives and approaches which can trigger transformation. However, this is a complex process which includes taking risks, not only when developing learning (i.e. dialogues which can lead to debates with peers) but afterwards when new skills and knowledge have been established (e.g. applied in the workplace). According to Taylor (2008, p.8) there are 3 teaching approaches which can foster TL (1) Critical reflection approach to raise awareness to transform society and our own reality (2) dialogical approach (i.e. discussion of a problem) and (3) egalitarian approach (i.e. where students and teachers work together as peers at the same level). The question then arises as to how we can investigate/observe the process of transformation. Mezirow (2000, p.22) proposes the following 10 stages that can promote transformation in learning contexts.

1. A disorienting dilemma
2. Self-examination with feelings of guilt or shame
3. Critical reflection on assumptions
4. Recognized discontent and the process of examination shared
5. Explorations of options for new roles, relationships and actions
6. Planning of course of action
7. Acquiring knowledge/skills for implementing one's plan
8. Provisional trying of new roles
9. Building competence and self-confidence in new roles and relationships
10. A reintegration into one's life on the basis of conditions dictated by one's perspective.

For example, King (2002) observed the process of transformation of pre-service and in-service school teachers (n=175) who took a course on how to use educational technology for 36 months. Here, King highlights that technology can be an issue for teachers (i.e. this is 'the dilemma'), thus, they need to learn how to deal with its challenges in order to implement effective technology-mediated activities with their students. During the course, the teachers were able to talk about technology, reflect on their teaching and share their views about applying technology in educational contexts with their colleagues. Additionally, they used technology as part of their training (e.g. online conferencing) and produced their own activities in order to experience technological resources themselves. This experiential training approach promoted their transformative process (considering Mezirow's criteria discussed above) of analysing their assumptions and being able to explore their roles when using technology in their classrooms in order to become technologically competent educators.

In order to observe the teachers' transformation, King collected qualitative data from interviews and journals and quantitative data from a survey she produced and carried out (i.e. 'the learning activities survey'). She used thematic analysis to analyse the qualitative data as a mean to compare the themes she identified with the survey's responses (i.e. observable frequencies). The findings showed that the teachers transformed their views on technology regarding their roles and the current educational reality of teaching with technological resources. The results indicated that the teachers also became more confident not only about producing activities and discussing the use of technology for teaching but also about modifying their teaching style. Therefore, King's study supports the claim that teacher trainers and course developers should focus on approaches that promote critical reflection and long term transformational behaviours, so they are sustainable and have a real impact on teaching environments.

2.4.3 Reflection for transformative learning and practices

Transformative learning has been recurrently used in adult education and lifelong learning programs (Lawler and King, 2003; Heuer and King, 2008) and is seen as a helpful way to guide language teachers in their analysis of actions and professional growth. TL uses reflection in the field of teacher development as a vehicle to promote understanding of teaching principles, strategies and knowledge in order to be more predisposed to skills development and make conscious decisions about teaching practices. According to Finlay (2008, p.1) reflective practice in teacher education can be described as ‘the process of learning through and from experience towards gaining new insights or self and or practice’. She also points out that reflection can be conducted individually or with the support of others and that *critical* reflection is seen as a deep and empowering process of thinking in order to change and enhance one’s perspectives.

The incorporation of critical reflection into the curriculum of language teacher education (i.e. usually referred to as ‘reflective practice’) has been suggested and investigated on numerous occasions (Wallace, 1991; Griffiths, 2000; Jay and Johnson, 2002; Akbari, 2007) in different contexts (e.g. pre-service/in-service teachers) as the concept of ‘reflective teacher’ has gained an important place in teaching and developmental courses. This concurs with Mezirow’s (2000) proposal, as TL promotes critical thinking through the careful examination of one’s own professional perspectives and exploration of others’ actions in order to be predisposed to the acquisition of educational strategies to develop new skills (Cranton and King, 2003). Thus, teacher educators should foster transformative learning practices that lead towards development by setting contexts that allow teachers to explore and exchange their teaching views considering their background (or ‘learning past’ according to Kegan, 2000, p.58), internal constructs about language teaching and intrinsic motivation in order to build up professional knowledge (Hughes, 2005).

Nevertheless, one of the limitations in TL might be the act of critical reflection itself. As mentioned previously, critical reflection plays an essential role in TL, however, it is important to consider that not all individuals reflect in the same way. These differences should be taken into account by course designers or trainers who decide to use transformative learning (Cranton, 2000; Moon, 2004). In this sense, it is important to know the students' (or teachers' in the case of teacher education) background in order to provide them with the advantageous tools to reflect.

For instance, in her case study, Cranton (2000) analyses the case of one of her learners who even though he experienced transformation of views, claimed that he did not use 'reflection' per se as to the means of achieving it. Puzzled by this statement, Cranton decided to ask the learner questions about how he transformed his perspectives. She also asked him about his views of transformation in order to confirm if they understood it in a similar way. The results suggested that the learner just changed his views and his transformational process could not be associated to an analytical process but mainly as a 'result of an experience' (Cranton, 2009, p.181). This poses the question of how people learn and change depending on their individual and shared beliefs and views. Thus, is it possible to validate this student's transformative process then if he claims that no conscious, explicit reflection took place during the process? Perhaps, it may not be matter of how reflective someone is, but what can be done to link reflection with experiences which may increase knowledge. It is also a matter of what *kind* of reflection (i.e. individual, group, guided, non-guided, experiential, and theoretical) serve purpose better. Also, in some cases, individuals can struggle with the fact of being reflective 'thinkers' but not reflective 'writers'. As in the case of Cranton's study, the student did not keep tangible record of reflection, but was able to change his perspective according to his experience.

In terms of how reflection can be stimulated, Moon (2004) states that there are different tools and strategies for reflection, depending on the purpose of the reflective/learning situation. She mentions journals, projects, group dialogue, action research, prior experience learning, personal development planning, peer and self-

assessment and problem based learning, as means to integrate reflection into learning. In this context, technological tools can be used to encourage reflection. For instance, Wopereis, Sloep and Poortman (2010) evaluated the use of blogs on a teacher training course and concluded that although these are extremely valuable tools to promote reflection, this process should be guided. Yang (2009) presents a similar conclusion in a study about how to incorporate blogs and reflective practice in a pre-service teachers programme. Hernandez-Ramos (2004) also agrees on the benefits of using blogs in teacher professional development as a private space for reflective practice.

In terms of group reflection, Noffke and Brennan (2005) discuss the role of social discussion and its relevance for reflection based on the fact that collaborative reflection allows teachers to be part of a group which shares similar characteristics and concerns about the complexities of teaching. This way, educators can immerse themselves in a dialogic analysis which, at the same time, would involve them in exploring their own teaching contexts and purposes as a means of improvement (McCabe et al, 2009; Mann and Walsh 2013). In her 2006 study, Gravett explores the developmental stages of higher education teachers in a transformational training experience and reports that the participants strongly valued 'collaborative enquiry' (Gravet, 2006, p.270) as a resource for critical development.

In this regard, Walsh (2013) presents an interesting discussion about *individual vs dialogic* reflection. His claims are related to how language educators can benefit from reflection and how this process should be more collaborative rather than individual, which is how it has usually been done. Also, he proposes to develop instruments for reflection which allow teachers to analyse their practices in order to become more critical of their work and ultimately do action research in their own classes. The most important claim from Walsh's argument is this analysis of personal and group reflection and his proposals to improve and, more importantly, systematize reflection.

2.5 Community of Inquiry (CoI)

2.5.1 What is a community of inquiry?

In the discussion above, notions such as reflection, critical thinking and collaboration have been explored in order to link them to transformative learning and developmental approaches in second language teacher education. In this sense, Lipman (1991) states that in a community of inquiry it is possible to combine individual learning in order to cooperate and learn from others. In this sense, learning is not only a personal experience, but rather an experiential process based on one and others' contributions. Also, Lipman differentiates communities of inquiry from other kinds of scholarly groups by saying that in the former there should be questioning of truth; reality and the recognition of challenges in certain learning situations the members are involved in. He points out that usually a CoI should include features such as interaction, cognition and shared search for meaning.

This concept of community of inquiry is based on Dewey's (1916, 1933) critical thinking views on learning as individuals and as members of a community. Farr Darling (2001, p. 9) explains that 'in a genuine community people communicate their goals, revise them together, and work collectively to achieve them. They continually engage with each other in a critical process of personal and social reconstruction'. She also mentions the fact that in a community of inquiry (a classroom, for example) 'true beliefs' should be acquired. This resonates with the philosophical perspective of transformative learning discussed above, where people challenge their views and search for the 'truth' to solve their professional or academic dilemmas.

Communities of inquiry can also be compared to the notion of 'communities of practice' suggested by Lave and Wenger (1991) and their ideas of situated learning or learning 'in context'. Mainly, for Lave and Wenger (1991), learning is not abstract, the participants of a community are considered active practitioners and there is a strong social bonding among the members of the community which supports learning. These characteristics are associated with Vygotsky's (1978)

views on sociocultural learning. At first glance, these two 'communities' share the basic principle of collaboration for a common learning goal. However, in the community of inquiry, the philosophical factors of inquiry-based learning, critical examination and reflection about an issue (or dilemma, in transformative learning) are emphasized in order to achieve both individual and social transformation of views (Lipman, 1991).

Learning in a community of inquiry can be highly beneficial but also challenging. In general, the limitations of communities of inquiry have to do mainly with two issues (1) identifying if the community is acting as a community of inquiry (and not a group without a learning purpose) and (2) maintaining the community of inquiry (Sharp, 1987; Farr Darling, 2001). Firstly, people might not be able to understand that in order to develop skills they need to achieve deep levels of critical thinking to select and evaluate experiential information that can foster learning. Also, the members of the community of inquiry should be able to share such information effectively with their peers so learning is meaningful. Sharp (1987, p.42) explains that people belong to a community of inquiry when they are part of a 'community of persons-in-relation, speakers and hearers who communicate with each other impartially and consistently.' As this is no easy task, educational experiences in general, not only for professional development purposes, should provide people with the opportunity to self-analyse, negotiate views and elaborate on new inquiries as a means to promote knowledge. Secondly, maintaining communities of inquiry can be problematic in the sense that people might not be fully prepared to self-examine their views, let alone critically engage in a discussion with others. This may cause lack of motivation or even fear to actively participate in the dialogue (Far Darling, 2001). Therefore, creating a safe environment and fostering mutual support is crucial to sustaining the community. For example, in online communities of inquiry (later in this chapter) there is a strong emphasis on creating a welcoming learning atmosphere, or 'social presence', in order to somehow tackle challenges of participation. The role of teachers, thus, is relevant to build up the community of inquiry so that, in time, the community is cohesive enough to be maintained mainly by its members.

2.6 Models for L2 teacher training and development

General L2 teacher education perspectives suggest that as a means to become 'transformative intellectuals' (Johnson, 2006, p.248), teachers should work towards making useful meaning of the received input in teacher training courses by applying critical reflection and be aware not only of their teaching background and resources, but also their colleagues and teaching context. As L2 teacher development evolves, it is necessary to find appropriate theoretical and methodological approaches that can foster teachers' awareness of the available options they can use to teach languages more efficiently and encourage useful and continuous professional development.

2.6.1 Loop input (Woodward, 1991)

This L2 teacher training approach is a way of presenting teachers with teaching techniques drawing on experiential learning. Woodward (1991) proposed this as the 'loop input' model, as it combines the content of the training with its process. Basically, what she suggests is that L2 teacher training should be conducted in a 'loop' manner where teachers learn about something by actually doing it. For instance, she explains that if teachers want to learn how to apply a listening exercise with their students, they should be trained using the same or a similar activity. Therefore, loop input is a way to manage L2 teacher training resources so the content of the training is linked to the way it is learned.

When discussing the loop input model Woodward (1991) agrees with the training and development dimensions in teacher education and suggests that the loop input model is flexible and can be adapted in L2 teacher professional development courses. For example, she states that loop input is a 'way of eliciting and transmitting ideas' (Woodward, 1991, p.159) and therefore can be used from course organization level to a session or part of a session level. It will all depend on the teachers' needs and how the trainer decides to meet those needs in the course. In addition, the author explains that the loop input model can be adjusted to a level of 'training' or 'development' only, thus it is possible to use the model in an instrumental or developmental manner according to the course's goals.

Woodward (1991) states that in order to evaluate the model in a course it is necessary to (1) assess if the teachers have achieved the goals of the course and (2) take into account the teachers' feedback on the course. The former is linked to the teachers' skills improvement during the course and the latter with what they have to say about how they improved those skills in the course. Both aspects are crucial to improve L2 teacher education courses. Also, she explains that the evaluation can be done by the trainer himself (acting as a researcher), the teachers, a supervisor or even an external evaluator, but that the assessment should always have a focus (e.g. methodology of the course) and be for the benefit of the teachers.

For this reason, the evaluation should have a clear purpose and could be done at the beginning, in the middle, or/and the end of the course. The assessment tools used in the evaluation of a course vary depending on the objective. For instance; oral and written tests can be applied to assess knowledge whilst diaries, videos or reports can be used to observe behaviours. Interviews, surveys and questionnaires are also useful resources to evaluate a course, mainly from the teachers' perspective (Woodward, 1991). However, a challenge that may arise when conducting course assessment is that, unfortunately, the teachers' suggestions cannot always be implemented when they want to try the ideas out with learners. This might be due to, for example, factors such as budget and support from the educational institution. Perhaps, this may be why issues regarding the sustainable implementation of L2 teacher education methodologies have been difficult to tackle over the years. This brings us back to the paradox about the demand for having competent L2 teachers without providing the proper resources to support them.

2.6.2 A reflective approach: Observation, theory, practice and reflection (Wallace, 1991)

Another L2 teacher education approach which can be compared to and complement Woodward's (1991) loop input is the reflective model proposed by Wallace (1991), and revisited by Freeman (2009). This model postulates the idea of incorporating reflection in the process of learning language teaching theories in

order to raise consciousness in teachers about their own practices and procedures in the language classroom. In comparison to loop input (Woodward, 1991) which can be adapted to the teacher education experience, we could say that Wallace's (1991) reflective model can be categorized as a mainly developmental teaching approach.

As discussed previously, reflection is certainly an important part of second language teaching education as it fosters teachers' cognition and their individual perception regarding their teaching practices. However, reflection comes over time and teachers need to be taught how to become reflective practitioners so they can see its usefulness. Thus, reflective models for teacher development such as the seminal 'reflective cycle' by Dewey (1933), and the 'reflection on action' (i.e. analysis of theoretical notions) and 'reflection in action' (i.e. examination of personal experiences) proposed by Schön (1983), show that the analysis of practices inside and outside the classroom can be beneficial for educators and their learners. This can help to identify strengths and weaknesses which can eventually lead to improvements through, for example, action research or exploratory practice (Allwright, 2003). Wallace's (1991) framework shows how L2 teacher education can be fostered by scaffolding the teachers through different developmental stages:

Firstly, he states that prior (i.e. background information) and existing (i.e. current teaching context data) knowledge should be reflected on in the pre-training phase. This is consistent with the theory of transformative learning in terms of the analysis of teachers' own views regarding a 'dilemma'. This process will lead to the identification of problematic teaching-related situations which can be solved through the teacher development course.

The second stage of the 'reflective cycle' has to do with the process of the course itself. Wallace (1991, p.48) explains that once teachers are clear about what they are going to learn, they should reflect on the theoretical input they are provided with (i.e. 'received knowledge') and also on their practical experiences (i.e. 'experiential knowledge'). The last stage of the reflective model has to do with

teachers finally gaining the professional knowledge that will increase their expertise in a specific area. In terms of evaluation, Wallace (1991, p.126) agrees with Woodward (1991) and points out the importance of the evaluation as a diagnostic, formative, summative and integrating process. He also suggests tests, classroom observation and reports as means of assessment.

The limitations in this kind of developmental approach may be the actual developmental process beyond the measurable contents in a test, for example. How do we know if the teachers are actually equipped with skills to make the developmental experience an ongoing process? What should L2 teachers do, therefore, when reflecting so that the developmental process continues? The literature regarding reflection suggests that reflective educators should analyse their knowledge of their teaching, responsibilities in their teaching contexts, decisions about their lesson planning, actions in their classrooms and implications for their teaching context. In addition, teachers should possess, or be able to develop, intrinsic motivation to incorporate reflection into their teaching into their practices in order to be more pedagogically efficient and continue their professional growth (Dewey, 1933; Pollard, 2002; Burton, 2009, McCabe et al, 2009).

2.7 Computer Assisted Language Learning (CALL)

One important question in language teaching and, certainly, in L2 teacher training and development programs nowadays is how technological tools can be used in the L2 classroom. Therefore, the issue of how language teachers can be supported to develop skills and knowledge to apply technology with L2 students becomes a priority.

2.7.1 CALL Definitions

Levy (1997) defines CALL as the use of computers for language teaching and learning. Hubbard (2014) conceptualizes CALL as a term used to describe the meaningful integration of technological devices and resources for language teaching and learning. Also, he proposes a flexible methodological framework for CALL (Hubbard, 1996) based on Richards and Rogers's (1986) communicative approaches for second language learning. Hubbard's (1996) CALL model consists

of a set of principles which guides L2 teachers to adapt, design, implement and evaluate technological resources and materials considering the learners' profile and needs. Chapelle (2010) agrees with Hubbard's definition of CALL but presents a rather broad interpretation. She relates CALL to the general use of information and communication technologies (ICTs) and Computer Mediated Communication (CMC), the latter defined as human communication that takes place through technological resources for language instruction (Murray, 2000). CMC can be synchronous by using 'real time' technological resources such as chat, or asynchronous. In the latter case, it is not necessary that communication happens at one specific time.

For the purpose of this research, Hubbard's and Chapelle's CALL definition will be used, as it encompasses a wide interpretation of technological resources, including CMC (e.g. online forums, blogs), mobile resources (i.e. tablets, Mp3 players, phones) and social networks (e.g. Facebook, Twitter). CALL can be used as a combination of different digital resources, so it is not necessarily limited to the use of the computer exclusively (Kern, 2006). Also, the term CALL and technology for language teaching and learning will be used interchangeably.

2.7.2 Teaching languages in the digital era: The concepts of 'Digital natives' and 'Digital immigrants'

In general, one of the reasons why the incorporation of technology into the language class has been challenging for L2 teachers is because they usually feel they do not have the proper competence or preparation to apply technology effectively in their teaching. As technology develops, dealing with it becomes more difficult for L2 teachers. Usually, L2 in-service teachers (or any teacher) who belong to a generation where technology was not as widely available as it is today are referred to as 'digital-immigrants' (Palfrey and Gasser, 2008). These L2 teachers have had to adapt to technology and been required to include it in their teaching. In addition, according to Prensky (2001), there has been a major change in today's students' profile. These learners are often referred to as 'digital-natives' (Prensky, 2001; Palfrey and Gasser, 2008), as their lives have revolved around

digital media since they were born. In addition, he points out the ability of digital natives to 'multi-task' with technological resources and how they learn, and prefer to learn, as a result of the constant technological digital stimulus they receive. In this sense, Kukulska-Hulme (2008) suggests that mobile learning, for instance, has challenged traditional ways languages can be taught. With mobile learning, language learning can be removed from the classroom limits and taken into an informal context (e.g. apps) or be more accessible (e.g. mobile phones) for language learners. Therefore, language teachers have had to reconsider their teaching practices as technology evolves.

On the other hand, Bennett, Maton and Kervin (2008) present a rather skeptical point of view in regards to the existent empirical evidence related to digital natives in education. The authors discussed the reality of the native/immigrant dichotomy in their critique about the different claims about digital natives. They state that there is a collective concern in terms of an educational policy change based on this student profile and that the assumptions on this matter are debatable. They point out that although there is a large amount of learners who have easy access to technology, there is also a considerable amount that do not. Also, they underline the idea of digital literacy stating that not because learners are exposed to technological resources on a daily basis they would know how to use and evaluate them for their learning. White and LeCornu (2011) also challenge Prensky's (2001) digital native/immigrant distinction. The authors propose the alternative terms of digital 'residents' and 'visitors', where the former refers to someone who is dexterous and revolves around online environments whereas the latter is attributed to someone who uses the virtual temporarily at their convenience. In language teaching education, this conceptualization might help us to explain the motivation or reluctance that L2 teachers feel toward using technology for English teaching purposes.

The implications of this reality are complex, as sometimes L2 teachers might be hesitant to modify their teaching (e.g. teaching style) and use technology with L2 learners. Also, it is possible to find L2 teachers who although born in a digital era

and more familiar with technological advances, do not have a clear understanding of how to apply them effectively in their teaching. This is why L2 teacher training and development have become a focus of research in CALL. It is crucial to have CALL competent L2 teachers, as the students' learning experience could be significantly improved if teachers possessed proper skills to facilitate it (Zimmerman and Treckles-Milligan, 2007; Palfrey and Gasser, 2008).

2.7.3 Online learning and teaching

L2 teachers nowadays are required to include technology to some degree in their language classrooms whether by including it as part of their face-to-face lessons or conducting L2 courses fully online. In addition, technology has been used to implement technology-mediated L2 teacher training and development courses as a means to educate and familiarize L2 teachers with CALL.

2.7.3.1 What is online learning?

Salmon (2011, p.12) defines online learning as 'unlike social networking of all kinds, casual browsing or playing games on the web, a key distinction between online education and training is that they are highly purposeful and have planned goals, outcomes and directions'.

In addition, online learning can be combined with face-to-face lessons. This is called blended learning, which according to Hinkelman and Gruba (2012, p.46), can be defined as 'the combination of online and offline techniques in classroom teaching'.

2.7.3.2 What is an online community?

Online learning communities consist of people with common academic goals who learn and exchange information collaboratively through CMC tools (Shea, 2006).

2.7.3.3 Platforms for online learning and teaching: Virtual Learning Environments

In formal education, online learning and teaching usually takes place in virtual learning environments (VLEs). These are online systems to manage and/or conduct online learning courses which can be customized according to the users' needs (e.g. higher education students). It is important to state that online learning could also occur informally via social networking environments, such as Facebook, for example.

For the purpose of this investigation, the term VLE will be used to refer to formal online learning and teaching. These VLEs allow users to administer and deliver customized instruction by gathering online resources and uploading them into the platform for easier access. VLEs such as Moodle and Blackboard function in similar ways (Brandl, 2005; Godwin-Jones, 2011), as they provide tools for assessment, tracking learners' performance and setting up online communities for social interaction. They are useful for learning and teaching online, however, they can pose challenges for both online teachers and learners due to the differences from face-to-face instruction such as teacher immediacy (Goldwin-Jones, 2012).

2.7.3.4 Moodle

Godwin-Jones (2012) indicates that Moodle (www.moodle.org) was created based upon the socio-constructivist learning paradigm and that its resources can be used to meet the learners' profile and needs. This open access platform has been commonly used a means to carry out online learning courses in a variety of teaching contexts (Barrs, 2012; Diez-Bedmar and Perez-Paredes, 2012; Stickler, 2011). Moodle contains features such as forums, wikis, blogs and databases which can be useful to improve the quality of online learning, foster independent learning and enhance active collaborative learning beyond the classroom.

2.7.3.5 Resources for online teaching and learning

Strambi and Bouvet (2003) highlight the importance of considering material authenticity and access when designing courses in virtual learning environments in order to meet the students' needs and promote interaction in online communities. Besides the textual resources (e.g. word documents, Pdf files, power point presentations) and audio materials (e.g. Mp3 files, podcasts) that can be integrated in online learning, Youtube (www.youtube.com), for instance, is an internet resource which provides suitable visual materials for language teaching (e.g. authentic communication situations) and teacher education (e.g. lectures, tutorials). Youtube is also an accessible online space to make original creations by teachers (and students) available to large audiences (Terantino, 2011).

2.7.3.6 Videos in teacher education

In teacher professional development, Khine and Lourdasamy (2003) used video recordings of real lessons for a teacher training course in Singapore. These video clips were included in an online community where the trainees (n=25) using a computer programme, called 'Conversant Media', were able to include annotations in the footage and discuss the teaching episode together. The objective of the study was to engage the teacher trainees in online collaborative reflection about an authentic teaching situation and critically link teaching theories put into actual practice. Also, the authors sought for the participants' opinions on using this piece of software for teacher professional development purposes. The study lasted 3 weeks during which 3 different video clips were used. The teacher trainees worked in groups and engaged in activities where they had to analyse the situations in the videos collaboratively in the online community. Data was collected considering the number of comments made by the participants. The quality of the comments was also rated by the trainees and the instructor. The participants were also surveyed in order to obtain their perceptions about Conversant Media for their teacher training.

Findings show that the trainees thought the use of videos and their analysis through Conversant Media was beneficial for self-assessment and critical thinking skills. These results show how helpful videos can be for teacher development, particularly, in times where technological advances predominate and are, usually, of easy access.

In language teacher education in CALL, Woodward, Griffiths and Solly (2013) discuss videos as one of the technological resources used in a training course with primary and secondary school English teachers in Bangladesh. The 'English in Action' programme was implemented by the government of Bangladesh in partnership with the UK as a response to meet the technological and pedagogical needs of Bangladeshi language teachers. The course fostered reflective continuing professional development and the resources (audio, video, lesson plans, and ideas for activities) were delivered via mobile technology (low-cost mobile phones). The videos used in the course were clips from authentic language lessons recorded by different teachers in Bangladesh. The recorded classes were based on the textbook provided by the Bangladesh government and which all the teachers were familiar with. As a means to personalize the videos, the voice of a narrator was included. This tutor acted as the expert and course guide. The course also had opportunities for collaborative reflection as the teachers were able to have face-to-face meetings directed by a teacher facilitator.

The findings of this course indicate that the teachers improved their teaching practices and that their classes are more motivating to students. Also, some of the teachers' colleagues who were not involved in the project were able to notice positive changes in their peers. The course was useful for the teachers, nevertheless, the researchers point out some limitations. These have mainly to do with the teachers' skills to use the mobile phones for professional development purposes, a more guided use of the videos, certain flexibility on the course curriculum (as it was based upon the government textbook) and support from educational institutions within the country.

2.7.3.7 Roles of teachers in online learning and teaching

According to Salmon (2011, p.107-108), there are features regarding the (1) knowledge of the online learning process (2) technical skills (3) online communication skills (4) content proficiency and (5) personal characteristics that a competent online tutor, or teacher, should possess. Also, they should be able to enable the development stages of online learning (later in this chapter) so it is beneficial for the students. Table 2 below shows a list of roles that online tutors play in online teaching.

(Goodyear, Salmon et al. 2001)	(Hockly, 2010)
Online tutors facilitate the learning process	Online tutors have a personal learning network (PLN)
Online tutors are advisors/counsellors	Online tutors foster communication
Online tutors are assessors	Online tutors develop presence
Online tutors are researchers	Online tutors develop discussion
Online tutors are content facilitators	Online tutors foster scaffolding
Online tutors are technologists	Online tutors develop empathy
Online tutors are course designers	Online tutors develop sensitivity
Online tutors are managers/administrators of the online community	Online tutors develop socializing
	Online tutors respect the stages of the learning cycle in online courses (start, maintenance and end)

Table 2: Online Tutors' roles

For example, Garrison and Cleveland-Innes (2005) stress the importance of the online tutor in order to guide the online community by promoting communication and critical reflection. They suggest that 'sustained teaching presence that encourages participation, but is not teacher centred is crucial' (p.145). They also point out that this can be problematic in terms of the online tutor's availability and interaction in online communities of inquiry.

In relation to this, teaching in asynchronous virtual learning environments was examined in Gilbert and Dabbagh (2005). The authors present a case study whose aim was to explore the online tutor's guidelines, assessment sheets and online posting protocols (e.g. posts should include references to literature, students should be post a minimum of comments) in order to help online tutors to promote what they call 'meaningful discourse' in online discussions. After analysing the content of the students' posts and coding them in themes, the authors found out that providing clear information about the course and the ways this was going to be evaluated was highly positive for the learners. On the other hand, imposing posting criteria had a negative impact on the students' participation on the course. Therefore, maintaining a balanced involvement in online communities can be quite challenging for online tutors.

2.8 Perspectives on Second language (L2) Teacher education for online teaching and learning: A socio-constructivist approach

L2 teacher education perspectives are moving towards socio-constructivist approaches which encourage critical reflection and co-construction of knowledge. This means that L2 teachers should develop their knowledge by self-examining their beliefs and experiences and sharing them in a social environment.

2.8.1 Community of Inquiry (Col) framework for online learning and teaching

The 'community of inquiry' approach has been used in different educational contexts as a means to foster students' critical thinking and learning. For online learning, Garrison, Anderson and Archer (2000) developed a community of inquiry (Col) framework based upon Dewey's work (1916, 1933, 1959), which combines the concepts of individual inquiry for problem solving and collaborative learning. The Col model for online learning presents a framework which integrates cognitive social and teaching presence (figure 1). Cognitive presence is triggered when analytical reflection takes place in order to gain understanding of information that can later be integrated as new or reinforced knowledge. In social presence, online community unification should be promoted as a means to foster scaffolding during the online learning experience, and teaching presence has to do with the design of

an online course. At this level, the contents, goals, tasks and instructions should be clearly defined and organized.

Regarding L2 teacher education, online communities have been included in blended and online training programmes as a means to educate L2 teachers (Pawan et al, 2003). The CoI model for online learning is based upon theories that encourage a socio-constructivist learning approach, thus, it becomes appropriate to (1) foster individual and collaborative critical reflection for learning and (2) analyse how the online learning process takes place considering cognitive, social and teaching presence.



Figure 1: Community of Inquiry Model. Source: Garrison, Anderson and Archer, 2000, p. 88

2.8.1.1 Cognitive Presence

This dimension of the CoI framework is defined by Garrison (2007, p.65) as 'the exploration, construction, resolution and confirmation of understanding through collaboration and reflection in a community of inquiry'. Cognitive presence is related to the way the students develop learning, interact with, and integrate, knowledge. Therefore, their ability to notice and reflect on content becomes necessary as a trigger for comprehension, questioning and application of new information. It is at this level that critical reflection takes place. In order to identify if cognitive presence is taking place online courses, Garrison, Anderson and Archer

(2000) suggest four stages (see figure 2) that online learners should pass through in order to develop knowledge:

- Triggering event: These are the dilemmas and/or questions that online learners may have about the topic (s) of discussion in the online course (e.g. How can teachers improve online learning?).
- Exploration: As online learners identify a dilemma or questions to discuss, they should use and share with others their personal experiences and knowledge in order to co-construct knowledge.
- Integration: At this stage online learners should integrate personal experiences and knowledge with the contents and materials provided in the online course. Here, online learners should show signs of reflection and incorporation of new knowledge (e.g. references to theory, or academic references).
- Resolution: In this last stage of the cognitive presence cycle, online learners should provide solutions, plans or new ideas in order to suggest changes or strategies to deal more effectively with challenges posed in the initial triggering events, and those arisen during the online learning process.

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Table 5.1 Practical Inquiry Descriptors and Indicators

<i>Phase</i>	<i>Descriptor</i>	<i>Indicator</i>
Triggering event	Evocative (inductive)	Recognize problem Puzzlement
Exploration	Inquisitive (divergent)	Divergence Information exchange Suggestions Brainstorming Intuitive leaps
Integration	Tentative (convergent)	Convergence Synthesis Solutions
Resolution	Committed (deductive)	Apply Test Defend

Figure 2: Cognitive presence descriptors and indicators. Source: Garrison, 2011, p. 52

2.8.1.2 Teaching Presence

Teaching presence has to do with the design (i.e. structure of course and how contents will be transmitted) and syllabus (i.e. the content of the course) of online courses in relation to (1) a well organised design of activities and procedures (2) facilitation of collaboration and reflection for effective learning and (3) proper guidance and communication to meet the needs of the online community (Garrison, Anderson and Archer, 2010). Therefore, if the 'course backbone' is clear, the likelihood of having positive outcomes increases considerably. In several studies about Col (Arbaugh et al, 2008; Garrison, Cleveland-Innes and Shing Fung, 2010) teaching presence is suggested as a crucial factor for course effectiveness and satisfaction, so it should be properly incorporated into online communities of inquiry. Online learners have to know that they can easily access the course information at any time if they need to. Also, they have to be aware of how and why they are going to perform certain tasks or interact with different types of materials.

Creating teaching presence can be time consuming and demanding as it requires online tutors to display pedagogical, technological and personal skills at their best. However, if done properly the students can acquire the cognitive and social presence necessary for a reflective and collaborative learning process. In this sense, Salmon's (2011) criteria for online learning and teaching (she refers to it as 'e-moderating') have been suggested as a way to guide online tutors to support students in online courses. These criteria propose 5 stages that online tutors should consider when delivering an online course to increase teaching presence. Salmon's work has been extensively used in different disciplines (e.g. business, education); nevertheless, its flexibility allows adaptation for other contexts such as online L2 teacher education in CALL (see Motteram, 2006).

Salmon's (2011) criteria are summarized as follows (table 3):

Stage	Description
1. Access and motivation	Online tutor should provide learners with a structured organization of the course.
2. Online socialization	The online tutor should encourage interaction among the participants and develop the sense of community.
3. Information exchange	The online learners become more independent and aware of the information available. The tutor should foster opportunities for them to express and share useful information.
4. Knowledge construction	Interaction and feedback among the members of the community should take place at this stage.
5. Development	The members of the online community should reflect and integrate learning by dialogue to co-construct knowledge.

Table 3: 5-stage online moderation model (Salmon, 2011)

The stages delimit students' online processes, assist learning and promote construction of knowledge. Salmon (2011, p. 31) indicates that there are different kinds of interactions during online learning that should be paid careful attention to:

1. Interaction with the content
2. Interaction between the tutor and the student
3. Interaction between groups of peers

The first type refers to how the learners relate and use the materials presented in the course and the influence it has for their learning process. For the second type of interaction, Salmon (2011) explains that the student-tutor relationship is crucial to reinforcing learning, creating and encouraging participation in online communities. Therefore, channels of communication should be open and clear

(e.g. online office hours) to overcome the sensation of isolation that sometimes online learning might generate. The third type of interaction can be directly related to the learning dynamic learners have as a community of inquiry in terms of scaffolding. If learners are comfortable enough with how they are learning in the online course, they are more likely to be effective members of the course by contributing and collaborating with peers online to improve learning and skills.

2.8.1.3 Social Presence

Social interaction plays an important role in setting up and maintaining online learning communities, in asynchronous CMC in particular. Garrison, Anderson and Archer (2000) develop the concept of social presence around the interactions that will promote a unified online community. According to Garrison, Anderson and Archer (2000, p.89) social presence is defined as ‘the ability of participants in the community of inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people’. Therefore, it is important to implement strategies and provide activities that will help to develop that ‘sense of community’. This means the feeling of being part and comfortable of a group in a pedagogical context that online groups should create. In social presence, Garrison, Anderson and Archer (2000) distinguish three categories:

- **Affective expression:** Online learners should feel comfortable about conveying emotions in the online community as a means to bond with the other learners and have a meaningful online learning experience.
- **Open communication:** Online learners should be able to freely express their opinions and thoughts in the online community. This helps to encourage the co-construction of knowledge.
- **Group cohesion:** Online learners should be encouraged to consider the online community as a unified group for purposeful learning. The sense of collaboration is essential to maintain a cohesive community of inquiry.

Kerhwald (2008) investigated the importance of social presence in a case study which measured learner experience in online environments. The participants were students from postgraduate online courses offered by a university in Australia. Data was gathered via the virtual learning environment of the university. The data collection methods included questionnaires, individual online interviews via chat, and asynchronous group discussions. The researcher analysed the data using thematic analysis in order to identify emerging themes from the data triangulation.

The findings of Kerhwald's (2008) study indicated that the students view social presence as the personal willingness to participate in online communities. Also, the participants stated that social presence was manifested by the frequency of comments of each member of the online community. Most importantly, Kerhwald (2008, p.95) suggests that in order to develop social presence, there should be an 'establishment of social presence and ongoing demonstrations of presence'. Based on these findings, he recommends that processes in computer-mediated environments should be observed as a means to understand the importance of interaction and collaboration to foster social presence.

The effects of using videos to increase communication and social presence in an online community of inquiry were investigated by Borup, West and Graham (2011). The authors used a case study research design to observe how pre-service teachers perceived the use of asynchronous videos by their instructors (n=3) in their online courses about educational technology. The courses ran for one semester and the online tutors were experienced online and face-to-face teachers. These online tutors used different video strategies to conduct their lessons and make them more engaging and interactive. Two of them used the tool Voice Thread (i.e. a software application which allows users to interact during video broadcast) and one of them Youtube. Borup, West and Graham interviewed 18 students and data analysis was conducted by coding the information using the community of inquiry framework in relation to social presence (Garrison et al, 2000). The findings suggest that social presence was enhanced by using videos, as the students stated that they felt closer to the instructor and more involved in

the online community. For instance, the students explained that actually 'seeing' the online tutor's energy and expressions helped them to be more engaged in the online community. On the other hand, one limitation observed in this case study is that peer interaction was difficult to maintain as the students struggled to read and respond to online comments.

Hauck and Warnicke (2012) also conducted an exploratory investigation for six weeks to explore the impact that materials for training online tutors for English for Academic Purposes (EAP) had on social presence in an online training course. The participants were novice online tutors (n=9). Data were gathered by observing the participants' task performance during the course. Using content analysis, they analysed the participants' posts on the course forums (individual and group). Findings indicate that the design of collaborative tasks is essential to promote social presence and that task-based training could be used in teacher training in CALL as a means to educate teachers via real-life activities. In addition, they found that participants acquired different roles in the online community (e.g. they used Salmon's (2002) taxonomy to classify levels of participation) depending on how they interpreted the task. The authors suggest that social presence is fundamental for the success of online courses, as without, it would be difficult to construct the online community. Also, they claim that social presence should not be seen as a separate element in the online community.

Even though the Community of Inquiry Framework (Garrison et al, 2000. Figure 3) has been empirically investigated in many studies as seen above; it has not been exempted of criticisms. In terms of the Col model foundations, Jezegou (2010) mainly suggests that the theoretical principles of the Col model should be more explicitly explained as, according to Garrison and colleagues (2000) it draws from Dewey's and Piaget's views related to constructivism and socio-constructivism. However, there is no evidence of concrete link to such principles within the cognitive, social and teaching presence dimensions.

Another challenge regarding the Col framework is related to the little research regarding the study of the interdependence of the Col dimensions. In general social, teaching and cognitive presence have been explored separately, so there is a need for more evidence of effect of these three dimensions on online learning (Xin, 2012). In addition, the Col framework has been questioned regarding the flexibility (i.e. and also rigidity) of the categories and indicators it proposes and the subjectivity of their analysis.

ELEMENTS	CATEGORIES	INDICATORS (examples only)
Social Presence	Affective Expression Open Communication Group Cohesion	Emoticons Risk-free expression Encourage collaboration
Cognitive Presence	Triggering Event Exploration Integration Resolution	Sense of puzzlement Information exchange Connecting ideas Apply new ideas
Teaching Presence	Design & Organization Facilitating Discourse Direct Instruction	Setting curriculum & methods Sharing personal meaning Focusing discussion

Figure 3: Community of inquiry dimensions, categories and indicators. Source: Garrison and Arbaugh, 2007, p. 159

2.9 Language Teachers' attitudes towards CALL

As a means to support language teacher education in CALL, CALL research has focused on language teachers' attitudes and perceptions about using technological resources with language learners (Meskill et al, 2006).

In 2007, Kessler investigated language teachers' attitudes towards technology as a means to find data on how teachers can be educated effectively to use CALL. In order to collect information, he conducted a survey among 270 graduate students in masters in TESOL courses in the United States. This survey consisted of questions related to attitudes, teaching strategies, materials and assessment techniques in CALL: Variables such as 'informal teacher preparation' and 'formal

teacher preparation' were considered in order to interpret the students' responses which were statistically analyzed. The main findings suggest that positive attitudes towards CALL correlate with 'informal' teacher preparation, as this is strongly related to the participants' intrinsic motivation to learn about CALL. On the other hand, formal CALL courses might not necessarily have an influence on the participants' attitude towards technology for teaching and learning. Taking these results into consideration, Kessler (2007, p. 184) states that 'if attitude is a significant indicator of ability, it seems that language teaching professionals are generally capable and confident in their use of technology.' Nevertheless, he also indicates that in order to improve teacher professional development in CALL, 'it may be important to evaluate teachers' abilities through observation rather than surveying' (Kessler, 2007, p.184).

In relation to teachers' confidence in CALL, Egbert, Paulus and Nakamichi (2002) after gathering data from in-service teachers in a CALL course through surveys and interviews, reported that teachers' lack of confidence in their CALL knowledge (i.e. their ability to make useful pedagogical choices) clearly affected their use of technological resources in language teaching. The authors argue that confident L2 teachers who use CALL materials may have more positive results with learners, but this does not guarantee that teachers will actually implement CALL resources in their language courses. In this sense, Kessler and Plakans (2008) claim that teachers with high levels of confidence might feel a bit 'too' comfortable with technology and, therefore, might have little interest in using it.

Issues on language teachers' confidence in technology for teaching and learning might be linked, for instance, to teachers' own self-esteem. In psychological terms, self-esteem allows individuals to regulate how they feel about themselves and their actions in relation to educational, social, and affective issues (Rubio, 2007). Therefore, this could influence whether and how teachers feel about using CALL resources with language students. In CALL, there is relatively little research on the links between CALL and self-esteem for both L2 learners and teachers. For example, Cutrim Schmid (2007) discusses how the use of one of the features of

interactive whiteboards (i.e. ActiVote) helped manage the students' affective factors (i.e. shyness) to improve their language learning processes. In their 2012 paper, Tayebinik and Puteh point out the relevance of considering psychological features, and propose to explore self-esteem issues, when using technological resources with students. Mainly, the authors refer to learner differences such as personality and learning styles.

2.10 L2 teacher CALL knowledge and skills for online teaching and learning: What do L2 teachers need to teach languages online?

In the current CALL teaching context, L2 teachers are considered facilitators that should know how to 'use', 'create' and 'teach' (Reinders, 2009, p. 231) using technology in order to help students to achieve their learning goals. Warschauer (2002, p.455) states 'language teachers must not only use e-mail to promote English teaching but also teach English to help people to communicate effectively by e-mail'. Therefore, L2 teachers should have a variety of technological and pedagogical skills in order to become CALL competent and have a positive impact in their teaching (Davis and Loveless, 2011).

Hubbard and Levy (2006) present the notions of L2 teacher *knowledge* in CALL, which is what he/she should know to make informed decisions. Also, they discuss the *skills*, or what techniques or strategies L2 teachers are actually able to apply in order to use CALL successfully with language learners. They also elaborate on the pedagogical/technological dichotomy of CALL knowledge and skills. Technological CALL knowledge has to do with the L2 teacher's ability to manage technology (e.g. how to use a computer, download files, produce websites, etc.). On the other hand, pedagogical CALL knowledge is the L2 teachers' abilities to integrate technology in an innovative and meaningful fashion in order to improve their own L2 teaching and their students' language acquisition process (i.e. using online resources to improve L2 learners' writing skills).

The reason why Hubbard and Levy's (2006) argument on L2 teachers' CALL knowledge and skills is important to consider in teacher training and development in CALL is that sometimes L2 teachers, and also L2 teacher educators, are not fully aware of the potential of the pedagogical and technological knowledge L2 teachers might already possess. For example, if teachers do not know about language teaching approaches or techniques (e.g. collaborative learning) in face-to-face contexts, how can we expect them to use CALL resources to foster collaboration in an online learning environment with their L2 learners? Even more importantly, how will they know how to collaborate themselves with other teachers in a teacher development for CALL course? These facts are acknowledged by the L2 teacher education in CALL community, as CALL researchers are aware of the challenges of training 'tech-savvy' L2 teachers. This is particularly due to L2 teachers' diverse knowledge, background, and the design, implementation and evaluation of effective and sustainable CALL training and development courses (Crandall, 2000).

2.10.1 TESOL standards for technology (Healey et al. 2011)

Given what teachers need to know and be able to do in order to use technology effectively for language teaching, the International TESOL Association proposed a set of guidelines to help them identify and develop the knowledge and skills they and their learners need. L2 teachers should be aware of the technological resources and options they have when integrating technology for language teaching, whether it is in face-to-face or online learning contexts. For these reasons, TESOL international gathered a team of CALL researchers (Healey, Hanson-Smith, Hubbard, Ioannou-Georgiou, Kessler, and Ware, 2011) and asked them to produce a set of technological and pedagogical standards which L2 teachers and learners should achieve in order to take advantage of CALL resources. As Hubbard and Kessler (2008, p.1) state these standards have been proposed to:

- Prompt teachers to learn and to use technology in their teaching
- Articulate a clear set of stages for development of teacher IT competence
- Provide direction and motivation for integrating technology into language teacher education
- Guide administrators and policy makers
- Help minimize the digital divide between countries and within countries

Taking these characteristics into account, the TESOL Technology Standards Framework (<http://www.tesol.org/advance-the-field/standards/technology-standards>) (summarized below) includes the following (Healey et al, 2008, p.29-41):

1. Goal 1: 'Language teachers acquire and maintain foundational skills and knowledge in technology for professional purposes'
2. Goal 2: 'Language teachers integrate pedagogical knowledge and skills with technology to enhance language teaching and learning'
3. Goal 3: 'Language teachers apply technology in record-keeping, feedback and assessment'
4. Goal 4: 'Language teachers use technology to improve communication, collaboration and efficiency'

2.10.2 Skills for online language teaching and learning: A model

While the TESOL standards relate generally to the use of technology in language teaching, Hampel and Stickler (2005) identify a series of skills, ranging from technological to pedagogical that L2 teachers should acquire for effective online language teaching. In general online learning, it is possible to find models such as Salmon (2011). However, Hampel and Stickler's (2005) pyramidal model (figure 4) has been proposed specifically for online *language* learning and teaching. As the skills suggested by Hampel and Stickler are linked to the online learning

competence of L2 teachers, it can be inferred that the acquisition of such more specialised skills can be built upon those they already possess as language teachers.

For instance, Motteram and Slaouti (2006, p. 83) discuss L2 teachers' experience in a CALL training program and state that 'the aim is to develop transferable skills rather than teach programming' for one of their module's goal. They explain that the teachers' prior knowledge and teaching philosophies can support their CALL skills and knowledge development. In table 4, a description of the skills is shown (Hampel and Stickler, 2005)

Skills	Description
Basic ICT competence: Technological	L2 teachers' familiarity with basic features of technology and their use (e.g. word processor, Internet).
Specific ICT competence: Technological	L2 teachers' ability to manage particular resources to be applied on an online or blended course.
Ability to deal with constraints: Technological	Strategies L2 teachers might use to overcome difficulties when using online resources.
Promote online socialization: Pedagogical	L2 teachers' ability to establish and promote interaction and sense of community in online environments
Facilitate communicative competence: Pedagogical	L2 teachers should be able to promote communication and encourage exchange in the target language among students.
Develop creativity and decision making: Pedagogical	L2 teachers should enhance their creativity by using appropriate technological resources.
Teaching style: Pedagogical	L2 teachers should be able to modify their teaching profile in order to apply technology effectively in online settings and acquire a 'personal approach' when teaching online.

Table 4: Online language teaching skills (Hampel and Stickler, 2005)

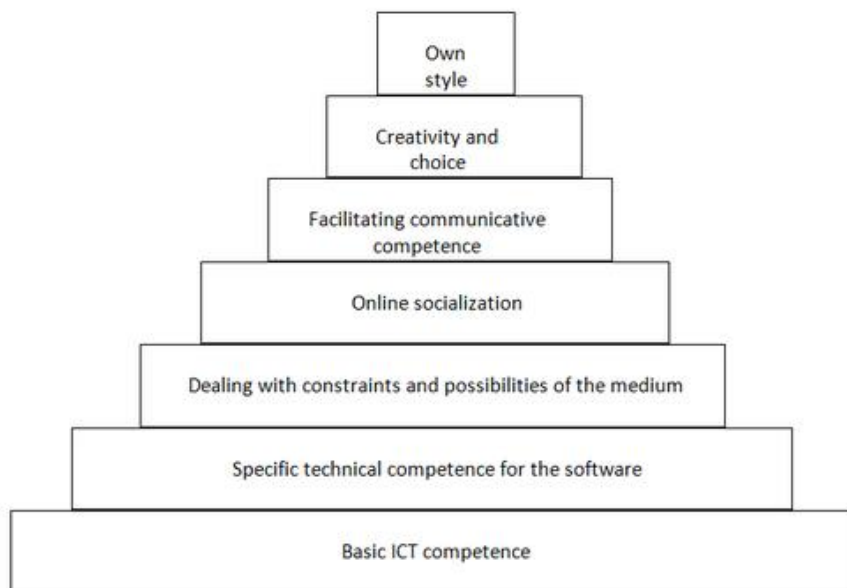


Figure 4: Online language teaching skills pyramid. Source: Hampel and Stickler, 2005, p. 311

Stickler and Hampel (2007) conducted a case study to evaluate their own framework (Hampel and Stickler, 2005) to assess the effectiveness of an online language teacher training they delivered for online tutors of German at the Open University. After interviewing one novice and one experienced tutor trainee (from a total= 10) they concluded that both of them benefited from the experience and increased their confidence and creativity. However, needs were different for the novice and the experienced tutor trainee; the novice focused on developing his CALL pedagogical and technological skills whereas the experienced trainee developed more collaborative skills with other colleagues.

In relation to Hampel and Stickler's model (2005), Compton (2009) analyses and challenges the taxonomy proposed by Hampel and Stickler (2005). She suggests her own adapted framework including (1) technological (2) pedagogical and (3) assessment skills. In addition, she points out that the understanding that L2 teachers acquire in these categories can succinctly be classified in terms of levels of proficiency as follows (table 5):

Level of expertise	Technological skills	Pedagogical skills	Assessment skills
Novice	L2 teachers should be able to manage basic computational functions and materials.	L2 teachers should be aware and develop appropriate knowledge for online teaching (e.g. language learning theories)	L2 teachers should be able to identify and apply evaluation techniques (e.g. Chapelle's (2001) criteria for CALL activities)
Proficient	L2 teachers should use their existing technological knowledge to identify and choose proper technological resources to use for language learning.	L2 teachers should be able to identify and select online materials and tasks. They are also able to recognize and modify language learning frameworks to improve online teaching.	L2 teachers should know and combine different assessment strategies in order to measure learners' progress and outcomes.
Expert	L2 teachers should be able to adapt, create and manage online resources comfortably.	L2 teachers have enough confidence to assess learners' progress considering online materials and activities.	L2 teachers should reach a high level of analysis and awareness on how to select and integrate evaluation methods for online learners and e-courses.

Table 5: Compton's (2009) re-visited model for online language teaching

Compton (2009) also discusses the reality of teacher training courses for CALL and indicates that courses that have already been designed could be modified according to the L2 teachers' needs. In this matter, Reinders (2009) raises concerns in terms of how to develop L2 teachers' CALL skills and their effective application with learners. He suggests that L2 teachers can be overwhelmed by the amount of information they have to take in to develop their CALL skills.

McNeil (2013) explains that the transfer, and possible acquisition, of CALL knowledge and skills could be improved if this developmental process took place on a situated context linked to real-world teaching. He came to this conclusion as he conducted an exploratory case study in a face-to-face L2 teacher training for CALL course for 15 weeks. The participants were 21 students from a Master in TESOL programme in Korea. During the course, the students were asked to keep two journals; a teaching journal and a technology journal. In the former, students reflected upon and compared language teaching methods (based on the course core readings) to their own teaching practices. In the latter, the students read about CALL activities for language teaching (also from the course readings) and evaluated them. Also, they were asked to reflect about whether they would use such activities in their teaching contexts. In addition to this, the course included a number of activities such as workshops, projects and microteachings as a means to promote the students' CALL skills.

In order to know the students' perceptions of the course, McNeil collected qualitative data using pre/post course surveys (CALL skills survey) and questionnaires (Perception of Situatedness questionnaire and a Relevant Activities questionnaire). The data from the surveys and questionnaires were coded numerically and the open ended questions were examined using thematic analysis in order to correlate the results. McNeil used these different instruments and analysis methods as a means to account for data obtained mainly from the participants' self-analytical responses, which he considered a limitation of the study.

While McNeil's findings show positive results in terms of the CALL knowledge and practice the participants perceived and achieved after the training, he strongly suggests that the process of CALL skills development should be observed and documented in more detail. From this study, it is still unclear how and to what extent each activity of the course helped to develop the participants CALL skills. Also, information about what activity was better for specific CALL skills (e.g. pedagogical, technological) was not provided. He states: 'although the studies reviewed describe how problems and projects were implemented in CALL teacher preparation courses, the question remains whether and how learners develop CALL skills within these contextualised learning environments' (McNeil, 2013, p.5).

2.11 Models of teacher training and development in CALL

Within L2 teacher training and development in CALL, a variety of attempts have been made to support L2 teachers to improve their CALL skills and knowledge. These initiatives vary in terms of methodology (e.g. face-to-face, online or blended contexts) and mode of content delivery (e.g. guided, self-directed).

2.11.1 Online learning in L2 teacher development in CALL

Bauer-Ramazani (2006) discusses how teachers of English were trained in an online course for CALL. She states that the course design approach was learner-centered and fostered collaborative work. The L2 teachers worked with a website that included theoretical content and practical activities that helped them to interact with each other using synchronous and asynchronous resources and materials. Bauer-Ramazani (2006) explores issues such as the L2 teachers' technological knowledge, the role of the online tutor and the importance of establishing presence, collaboration and interaction in online learning communities. She also explains the limitations of using online learning for teacher L2 development and agrees with Lord and Lomicka (2008) in relation to the challenges of building up social, cognitive and teaching presence in an online community. In Bauer-Ramazani's study, time was considered a challenge as it was difficult for the online tutor to reply on time and provide technical and pedagogical support to meet each student's needs. Also, during the course it was difficult to arrange chats or live

events at a suitable time for everyone. The L2 teachers' workload was an issue as well. Thus, a solution to time and availability issues she was able to suggest from this study was mainly in relation to flexibility in course design. In her study, she allowed teachers to work on the course whenever they were less busy or saw fit. Some technical difficulties were also observed in the platform, but promptly solved by guiding the teachers on how to fix such problems by themselves and help each other. Overall, the online course had positive reviews by the students who provided the researcher with feedback.

In Son (2002), the aim of the study was to examine teacher trainees' (n=22) participation in an online discussion group within a CALL module at a Master programme in a university in Australia. The course was delivered online for 15 weeks, thus data were collected via the participants' posts on the discussion groups about topics related to CALL. Also, the students were surveyed through a web questionnaire to know about their attitudes towards online discussions. Qualitative analysis was applied to the participants' posts and quantitative analysis was used to process the questionnaires. The results show that there was a high level of interaction in the online discussions and that the participants benefitted from them. Nevertheless, the participants clearly stated that their online interactions would have been far more useful to them if the online tutor had been more active.

Levy, Wang and Chen (2009) conducted a study of an online teacher training course followed by an online teaching practice period. Here, they observed the entire process involved in two L2 teachers' developing their skills to teach online. The course design was based on Wallace's (1991) reflective approach. Also, they used an online platform (i.e. collaborative cyber community) to deliver the contents via synchronous and asynchronous resources. The researchers used mixed methods to collect their data; pre/post training surveys, reflective journals, self-reflection and monitoring reports, discussion forums data and videoconferencing recordings. After analyzing and comparing the two L2 teachers' responses, the authors concluded that the L2 teachers gained confidence in their online teaching

knowledge and skills through interaction with peers, practice and opportunities to apply this knowledge in their teaching contexts. The researchers stated that providing the L2 teachers with opportunities for reflection was highly significant for their professional development. They also suggest further detailed exploration on how L2 teachers' online teaching skills are developed.

Following a socially-mediated approach for online learning and Garrison and colleagues' Col, Ernest et al (2012) implemented and studied an online learning based tandem project for L2 teacher development. They observed L2 teachers' online negotiations on Moodle in order to identify teaching skills and the way they could be acquired. The analysis from the platform data and interviews revealed that signposting was essential to guide the participants into the discussions in an asynchronous online environment. Another important issue raised by the participants was the experience of being part of an online community. This helped them to better understand and reflect on the possible challenges their students might face when exposed to online discussions. Also, participants stated that during the course, the sense of community was built up as they had to do activities similar to those they would implement with their own language students. In sum, the authors concluded that the abilities L2 teachers should develop for online teaching and learning activities had to do with (1) planning and management (2) designing appropriate collaborative activities (3) setting ground rules for participation (4) guidance and (5) using tools and group space (Ernst et al, 2012 p. 17-18). The fact that they have the collaborative space to discuss their teaching, helps L2 teachers to develop their CALL skills in order to make informed pedagogical decisions (Grushka, Hindle-McLeod, and Reynolds, 2005).

In their seven-year longitudinal study Wu, Gao and Zhan (2014) examined the patterns of interaction, social and cognitive presence of three (n=3) English as a Foreign Language teachers (EFL) who were part of a professional development online community in China. This online community was implemented in a virtual platform that consisted of blogs, discussion forums, educational and training materials and space for sharing resources. The data were gathered from the

teachers' posts in the online discussion forums and online interviews with two of the teachers and one forum administrator. The information was analysed through Social Network Analysis, a technique 'used to investigate kinship patterns, community structure, or the organization of other formal or informal social networks' (Marcus, Moy and Coffman, 2007, p.443), in order to identify the frequency of the teachers' participation in the online community. Additionally, Content Analysis was applied to analyse the online discussion forum posts. Wu, Gao and Zhan's (2014) findings indicate that social presence was predominant in the online community, yet varied from teacher to teacher (i.e. one was more reluctant to participate than the other two). They also claimed that, initially, the teachers' communication tended to be directed towards participants with more experience, but as their involvement in the online discussion forums increased, communication became more horizontal among peers.

In relation to more specific online language teaching strategies, O' Dowd has investigated L2 teachers' telecollaboration competence. O'Dowd (2013, p.1) defines telecollaboration as 'online intercultural exchange between language learners who are in different geographical locations'. O'Dowd (2015, p. 63) explains that 'one of the essential CMC activities in foreign language education is undoubtedly telecollaboration.' Therefore, it is crucial for L2 teachers to become effective in online teaching so they can conduct successful telecollaboration activities and coordinate tandem online learning projects. Taking this into consideration, O'Dowd (2015) presents a model which shows that in order to use telecollaboration effectively teachers should have (1) organizational skills (2) pedagogical skills (3) technological skills and (4) confident attitudes and beliefs towards technology for language teaching. In order to verify how these competences develop, O'Dowd (2015) implemented an online platform for educating L2 teachers to telecollaborate. This platform included authentic classroom situations, materials to promote telecollaboration skills, videos where expert telecollaborators shared their experiences and an online community.

In order to evaluate the platform and find data about the teachers' experiences and challenges using it, 4 qualitative case studies were conducted. The participants were four 4 teachers who were new to telecollaboration. Data were gathered through interviews conducted via email. The participants were asked open-ended questions. The findings were identified from the emerging issues from the e-mail interviews.

The results of O'Dowd's (2015) research indicate that although the different skills tend to intertwine, it was found that organizational and technological skills were regarded as the most essential. In particular, technological skills which help teachers to both solve problems that may rise during telecollaboration and also deal with new technologies. Additionally, the participants suggested that they could benefit from a mentoring scheme which included online lectures, talks or workshops with experienced teachers in telecollaboration. Another interesting finding was that the participants stated that hands-on activities would support their telecollaboration skills, especially if they had the opportunity to implement them in authentic teaching contexts. Consequently, the participants explained that it would be useful for them to know more about the teaching context of the target culture, for example, how students are evaluated, in order to better organize their projects. Based on his results, O'Dowd (2015) suggests long term training courses for telecollaboration, as one-off training experiences might not provide language educators with the appropriate skills and knowledge they need to organize and carry out successful projects.

Kozlova and Priven (2015) conducted a study which mainly explored the technological and pedagogical skills that language teachers develop and how these are developed in a teacher training course for using 3D Virtual Worlds for teaching (e.g. Second Life). A secondary aim was to explore whether collaborative contextualized learning was a useful method for training teachers. The authors considered Compton's (2009) categories of novice, proficient and expert as a framework for discussing their participants' CALL skills and knowledge. The participants were 6 English as a Foreign Language (EFL) teachers enrolled in a

Second/Foreign Language programme in a Canadian university. According to the authors, all the participants had used technology for teaching before, however they do not provide concrete evidence about it. Data were collected via the VLE Blackboard where the training course took place for 10 weeks. The training course was divided into a four-week pre-training stage and a six-week teaching stage. Thus, the participants were provided with content to develop their CALL skills and knowledge to use 3D virtual environments with L2 learners (stage 1) and also a space to put that into practice (stage 2).

Kozlova and Priven (2015) analysed data from the participants' wikis and personal journals on Blackboard. They also examined the data from screenshots gathered from the participants' 3D hands-on projects during the teaching stage of the training course. As their study took an interpretive stance, the analytical framework was based on emerging themes from the data which were coded by the authors. The results indicate that the skills the participants developed were linked to how tasks in 3D worlds are organized, designed and how input is provided in these tasks.

As a result, it was identified that the participants' CALL skills were developed in a spiral manner, as Kozlova and Priven (2015, p.98) suggest: 'the development of online teaching skills in also a spiral process because the skills developed in the pre-teaching stage are revisited and refined in the teaching stage. Since teacher training was situated in an authentic context, the development of teaching skills occurred naturally from the formation of more general skill of framing the task to the more specific skills such as providing input and managing collaboration'.

2.11.2 Blended learning in L2 teacher development in CALL

Gallardo, Heiser and Nicolson (2011) state that the development of CALL skills is crucial for L2 teachers who want to use blended learning in their language classes. This is due to the multimodal characteristics of blended environments. They indicate that blended learning's 'very multimodality implies not only that practical knowledge of a variety of teaching modes and tools will be required but also that teachers may need to engage with learners, and their teaching peers, in ways that

are more flexible, diverse and perhaps even more demanding as a result' (Gallardo, Heiser and Nicolson, 2011, p.219).

Motteram (2001, 2006, 2009) explains that blended learning models in L2 teacher education in CALL increase reflection and quality of teaching, as teachers are able to share their thoughts within an online and offline community. This helps language teachers to share practices and experiences in order to become aware of the existence and use of technological resources and online task design (for more on task design and Task Based language Teaching (TBLT) in online environments, see Thomas and Reinders, 2010).

In his 2006 longitudinal case study, Motteram elaborates on the experiences of different groups of in-service language teachers in a blended learning for CALL course in a postgraduate programme in a UK university. This CALL course was given fully online as well. The author wanted to explore (1) the teachers' perception of the blended component, (2) the reasons of why one group of teachers had less positive outcomes in the online component and (3) how to best use blended learning in educational contexts. The design of the blended course included face-to-face workshops and lectures complemented by online work (online discussions, examples and practice of online language teaching). Salmon's (2001) online learning model was also incorporated in the design of Motteram's course to foster CALL skills. The aim of the blended course was that the teachers should develop their CALL skills but also be able to transmit their knowledge and engage in professional development experiences beyond the training. In terms of data collection, Motteram used questionnaires and face-to-face focus groups to gather information. For data analysis, coding and transcriptions were used. He also presented a Transformative Education Scale for Distant Learners (table 6) based on his previous work (2002, 2004) and Biggs' (1999) and Toohey's (1999) in order to show the L2 teachers' transformational stages in online environments.

The findings of Motteram’s study show that most of the in-service teachers saw the blended course as a positive experience. They stated that the online component encouraged self-directed learning, as they had to prepare their posts. They also became aware of the different technological resources available to teach the language and how to apply them. The directed tasks were helpful for purposeful learning, as on the internet it is very difficult to select and evaluate appropriate teaching materials and activities. One limitation in the blended course was that one group of teachers was not very active on the online forums. This was due to the fact that they saw each other face-to-face, thus thought there was no purpose in further discussion of ideas online. Also, they did not feel very confident about commenting, so anonymity of posts was suggested as a possible solution to encourage online interaction. The results indicate that Salmon’s (2011) stages were useful for scaffolding teachers’ developmental process. In addition, the transformative scale was helpful in observing the in service teachers’ development during the online course. This study also shows that the teachers were able to develop general study skills in the blended course, which is beneficial for any academic activity they conduct.

Stage	Description
1. Getting an overview	Read input materials (new ideas); become acquainted with new ideas and new skills, reflect on these in terms of own experiences
2. Supported knowledge and skills development	Try out new skills with support from tutors. Discuss ideas with peers and tutors online, reflect on new experiences and progress with further reading.
3. Gaining independence	Try out new ideas in own professional context
4. Going it alone	Establish a personal view and become confident with new skills
5. Transferring knowledge and skills to others	Innovate and inspire others to change ideas

Table 6: Transformative education scale for distance learners (Motteram, 2006)

Regarding language teachers' transformation, Orlando (2009) conducted a qualitative case study in which she explores the changes in L2 teachers using technology over time. The aim was to examine how the teachers' pedagogical activities changed as technological resources became more predominant for language teaching. The study lasted five years and observed the changes of five teachers. The author gathered data from a teacher education project the teachers had participated in (in which she was a researcher), classroom observations, and interviews with the teachers and focus groups with their students. After analysing the data by identifying emerging themes, the results suggest that the change took time and depended on each of the teachers' identity, teaching style and context. Also, she claims that changes in teachers' teaching practices are difficult to trace, especially due to the evolving nature of technological resources. For this reason, Orlando (2009) recommends longitudinal studies with different data collection methods which allow researchers to follow a 'path' on the teachers' actions in order to see how that has been transformed over time.

Motteram (2009) presents suggestions for the design and implementation of L2 teacher training and development courses for CALL. He states that the idea is to use materials and activities that develop L2 teachers' technological and pedagogical CALL skills. He explains that experiential learning is crucial for CALL skills development. Additionally, he draws attention to the value of technological resources to support online or blended learning L2 teacher development courses for CALL. Motteram underlines the fact that a number of technological resources (from multimedia applications to social networks) can be combined in CALL professional development courses as long as they have a purpose to meet the teachers' needs. Also, he discusses the incorporation of the online community of inquiry framework (Garrison et al, 2000) as a base model to implement courses to develop L2 teachers' CALL skills. Motteram points out the importance of the three dimensions of Col (cognitive, teaching and social presence) to work together in a balanced manner in order to enable critical thinking, reflection and collaboration.

He also suggests that the Col model can be complemented with TESOL cognitive and social theories in order to produce more integrated designs to enhance course effectiveness (i.e. individual and collaborative development).

In a qualitative investigation, Comas-Quinn (2011) analyzed L2 teachers' perspectives on the introduction of a blended learning component into a program which had been previously offered on either a face-to-face or fully online basis. She used observation, questionnaires and interviews to gather data. Qualitative (thematic) and quantitative analysis was conducted to process the information. She observed and evaluated how the teachers' experienced this modality switch. The findings report that the teachers were not completely able to understand the purpose of the different resources they had to deal with and knowledge transmission channels. This was not only due to the little experience they had teaching online but also to the inadequate training they were exposed to. In relation to the training, the participants stated the need to comprehend the 'know-how' and the 'know-why' of using a particular online resource in order for it to be useful for their learners.

This brings the discussion back to the technological and pedagogical knowledge and skills teachers need to develop in order to facilitate second language acquisition with synchronous and asynchronous tools. Most of the teachers in Comas-Quinn's study were experienced face-to-face instructors, but realized they needed to acquire complementary competence to teach online and also learn how to integrate technology into their teaching.

2.11.3 Self-directed and semi-guided CALL teacher training and development

In a language teaching context where technology is both ubiquitous and in constant evolution, L2 teacher training and development courses should be designed, implemented and evaluated with the aim of encouraging L2 teachers to continue developing their CALL skills once those courses end. In this sense, courses should aim to foster teachers' independence, which is the ability to take responsibility and control of their pedagogical and professional decisions and

actions, in order to promote autonomous and ongoing teacher education (Smith, 2001).

Robb (2006) explains that it is important to raise L2 teachers' awareness of past, current and future technological resources, but also to teach them to be independent in their professional development. This means, L2 teachers should actively participate in instances where they can increase, apply, share and construct CALL knowledge with the support of others (see also Hanson-Smith, 2006, 2013; Kolaitis et al, 2006). This could help L2 teachers, Robb says, to tackle challenges that new technologies bring and also to have a wider view of the resources and options they have to use CALL with L2 learners.

In his reflective paper, Lewis (2006) explains his own experience as a self-taught online teacher. He learned how to use online resources for language teaching in a research project which lasted 8 weeks. The objective of the project was to develop technological and pedagogical skills to teach English online to 14 students in a university in France. The project included reflection on personal journals and collaborative work. The latter was conducted with (1) an experienced colleague in online teaching through critical observation and (2) his colleague and the project's researchers via online discussion forums. Lewis indicates that he mainly developed his technological and pedagogical online teaching skills by trying the online learning environment by himself. Also, he explains that his individual journal and his colleague's comments on his teaching were tremendously useful. On the other hand, he states that shared reflection in the online forum was not effective for his professional development, as he preferred the private space that the journal provided him to keep record of his online teaching experiences every week.

Stockwell (2009) presented a study about training higher education L2 teachers for CALL and strategies to self-directed learning. He states that in order to self-direct their learning, L2 teachers should (1) critically examine their available environment (e.g. teaching aims, resources), (2) be able to locate sources of information, (3) be up-to-date with technological resources, (4) make decisions on learning goals and materials, (5) be a reflective practitioner. Four language teachers participated in a

2 hour face to face training for CALL at the beginning of the semester. Here they were presented with a variety of materials they could use to include technology with their students. They also were encouraged to continue their own learning after the training using the strategies mentioned above. Stockwell collected his data using pre and post training questionnaires, journals where the teachers kept track of their self-directed learning and interviews. The results were positive and, in general, the teachers used CALL in their L2 classes. In terms of their self-directed learning, they stated they were overwhelmed by the amount of information available and that it was difficult to select, choose and evaluate what was useful. Also, they said it would have been useful to get feedback and being able to discuss what they were learning with others.

In an attempt to encourage L2 teacher development in CALL, TESOL International has implemented a free guided online teacher development course which integrates web tools, a CALL based syllabus, field-related talks, learning-by-doing activities, collaboration and reflection. In their study about this course ('Becoming a Webhead') Almeida D'Eca and Gonzalez (2006), based on their participants' comments on the course, report that this is a plausible scheme for online tutors as it promotes CALL competence in both online and face to face teaching. As the training is open access, the participants follow the course at their own pace which encourages self-directed learning. However, the presence of an online tutor that helps them with the process has made the course more beneficial. At the same time, the authors explain, it is this very same course organization that causes challenges during the process, as difficulties in terms of (1) time management (2) amount of input (3) setting up synchronous tasks and (4) online tutoring were identified. In general, the participants have limited time to work on the contents of the course due to a heavy workload, so it makes it difficult for them to deal with the amount of information. In addition, as they have different schedules or live in different places in the world, it is complicated to organize online live activities that meet everyone's timing and availability.

Another free online self-directed initiative is the Developing Online Teaching Skills (DOTS) project (<http://dots.ecml.at>). This project aimed to (1) identify the challenges that L2 teachers face globally when using online environments for language instruction and (2) identify L2 teachers' needs when they use self-directed experiences for CALL development. DOTS (Beaven et al, 2010) was implemented using Moodle and its objective was to provide CALL training and development resources for L2 teachers with different levels of technology expertise. Also L2 teachers who were not able to participate in formal training courses (usually, freelance L2 teachers) or wanted to improve their CALL knowledge on their own could benefit from this online course. The course design included small activities (from basic to advanced) that L2 teachers could use with their students, a discussion forum to share ideas with colleagues and guidelines for self-assessment. Additionally, some of the materials were presented in different languages so that teachers could take the course in their native language.

The methodological choices for the design of DOTS were based upon an analysis by Beaven et al (2010) of the needs of 26 language teachers in 25 countries in Europe. The questionnaire included questions about the teachers' existing knowledge, perceptions of technology, materials and the benefits of training. The results of this needs analysis show issues such as L2 teachers' confidence and their reasons for using and not using CALL resources in their teaching. In addition, participants highlight the advantages of online tools to enhance independent language learning outside the L2 classroom. In terms of their own CALL skills development, the participants point out the need to know how to use existing technological resources for CALL as well as techniques for using online tools they are rather unfamiliar with. Also, they emphasized the importance of hands-on tasks and information exchange with colleagues for developing their CALL skills. Moreover, they indicate that the presence of a qualified online tutor as a guide in their developmental process would be beneficial for their training experience.

Bailly, Ciekansky and Guely-Costa (2013) implemented a self-directed L2 teacher training course in order to encourage participants to transform their teaching skills. This training was aimed to support L2 teachers to tackle the challenges of learner autonomy using technology. The methodological design of the training course incorporated critical thinking, reflection and collaboration in a virtual learning environment. The training course fostered the constructivist approach in the online community to encourage peer collaboration and self-direction. The participants of this exploratory study were 7 in-service language teachers (from different countries and educational institutions) with experience in self-directed learning. The online course was supported by 3 online tutors with vast experience in self-directed learning. Data was gathered qualitatively and quantitatively through interviews, questionnaires, self-assessment reports. Logs from the VLE were quantified to follow up the participants and online tutors' actions. Forum threads were also analyzed.

The results support the sustainability of the VLE to support L2 teacher development courses as the participants were stated that the flexible design of content delivery allowed them to choose individual paths according to their needs, but also collaborate with their peers. Particularly, they stated that the online forum was useful for reflecting and working collaboratively. The findings of this exploratory study support the argument about the effectiveness of online communities and the integration of reflection in CALL language teacher education. Nevertheless, the authors of this study underlined that the participants had had prior experience working in self-directed learning, so that might have influenced the positive outcomes. Thus, from this study, generalizations regarding inexperienced teachers in self-direction cannot be made.

Healey (2013) goes beyond self-education and proposes the 'training of trainers' (TOT) strategy. This is a measure which allows already CALL competent L2 teachers to act as mentors to support their colleagues in CALL. The TOT recommendation, she states, could also be a way to lower costs of teacher training and encourage supporting training communities. In theory, L2 teacher education in

CALL courses should aim for teachers to be prepared to use technology with learners but also for them to become 'experts' and transmit this knowledge in their teaching contexts. However, Healey (2013) explains that the TOT scheme might pose some limitations regarding, for example, the certification of the 'experts', the trainees' needs and profile, the trainees' students and even the language trainer-trainee should use for training matters (e.g. English as lingua franca). Also, the creation of materials for the TOT implementation might be problematic, as a 'one size fits all' design might not be effective in all teaching contexts. For these reasons, she recommends conducting needs analysis surveys as a means to support the trainers and trainees in the best way possible.

The main conceptual and methodological pillars used in this thesis have been explained in the literature review throughout this chapter. Socio-constructivism, as part of teacher education (Dewey, 1933; Vygostky, 1978), was explained as this epistemological approach supports ideas of individual and collaborative construction of knowledge. This is linked to transformative learning theory (Mezirow, 2000) in adult education, which is used here as a means to foster the teachers' CALL professional development by self-analysis and peer reflection. Also, socio-constructivist and transformative principles are related to the concept of practical inquiry which is the base for the community of inquiry model (Lipman, 1991; Garrison, Anderson and Archer, 2000) applied in this study to create and evaluate the online course. Hampel and Stickler's (2005) framework of CALL skills and knowledge for online language teaching is also incorporated in this investigation as the model for the necessary CALL competence the teachers need to develop in the online community.

Summary

In this chapter issues regarding the current directions of L2 teacher education have been presented. In addition, the socio-constructivist philosophical approach that supports this investigation has been explained, and the concept of community of inquiry was introduced. Also, the theory of transformative learning was explained.

An overview of the concepts of CALL was developed, as well as the concepts of CALL skills and CALL knowledge. The difference between technological and pedagogical CALL skills and knowledge was also discussed.

A review of the current context for language learning and teaching and the role of technology were provided. The concepts of digital native and digital immigrants were elaborated on in order to understand the relevance of using CALL in the digital era. A definition of online learning and teaching was provided. Additionally, the online community of inquiry framework for online learning was defined.

Language teachers' roles in online learning and teaching were also discussed and Hampel and Stickler's (2005) model for online language teaching was presented. Finally, different models for L2 teacher training and development for CALL were explained.

Chapter 3: Methodology

In this methodology chapter, section 3.1 presents the purpose of the study and research questions that guided this investigation. In section 3.2 the background of the study is presented. Section 3.3 deals with the online teacher training and development course design. In section 3.4, the recruitment of the participants is explained. Section 3.5 presents the online course implementation. The possible research methods for this study are examined in section 3.6. In sections 3.7 and 3.8 different research methodologies for online learning and teacher education in CALL are described. In section 3.9, the methodological and analytical frameworks for this research are discussed. Issues on the role of the researcher, data validity, reliability, triangulation, ethics and pilot study are discussed in the last section of this chapter.

3.1 Purpose of the study and research questions

Due to the fact that there is still a gap in our understanding of how teachers develop their CALL skills and knowledge, it is important to gather and analyse data about how this process takes place in order to improve the design of L2 teacher training and development courses and support on-going teacher education in CALL. The aim of this investigation therefore is to observe how in-service language teachers (i.e. in this case from Chile and Easter Island) develop their CALL skills and knowledge for online teaching in an online teacher training and development course for CALL.

3.1.1 Research Questions

In order to guide this study, the main research question of the thesis is:

'How do L2 teachers develop their CALL attitudes, skills and knowledge for online teaching in an online training and development course for CALL?'

In order to answer the main question the following research subsidiary questions were investigated (table 7):

Research Question	Why?	How?
<p>1. What attitudes towards CALL, pedagogical skills and knowledge of CALL and online teaching of languages do teachers bring to the course?</p>	<p>Find out what prior attitudes towards CALL, technological and pedagogical knowledge and skills and experiences language teachers have before the online course in order to better observe any changes upon course completion.</p>	<p>Pre-course Interviews and questionnaires qualitative and quantitative data collection and analysis).</p>
<p>2. How does the teachers' understanding of CALL theory and practice for online teaching develop through social, cognitive and teaching presence in an online community of inquiry?</p>	<p>Identify the ways teachers developed their understanding (i.e. choices, actions) about CALL for online teaching in the online training and development course.</p>	<p>Observation of social, cognitive and teaching presence in the online course via blogs, discussion forums and log files (qualitative and quantitative data collection and analysis).</p>
<p>3. What evidence is there of transformation in the teachers' attitudes towards CALL, knowledge and skills for CALL and online teaching of languages?</p>	<p>Identify if there is any changes in the teachers' attitudes towards CALL, knowledge and skills for CALL and online teaching upon course completion.</p>	<p>Post-course interviews and questionnaires qualitative and quantitative data collection and analysis).</p>

Table 7: Research questions

3.1.2 Procedures

In order to conduct the study, the following procedures were applied:

- A needs analysis survey was conducted among in-service Chilean L2 English teachers prior to the research design.
- Online course design: The online teacher training and development course for CALL syllabus (i.e. contents) and structure (i.e. mode of delivery, materials and organization of activities) was designed and planned.
- Participants sampling: The Chilean in-service L2 teachers for the study were recruited.
- Research Design: Methodological strategies, data collection and analysis choices were made in order to observe L2 teachers' developmental processes when developing CALL skills and knowledge for online teaching.
- Instrument piloting: the online teacher training and development course was tested, as well as data collection instruments.
- Online course implementation and data collection
- Data analysis and findings

3.2 Background of the study

As a means to investigate the research questions described in 3.1.1, an online teacher training and development course for CALL was designed and guided by this researcher acting as the online tutor.

3.2.1 Design-based Research

The principle behind the design and implementation of this online course is based upon the assumption that by setting out the design principles governing the course, the data that were gathered could be used to validate those principles. In this sense, the context of the study and the observation of the processes taken place in such environment are connected in terms of 'design, research *and* practice' (Wang and Hannafin, 2005, p.1). This design-based approach is defined as 'a systematic

but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories.’ (Feng and Hannafin, 2005, p.6-7). When using this research approach, researchers have to support their design on an identified issue or research gap, set clear research objectives, create an authentic research context, consider participants views and choose multiple methods to collect and analyse data (Feng and Hannafin, 2005; Rogers, 2012). The main design-based principles are (Dede et al, 2004, p.159):

- Goals of designing learning environments and developing theories or ‘prototheories’ of learning are intertwined.
- Development and research take place through continuous cycles of design, enactment, analysis, and redesign.
- Research leads to theories that communicate relevant implications to practitioners and other designers.
- Research accounts for how designs function in authentic settings, not only documenting success or failure, but also focusing on interactions that refine our understanding of the learning issues involved.
- Research relies on methods that can document and connect process of enactment to outcomes of interest.

Thus, in studies which take a design-based orientation ‘the research moves beyond simply observing and actually involves systematically engineering these contexts in ways that allow us to improve and generate evidence-based claims about learning’ (Barab and Squire, 2004, p. 2). The design-based approach is useful as it allows the exploration of research issues in contexts linked to the real-world. Nevertheless, limitations exist in terms of the role of the researcher, credibility and generalization of results, thus they should be addressed when research contexts are designed. These challenges can be tackled by selecting appropriate methodological strategies, depending on the rationale of the research, and techniques to collect data from multiple sources in order to triangulate the

findings. As observed in some of the studies in CALL teacher education presented in the literature review (Beaven et al, 2010; Almeida Eca and Gonzalez, 2010) researchers have designed, implemented and evaluated models for teacher development. This is particularly important in technology-mediated education and training, as sometimes online environments are designed and investigated without the target users' involvement (i.e. teachers and/learners). In this study, it is relevant to consider the teachers' online training context and the process they go through when developing CALL skills and knowledge for online teaching in order to draw useful conclusions to improve models for educating teachers in CALL.

3.2.2 Needs analysis survey

Considering that in design-based studies researchers should work hand-in-hand with participants, or target users, a needs analysis survey was designed and conducted by this researcher prior to the start of this study. In teacher education in CALL, Reinders (2009) strongly suggests considering needs analysis assessments as a procedure to gain knowledge about L2 teachers' perspectives in order to provide them with proper preparation and cater for their training needs.

Therefore, the main objective of the survey was to gather data from Chilean in-service L2 teachers' views, experiences, needs and training preferences regarding teaching English with technology. For instance, one of the questions in this survey was *how would you like to be trained to use technology in the language class? Why?* (see appendix A). The survey was sent via email to the coordinators of the English departments of 2 universities and 1 college in the city of Concepcion, southern Chile, where this researcher used to live and work. The surveys were then distributed among in-service English teachers in each department. Although most of these teachers taught in higher education, they also had teaching experience in primary and secondary schools.

A total of 20 completed surveys were collected. The results of the survey showed that L2 teachers greatly value the use of technological resources for teaching different language skills. Also, they were aware that technology could act as a motivating tool in today's language classrooms. Moreover, the effective use of

these resources by language teachers and also students was perceived as a relevant issue among the surveyed L2 teachers. Furthermore, they stated that teacher training in technology should be ongoing and addressed by educational institutions (e.g. schools, colleges, universities) and, in particular, by the Ministry of Education in Chile.

As stated in the introductory chapter of this thesis, the Chilean government has implemented strategies to support L2 teacher development and improve language teaching in the country (e.g. 'English opens doors' programme). Nevertheless, based on the teachers' comments in the survey, the government efforts seemed to be insufficient. They explained that a 'one off' training experience was not effective to, for example, increase their technological and pedagogical knowledge and skills to use technology for language teaching. The teachers also indicated that due to their busy schedule sometimes it was difficult to enrol in training courses without their educational establishments' support. This concurs with what Matear (2006) discussed (presented in the introduction chapter) as one of the main concerns for language teacher education in Chile.

Bearing this in mind, the teachers' views from the needs analysis survey support the rationale for this investigation. By observing the process of how L2 teachers develop their technological and pedagogical CALL skills and knowledge for online teaching, it should be possible to suggest ways in which the design, implementation and evaluation of teacher training and development courses can be improved in Chile and other language teacher education contexts. Here are some examples of the teachers' comments from the survey:

'I think this must be something done quite often. I would like to have interactive workshops to update the teachers in terms of new tendencies and programs that may help the development in the classroom.' (Vane)

'I would like to be explained which linguistic aspects can be fostered and exploited by using different technological tools. I would like to have this insight so as to have a clear picture of what technology really is.' (Mike)

3.3 Online teacher training and development course design

The online course designed for this study was delivered through the virtual learning environment (VLE) Moodle and included theoretical input about CALL (also referred to here as the 'content'), opportunities for individual and group reflection and practical activities. The design was based upon experiential and transformative learning principles (Wallace, 1991; Woodward, 1991; Mezirow, 2000), different models of existing L2 teacher training and development courses for CALL (Bauer-Ramazani, 2006; Colpaert, 2006; Hampel and Stickler, 2007; Motteram, 2006; Levy, Wang and Chen, 2009) and the community of inquiry framework (Garrison, Anderson and Archer, 2000). The latter not only provided the structure to create the online community, but also the codes used for the analysis from a social, cognitive and teaching perspective. The foundations of this online course supported the idea of raising the L2 teachers' awareness on a variety of technological resources available and the different ways they can be used successfully for online teaching.

3.3.1 Resources on Moodle

The online course included asynchronous CMC resources such as discussion forums and blogs. In addition, the course syllabus (summarized on table 8) was based on the needs analysis survey discussed previously. Therefore, the content of the course included topics that the teachers thought useful for their CALL professional development. The theoretical content was transmitted through YouTube videos, educational technology websites, CALL research articles and power point presentations produced by the online tutor. Hands-on activities were also included to encourage teachers to link CALL theory and practice. The organization of the course resources and activities on Moodle was flexible so the teachers could choose when to access them. This flexibility not only promoted guided training but also self-instruction to foster the teachers' independence. This way, they could work at their own time and pace.

Week 1	Electronic Literacy
Week 2	CALL principles and methods
Week 3	Learning Styles
Week 4	CMC resources
Week 5	Mobile Learning
Week 6	Teaching Culture through CALL
Week 7	Social networking and community building
Week 8	Online teaching and learning

Table 8: Online course contents per week

3.4 Participant Recruitment

According to Creswell (2012) in order to better understand the main object of a study, it is necessary to create a context to gather data (i.e. the online course in this case study) and have individuals (i.e. language teachers) who can provide information for post-hoc analysis. This is linked to the design-based research principle explained previously as a mean to enrich the study and findings considering the research context and the participants' experiences in it. For this study, the following sampling strategies were applied:

3.4.1 Homogeneous sampling

The sampling criteria were based on a group of volunteer participants (i.e. in-service L2 teachers in Chile) who shared similar characteristics, such as:

- A degree in English.
- Working background. In Chile, teachers who have a teaching degree in English are able to teach in higher, secondary and primary schools. Usually, the educational institutions have autonomy to decide on job descriptions and recruiting.
- Language teaching experience.

- Interest in improving their language teaching using technological resources, (previous teaching experience with technology was not required for the online course).

For recruitment purposes, an online call for participants (i.e. *'in-service English teachers needed for an online teacher training and development course'*) was posted via Facebook on this researcher's personal wall. Also, participants were recruited through 'snowball sampling', as teachers who responded to the Facebook announcement shared this information with some of their own colleagues. Both of the strategies used for sampling were useful. Once sampling was completed the email addresses of the volunteers were collected. Then, a formal letter together with the online course syllabus, objective and a summary of the study were sent to confirm the teachers' participation (Appendix E).

Another sampling alternative applied was to contact headmasters from different schools in Chile via email and invite their English teachers to join the study. Unfortunately, due to time constraints and administrative protocols (i.e. this online course was research based and did not provide a formal certificate) obtaining support from Chilean schools was not feasible. This strategy was seen as useful to encourage L2 teachers to participate in the online training and development course, as this professional development experience would have been formally linked to their educational institutions in Chile. In spite of this limitation, the recruiting response was positive considering the volunteer nature of the study.

As a result of the sampling, the initial amount of participants for the study consisted of 26 volunteer English as Foreign Language (EFL) teachers from Chile and Easter Island. Four of these teachers had taken part in the needs analysis survey. It is worth clarifying at this point that as the online course progressed, only 8 L2 teachers (7 from Chile and 1 from Easter Island) fully completed the course. As a result, data from these 8 teachers (see table 9) were considered for the final analysis of the study (later in this thesis).

A detailed explanation of the attrition rate and dropout reasons will be discussed later in this thesis (see conclusion chapter). Nevertheless, it is possible to state that time-related issues were among the reasons which undermined the continued participation of most L2 teachers in the online course.

3.4.2 Participant background

The 26 volunteers that initially started the online course did not know each other. They were in-service English language teachers in Chile and Easter Island with a university degree in English teaching and/or translation in foreign languages. These educators were qualified to teach English in primary schools, secondary schools and higher education. Considering the discussion in the introduction chapter about English teachers' profile in Chile and the language proficiency requirements they have to meet for the Ministry of Education (B2 level minimum in relation to the CEFR), it is important to point out that, apart from one teacher whose English was her first language, all the teachers had B2-C1 levels. This is relevant in this study, as English was the language used in the course.

The participants taught English in schools, higher education institutions and/or language schools. Some of them also worked with private students or were seeking a full time job. Their teaching experience ranged from 1-1/2 to 24 years. The teachers' ages ranged from mid 20s to 40 years old. Although all the participants worked in different educational institutions in Chile, pre-course data (later in this thesis) showed that they had similar experiences and concerns in relation to the use of technological resources for teaching English language learners. For example, most of the teachers were encouraged by their educational institutions to use technology in their teaching, however, very limited (or none) training was provided.

Only 2 of them had been part of online communities for learning and used VLEs before this study. Therefore, in general the majority of the teachers were inexperienced as online teachers and also as online learners, thus saw the use of technological resources for English teaching as a challenge.

For these reasons, the teachers perceived the online course as an opportunity to improve their knowledge and skills for teaching English with online tools, as it could help them to tackle some teaching challenges such as:

1. Dealing with problems posed by the limited number of hours their classes had for learning English (i.e. usually 2 hours per week). Online teaching could support the practice of language skills outside the classroom.
2. Using technological resources to complement mandatory teaching materials provided by their educational institutions (i.e. they usually worked with pre-determined textbooks). Online teaching could have an added value to the English lessons.
3. Introducing innovative activities for language teaching with technology. Online teaching could be used to promote collaborative activities locally or internationally.

Participants	Place of Work	Teaching Experience	Employment Status	Degree/English proficiency	Prior formal Training In CALL	Prior experience Learning in online environments	Age
NEKO	Higher education	1.1/2 years	Employed/ Local university	English Teacher/ FCE level	Little	No	20- 25
CECE	Elementary/High School, Higher education	10 years/	Employed/ Local school/university	English Teacher/ FCE level	Little	No	35- 40
ANDY	Higher education	10 years/	Employed/ Local university	English Teacher/ FCE level	Little	Yes (1 course)	35- 40
MEG	Private lessons	6 years/	Self-employed/ Private students	English Teacher/ Native speaker of English	None	No	30- 35
EASTER	Elementary/High School	24 years/	Employed/ Local school	English Teacher/ FCE level	None	No	35- 40
FRANK	High school	2 years/	Employed/Local school	English Teacher/ FCE level	None	Yes (1 course)	35- 30
ALEX	Language institute	9 years/	Employed/ Local institute	English-Spanish Translator/FCE level	None	No	35- 40
HEK	None	2 years/	Unemployed	English Teacher / FCE level	None	No	25- 30

Table 9: Teachers' profile

3.5 Online teacher training and development course implementation

The online teacher training course was delivered on Moodle from 13th May to 1st July, 2013 (8 weeks). Moodle was chosen as the VLE to implement the course as it is a free resource, so the teachers were able to access it easily. Blackboard was also an alternative to run the course; nevertheless, as the teachers were external participants (i.e. not enrolled as students or staff members at Newcastle University) using this VLE was not feasible. During the 8 weeks the course lasted, the L2 teachers discussed and reflected individually and collaboratively on CALL issues for online teaching. They were able to exchange ideas and ask for suggestions to their peers in the online community. Practical tasks (n=8) were also required as part of the course. Feedback from the online tutor (this researcher) was given on a regular basis. The online training and development course procedures are shown below:

3.5.1 Pre-online course procedures

3.5.1.1 Moodle Induction

As a means to give the teachers proper support and help during the online course, 2 pre-course videos (figures 5 and 7) were produced and posted on the course Youtube channel created by the online tutor (<http://www.youtube.com/user/onlineteacher2013>). These links and written versions of the tutorials were also sent to the teachers by email. The tutorials included information about:

1. How to access and use Moodle during the course: Guidelines on how to navigate Moodle were provided. Also, the teachers' usernames and passwords (figure 6) were released and tested according to the timetable. Minor problems with the Moodle passwords were detected, but they were solved immediately by the department's IT staff. The teachers could watch the tutorial on the course's Youtube channel.

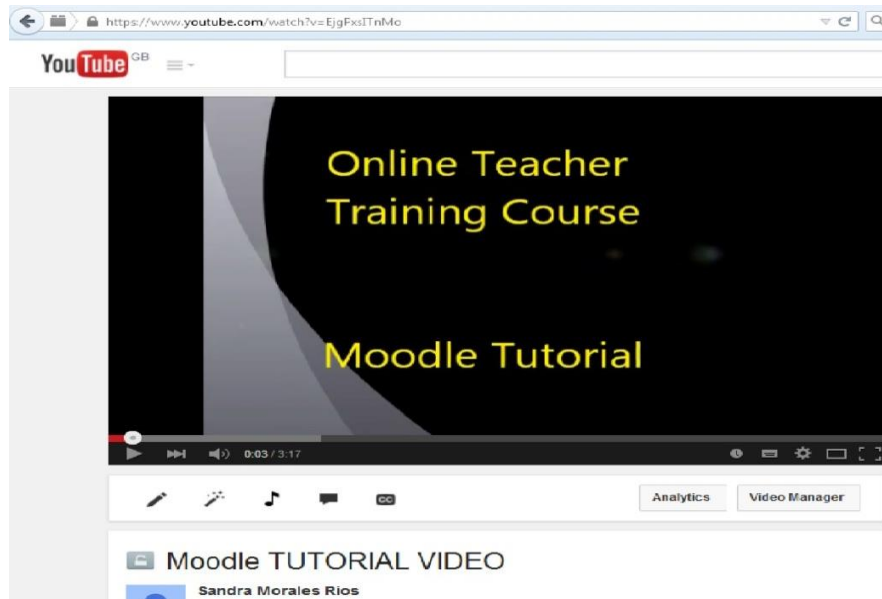


Figure 5: Moodle Tutorial on YouTube

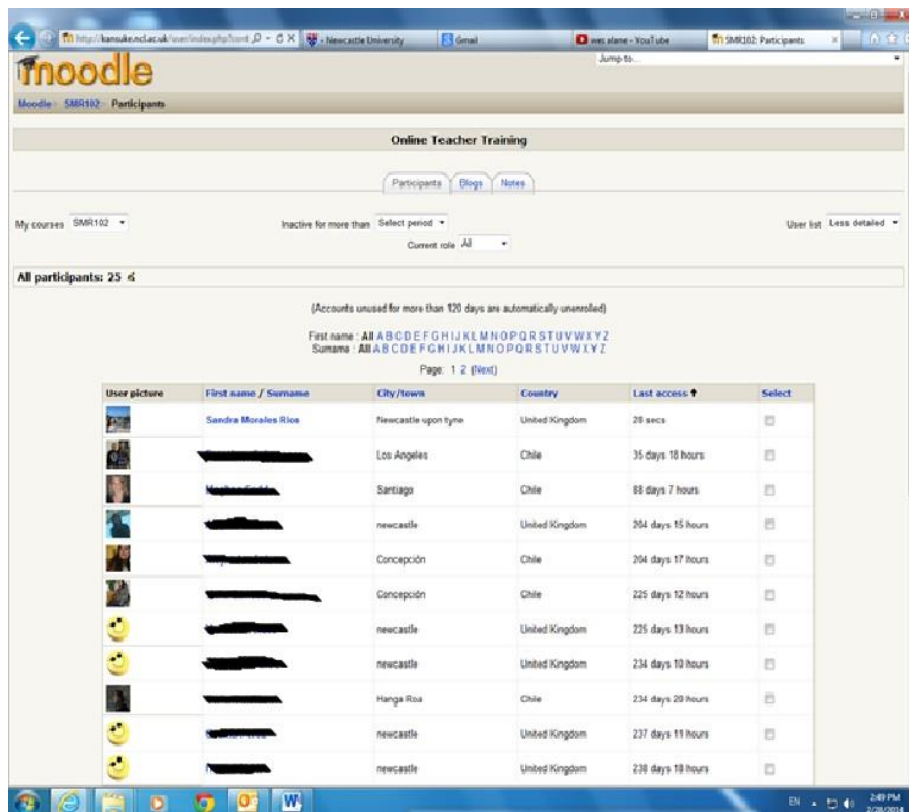


Figure 6: Teachers' list on Moodle

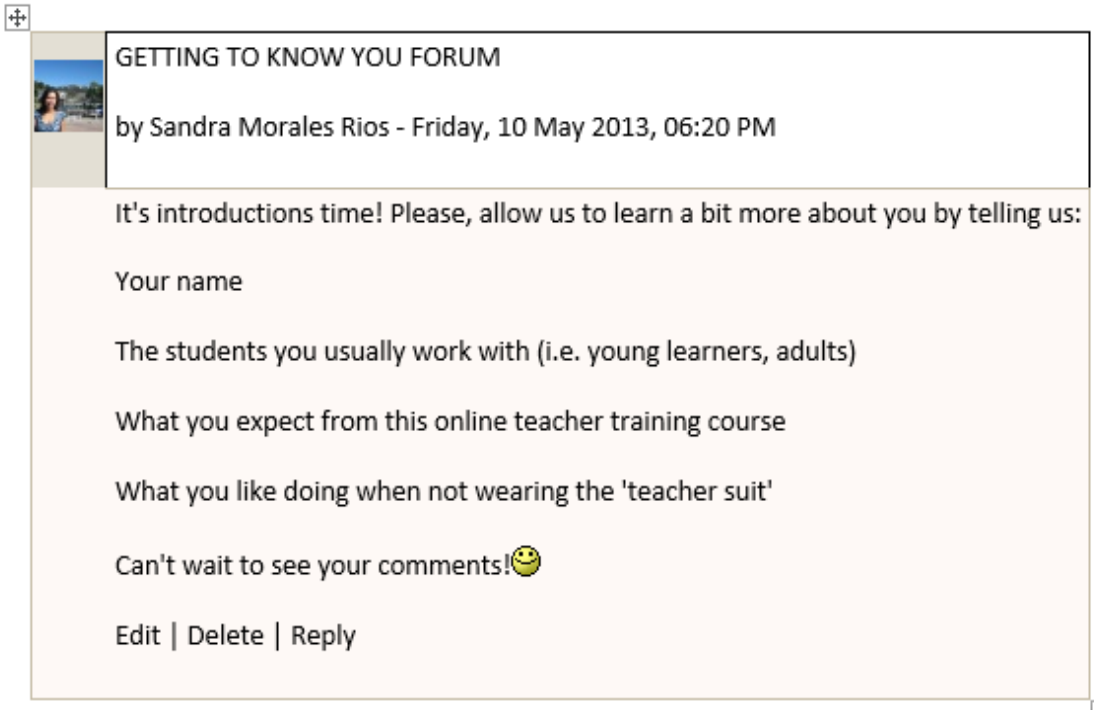
2. How to work on the materials and activities on Moodle: The teachers were informed about what they were expected to do during the online course. Suggestions on how to take advantage of the Moodle resources were made in the tutorial in order to assist the teachers.



Figure 7: Course materials tutorial on YouTube

3.5.1.2 'Getting-to-know you' discussion forum on Moodle

Most of the teachers in this case study had never met before the online course and lived in different locations (i.e. Chile and Easter Island). Therefore, in order to both familiarize them with one other and the online learning environment, a 'getting-to-know-you' discussion forum was set up on Moodle. The main idea was that the teachers could interact together in an informal fashion prior to the start of the course. This online forum was initiated by the online tutor in order to engage the teachers into the discussion. Figure 8 shows the online tutor's kick off post. Consequently, Figure 9 presents one of the teachers' post.



GETTING TO KNOW YOU FORUM

by Sandra Morales Rios - Friday, 10 May 2013, 06:20 PM

It's introductions time! Please, allow us to learn a bit more about you by telling us:

Your name

The students you usually work with (i.e. young learners, adults)

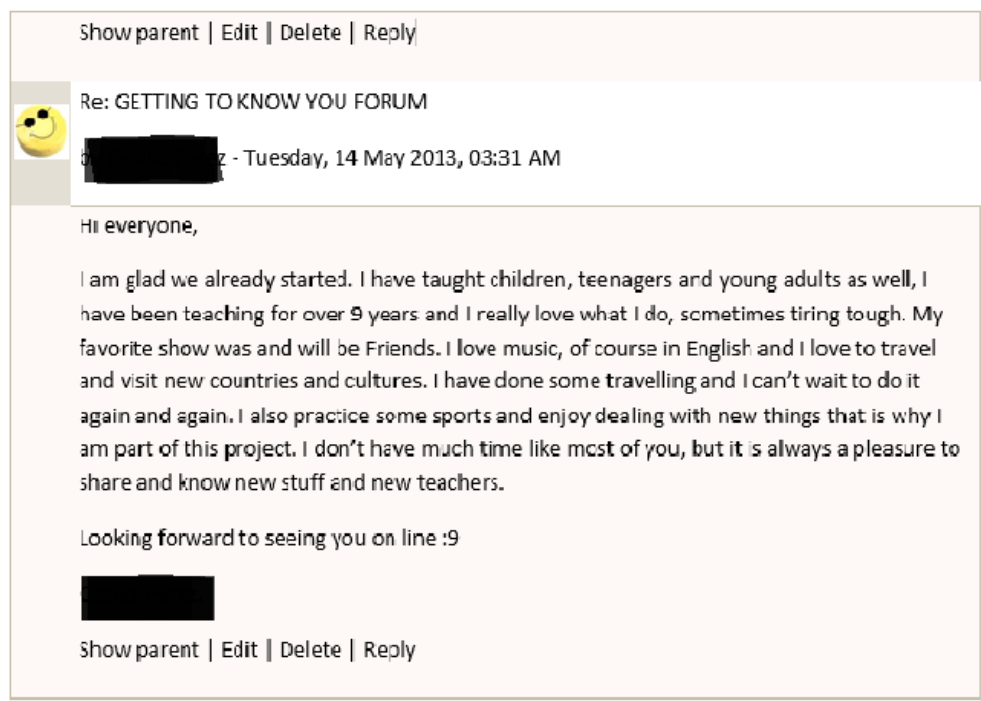
What you expect from this online teacher training course

What you like doing when not wearing the 'teacher suit'

Can't wait to see your comments! 😊

Edit | Delete | Reply

Figure 8: Online tutor's initial post on the 'getting to know you' forum



Show parent | Edit | Delete | Reply

Re: GETTING TO KNOW YOU FORUM

0 [redacted] - Tuesday, 14 May 2013, 03:31 AM

Hi everyone,

I am glad we already started. I have taught children, teenagers and young adults as well, I have been teaching for over 9 years and I really love what I do, sometimes tiring tough. My favorite show was and will be Friends. I love music, of course in English and I love to travel and visit new countries and cultures. I have done some travelling and I can't wait to do it again and again. I also practice some sports and enjoy dealing with new things that is why I am part of this project. I don't have much time like most of you, but it is always a pleasure to share and know new stuff and new teachers.

Looking forward to seeing you on line :9

[redacted]

Show parent | Edit | Delete | Reply

Figure 9: One of the teachers' posts in the 'getting to know you' forum

3.5.2 During online course procedures

During the online course, the materials were uploaded into Moodle once a week (one topic per week), so the participants could access them when they saw fit. If there were any queries or technical issues, they could contact the online tutor via email or on Skype at the 'online office hours' scheduled for that purpose. Every week the course topics were presented as follows:

- Informative e-mail and introductory video on the online course's Youtube Channel: The online tutor sent the teachers an e-mail presenting the content and giving information about the resources on Moodle. The teachers were also provided with video introductory guidelines for the online course uploaded weekly on the Youtube channel (figure 10).



Figure 10: Online tutor's introductory videos on YouTube

- Work on Moodle (theory-reflection-practice cycle): A weekly outline was posted on Moodle with instructions for the week and a summary of topics discussed. The teachers were required to follow a developmental loop of topic presentation (figure 11), practice (figure 12), individual and group reflection (i.e. blogs and online discussion forum) in the online community during the course.
- Mid-week reminder: In order to encourage the teachers' active participation in the online course, the online tutor sent mid-week reminders. Usually, these emails had a humorous tone, mainly, to foster the teachers' sense of community and comfort during the online course.
- Feedback: Feedback was provided by the online tutor about the practical activities or any question the participants might have. Usually, the teachers communicated with the online tutor via email or the online office hours on Skype.



Figure 11: Online course home page on Moodle

ONLINE TEACHER TRAINING: WEEK 3 PRACTICAL ACTIVITY: CALL ASSESSMENT

Instructions: Revise and explore the online resource given by your tutor and evaluate it considering the principles and criteria for CALL evaluation and task design from last week's session. You can add comments to support your evaluation. Consider the following scale for marking:

0= not applicable 1= low 2=fair 3=satisfactory 4=Excellent

Resource : Blog for language skills development (Reading/writing/listening)

- Online tool: Blog
- Proficiency level: Pre-intermediate
- Objective: develop language skills
- Student profile: Higher education students from an English teaching programme
- Material used to teach modals of advice/suggestions according to course syllabus

CRITERIA	MARK	COMMENT/SUGGESTION
Language learning potential		
Meaning focus		
Learner fit		
Authenticity		
Positive impact		
Practicality		

Figure 12: Practical activity example

3.6 Possible research methods and approaches for this study

3.6.1 Epistemological research approaches

In the field of social research, a research paradigm 'represents a worldview that defines, for its holder, the nature of the "world," the individual's place in it, and the range of possible relationships to that world and its parts' (Lincoln and Guba, 1994, p.107). Therefore, a paradigm provides researchers with procedures and techniques to design their studies and report their findings in a consistent manner. Research paradigms are also guided by concepts of inquiry namely *ontology*, *epistemology* and *methodology*. Ontology has to do with 'philosophical assumptions' (Creswell, Hanson, Plano-Clark and Morales, 2007, p.238) on how reality is viewed. Consequently, the epistemology of a piece of research is the 'philosophical stance' (Creswell, 2003, p.4) linked to knowledge theories (e.g. subjective, objective approaches). Methodology, thus, provides researchers with the context and strategies of inquiry to obtain the knowledge they seek for in their studies (Creswell, 2003).

Research approach	Knowledge claims/paradigm
Quantitative	Positivist, post-positivist assumptions
Qualitative	Constructivist, emancipatory assumptions
Mixed methods (qualitative and quantitative)	Pragmatic assumptions

Table 10: Research approaches and paradigms (Cresswell, 2003)

3.6.2 The Case Study Strategy

Van Lier (2005, p.195) indicates that case studies provide ‘the ability to track and document change (such as language development) over time’. One of the main strengths of case studies is that they can encompass different techniques such as observations, interviews, and narratives, to gather data that can later be helpful to build a strong argument for the focus of the investigation (Creswell, 2007; Dornyei, 2007; Duff, 2012). In CALL research, case studies can be supported by technology as it can provide resources for data collection and analysis.

Dornyei (2007) defines the case study as an approach for qualitative research that aims to describe and explore the reality of a defined object of investigation. He states that apart from individuals (e.g. teachers, learners), cases can be ‘a programme, an institution, an organization, or a community’ (p. 151). Yin defines a case study as ‘an empirical study that investigates a contemporary phenomenon within its real-life context; when the boundaries between the phenomenon and context are not clearly evident; and in which multiple sources of evidence are used’ (Yin, 1988, p.23).

Also, Duff (2008) underlines the importance of the context, characteristics, the different sources for data gathering and analysis in a case study. Additionally, Creswell (2003, 2007) indicates that case studies are part of ethnographic research designs used to develop understanding and examine in detail a specific issue concerning ideas, procedures or people.

Case studies can be exploratory (i.e. searching for patterns), explanatory (i.e. an account of how things happen) and descriptive (i.e. information about characteristics of the object of research), depending of the research objective (Yin, 2003). In addition, investigators can make use of (1) a single case or (2) multiple cases as the issue of interest and analysis (Yin, 2003; Duff, 2008). Regardless what the researcher decides to include in their study must be justified for the objective and design of the investigation. Usually single cases are used for individual cases and multiple cases for comparing information across cases in order to obtain thicker data for analysis.

The weaknesses of case studies are generally related to the researcher's involvement and the subjectivity of the results reported. As case studies investigate processes rather than tangible outcomes (e.g. test results), they could be simply perceived as a descriptive account of facts in a specific context. These constraints can be diminished by having different sources of data and taking measures for instrument and data validation (Denscombe, 2003). Another limitation of case studies regarding subjectivity, which can also be associated to the challenges of design-based research, is that of generalization of findings. As case studies tend to be unique and report results concerning data from a particular context, these might not be representative of all realities. However, despite this limitation, small-scale case studies can produce findings which can be comparable and applicable in wider research contexts. Therefore, it is advisable that robust data are collected, by replicating the case study or having several informants in a case in order to support general assumptions (Duff, 2008; Yin, 2003).

3.6.3 Qualitative, Quantitative and mixed methods research

Cresswell (2014, p. 4) defines qualitative research as 'an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem.' Qualitative research is usually framed upon a constructivist research paradigm as it deals with observations, processes and experiences. In qualitative research, it is possible to use narratives, phenomenology, ethnographies, grounded theory and case studies as methodological strategies (Cresswell, 2003).

Data gathering methods commonly used in qualitative research include interviews, focus group, information from the research context, (e.g. classroom observation) diaries and research journals (Denscombe 2003; Dornyei, 2007). The analysis of qualitative data is usually interpretative and subjective in order to search for patterns to explain a phenomenon.

On the other hand, Creswell (2014) explains that quantitative research has to do with numbers and the testing of theories considering different variables. Dornyei (2007, p. 24) states that quantitative data 'involves data collection procedures that result primarily in numerical data which is then analysed primarily by statistical methods.' Quantitative research usually uses standardized tests in order to make findings objective and non-biased (which might be the case in qualitative research). Thus, positivist research paradigms using experimental research methodologies support quantitative studies.

In mixed methods research approaches, techniques from both qualitative and quantitative research can be used. At first, it might seem that constructivist and positivist paradigms could not be combined due to their opposite nature (objective versus subjective interpretations). Nevertheless, the application of mixed methods can enrich studies in the sense that by applying different methods and data collection sources, the problem of investigation could be observed more comprehensively (Dornyei, 2007; Creswell, 2014). As discussed previously, in design-based research it is strongly recommended to use different methodologies, as they can provide a more holistic view of the findings. In this study in particular, using mixed methods could help to observe in more detail the developmental processes teachers go through as they become CALL competent in the online course.

3.6.4 Qualitative research

3.6.4.1 Interviews

The aim of using individual interviews is to collect first-hand data (Dornyei, 2007) in order to have a deeper understanding of individuals' experiences and views. In addition, Adams and Cox (2008, p. 21) state that 'researchers make use of interviews when they wish to obtain more detailed and thorough information on a topic than might be gleaned from a questionnaire.'

In order to decide whether interviews are relevant for their studies, researchers have to consider if they are appropriate to gather the information sought and if they are worth using in, for example, small-scale projects. Interviews are relevant to use mostly when the researcher wants to obtain perceptions, feelings, information which can be complementary to other methods (e.g. questionnaires). Also, researchers should take into account the practicality of interviews in terms of implementation costs and access to the interviewees (Denscombe, 2003).

Interviews can be structured (i.e. pre-determined questions), semi-structured (i.e. there is flexibility with the questions) and unstructured (i.e. open, non-structured questions). Additionally, interviews can be conducted in groups, which are called 'focus groups'. Here the interviewees are gathered together in usually small groups (6-10) and prompted with questions about the main objective of the research. The researcher only moderates the session. The focus group discussion can be useful for people who do not want to be interviewed individually.

A limitation in interviews is that of the researcher involvement. This can be by either collecting and/or analysing the data. This can have an influence on the reliability of the findings, therefore, measures to minimize the subjectivity of interviews and their analysis should be taken (i.e. having multiple data collection sources).

3.6.4.2 Diaries

In qualitative research, diaries (also called journals) have been considered as a useful research tool to explore data about the description of events and evolution of participants in a research context (McDonough, 1994). Bailey (1990, p. 215) defines diaries as 'a first-person account of a language learning or teaching experience, documented through regular, candid entries in a personal journal'. Dornyei, (2007, p.156) states that 'diaries offer the opportunity to investigate social, psychological and physiological processes within everyday situations'. Thus, they allow the participants to record their own views and thoughts in a space (usually private) without the intervention of the researcher. For example, Moon (2004) indicates that diaries can be an effective learning and research resource as a means to both promote and observe reflective learning.

3.6.5 Quantitative research

3.6.5.1 Questionnaires

Brown (2001, p. 6, cited in Dornyei and Taguchi, 2009, p. 3-4) state that 'questionnaires are any written instruments that present respondents with a series of questions or statements which they are to react either by writing out their answers and or selecting from existing answers.' The purpose of using questionnaires in both quantitative and qualitative research has to do with mainly seeking and measuring demographic data (e.g. background information of the respondents) as well as facts, behaviours and attitudes (Dornyei, 2007). In addition, the effectiveness of questionnaires can be attributed to the rigour with which they have been designed. In order to make the most out of questionnaires and obtain useful data, some considerations should be taking into account in the design process. In general, useful data can be gathered when questionnaires are interesting (i.e. so they are answered), of an appropriate length (i.e. neither too short nor long), and mostly, clear for respondents, thus, ambiguous questions should be avoided (Dornyei and Taguchi, 2009).

Questionnaires are research techniques which can be applied using technology, due to the fact that CMC resources can improve the efficiency of data collection processes in both a cost-effective and timely manner (Denscombe, 2003). With the globalization of the use of asynchronous tools such as emails as means of rapid communication, questionnaires can be easily distributed and responded (e.g. via mailing lists or web links). However, the application of online questionnaires can present limitations. One such limitation has mainly to do with the 'non-response bias' (Boslaugh, 2013, p. 15) as invitations to complete online questionnaires can be effortlessly deleted from email inboxes, particularly, from respondents who have not consented to be part of a study.

3.6.5.2 Data Mining

Buckingham Shum And Ferguson (2011, p.1) state that 'with the unprecedented amounts of digital data now becoming available about learners' activities and interests, from educational institutions and elsewhere online, there is significant potential to make better use of this data to improve learning outcomes.' In this sense, the term data mining (or knowledge discovery in data bases, KDD) can be defined as 'the automatic extraction of implicit and interesting patterns from large data collections' (Romero and Ventura, 2007, p.135). Data mining has been used in business and marketing in order to identify tendencies, however, its application in educational settings is increasingly evolving in order to follow students' behaviours and learning patterns.

3.6.5.2a Educational Data Mining (EDM)

Educational Data Mining can be used in face-to-face learning contexts, for instance, by obtaining students' attendance records, feedback and test results in order to improve their learning experience. However, in online learning, as the face-to-face element might not be present, it is necessary to monitor students by using the data that virtual learning environments can provide. For example, in the VLE Moodle, information from the students' log files can be generated and retrieved in order to examine students' activities, performance and choices (Romero, Ventura and García, 2008). These data can also serve to evaluate

materials, contents and strategies used in online learning which can be helpful for course designers and/or tutors' decision making process when producing or using VLEs. Data mining methods to process online learners' information from virtual learning environments include statistics (i.e. frequencies), visual representation (i.e. graphs), clustering (i.e. grouping), classification (i.e. properties) and association rule mining (i.e. pattern correlation) (Romero and Ventura, 2007; Romero, Ventura and García, 2008; Vialardi et al, 2009; Baepler and Murdoch, 2010; Romero and Ventura, 2013). However, the use of data mining in online learning can pose challenges associated to internet-based collection methods such as ethics and confidentiality. Also, the use of educational data mining could be limited, as researchers might need a certain level of technological competence to manage the information and interpreting large amounts of data.

Educational data mining is in its infancy in social research. In CALL teacher education, for example, techniques from data mining seem to be on the rise. For instance, in Wu, Gao and Zhan's (2014) study (literature review section), Social Network Analysis, which examines people's interactions in collaborative online environments, was applied to examine social presence in a teachers' community of inquiry. Bearing this in mind, data mining methods for gathering information, either from social networks or virtual learning environments (e.g. Moodle), could be further included in online learning and CALL teacher education research contexts in order to track learning and/or training development.

3.6.6 Internet-based data collection instruments

The benefits of using the Internet as a source for data collection have been acknowledged by researchers, particularly in social studies (Denscombe, 2003; Creswell, 2012). Benfield and Szlemko (2006) explain that the use of the Internet as a research tool is in development, as its use to conduct studies requires researchers to be competent not only about methodologies, but also about technologies to gather data (e.g. knowledge about computer programming). Nevertheless, as technological resources advance, it is possible for researchers to

transfer techniques from face-to-face research methods (e.g. interviews, focus groups) into online research using day-to-day technology (e.g. emails).

Some of the advantages of using internet resources to gather data have to do mainly with reduction of cost (i.e. surveys can be sent via email) sample size (i.e. internet can easily help reach large samples) recruitment (i.e. as seen in this study, for example, Facebook was used to recruit participants), data entry (i.e. data can be registered as participants respond an online survey) and time (i.e. faster research procedures). Nonetheless, gathering data using the internet can present potential problems, just as in face-to-face research (Benfield and Szlemko, 2006).

For instance, issues regarding ethics, privacy and confidentiality can be problematic on the Internet (Brownlow and O'Dell, 2002; Hookway, 2008). Due to the easy access and public nature of the Internet, researchers have to ensure participants that their data will not be available on the web. One strategy to minimize this might be the use of resources that are only available to participants. For example, create passwords or links associated only to those involved in the research project. In this sense, the participants' technological skills can also undermine the use of the internet to gather data. If they do not know how to use an online survey, for instance, it might be difficult for them to respond it and might lead to the participant withdrawal. If this is the case, researchers are to provide the necessary information and/or training for their participants before using the internet to gather data.

3.6.6.1 Online discussion forums

The use of online discussion forums for qualitative research has gradually increased with the advent of technology, due to the fact that they promote easy access, communication and provide authentic data (Denscombe, 2003; Sade-Beck, 2004). DeWever, Schellens, Valke and Van Keer (2006) suggest that analyzing asynchronous messages in online forums, for example, can be useful to observe individual and group collaboration in online communities.

3.6.6.2 Blogs

When gathering qualitative data online, blogs are considered the equivalent of diaries (see 3.6.4.2). Hookway (2008, p.92) suggests that blogs should be part of today's 'social researcher's toolkit' and states that they can be used as a data collection strategy because 'blogs take the form of online diaries or what I call 'self-narratives', where private and intimate content is posted in daily, monthly and yearly snippets.' (Hookway, 2008, p. 93-94). In the literature review of this thesis it was explained how Wopeiris, Sloep and Poortman (2010) used blogs in their study about reflection in a teacher training course. Thus, blogs can also be a useful way to gather and store data using internet resources.

3.6.7 Data analysis for qualitative data

3.6.7.1 Content Analysis

Weber (1985, p.117) defines Content Analysis as a 'research method that uses a set of procedures to make valid inferences from text.' Similarly, Bryman (2012, p.289) states that 'Content Analysis is an approach to the analysis of documents and texts (which may be printed or visual) that seeks to quantify content in terms of pre-determined categories and in a systematic and replicable manner.' Therefore this data analysis method allows researchers to interpret written information in order to explain a research phenomenon.

According to Berg (2007, p.258), content analysis is part of the interpretative-social research strategies and 'provides a means by which to study processes that occur over a long periods of time or that may reflect trends in a society'. He also points out the usefulness of Content Analysis when dealing with different kinds of data (i.e. interviews, archives, newspapers). Hsieh and Shannon (2005) describe three main types of content analysis which serve as a base to organize data depending on the focus of research:

- Conventional: Researchers work with raw data and allow categories or themes emerge naturally as the analysis progresses.
- Directed: Researchers work with pre-defined categories of analysis in order to confirm or contribute to existing theoretical principles or models.
- Summative: Researchers count and quantify occurrence of words used in a certain context in order to analyse their frequencies in written messages.

In order to perform content analysis and infer reliable data, researchers should develop a coding scheme which allows them to process and analyze the information (Hsie and Shannon, 2005). Bear in mind that data can be coded by software or manually depending on the research design or available data. Weber (1985) suggests the following stages for data processing:

- Definition of unit of analysis: This can be a word, sentence, theme, paragraph or text.
- Definition of categories: This allows researchers to group the information by assigning different labels.
- Test coding on sample of text: An important step to test if the categories are useful for the analysis.
- Assess accuracy: This has to do with establishing criteria for coding and analysis. This is mostly relevant if human coders are used in order to promote consistency.
- Revise the coding rules: This helps to assure reliability of coding process and data
- Re-test coding on sample of text: This confirms the coding criteria
- Code all the text: Apply the coding criteria to data analysis
- Assess achieved reliability or accuracy: Apply reliability techniques to validate data. If information is processed manually, having more than one human coder (e.g. inter-rater reliability) is suggested.

Once this process is completed, investigators can start managing the data in order to meet the needs of their research design and questions.

Content analysis can be very useful to explain research phenomena from a naturalistic point of view. However, this same characteristic makes it subject to the coder/researcher criteria and coding system, decreasing the levels of data reliability (Bryman, 2012). This is why processes of validation are so important in content analysis. Also, in order to tackle subjectivity and not only rely on qualitative data, quantitative analysis can be applied. In this sense quantitative content analysis, or the quantification of the content of textual communication (Rourke, Anderson, Garrison and Archer, 2001a, 2001b), can be useful to complement the exploration of themes emerging from the qualitative codification.

3.6.8 Data analysis for quantitative data

3.6.8.1 Descriptive Statistics

In order to analyse quantitative data statistical procedures such descriptive statistics can be applied. Descriptive statistics are defined as ‘the use of statistical and graphic techniques to present information about the data being studied’ (Boslaugh, 2013, p. 83). According to Lowie and Bregjite Seton (2013, p.25), ‘descriptive statistics are used to describe patterns of development in longitudinal analyses’. Dornyei (2007) also states that descriptive statistics are useful to explain findings by providing information on the tendencies (i.e. frequencies and percentages) data show. Statistical software such as SPSS can be used to process qualitative data and run procedures.

3.7. Research methodologies and techniques in online teaching and learning

As seen in the literature review of this thesis, there is a significant body of research which focuses on investigating online learning and communities. In most studies, the community of inquiry framework (Garrison, Anderson and Archer, 2000) has been used in order to explore social, cognitive and teaching presence. However, the criticisms of the Garrison and colleagues’ model (Xin, 2012) revolve around the effect of these dimensions in online learning and the arbitrary interpretation of the codes that the framework provides. Therefore, it has been suggested that

methods from both qualitative and quantitative research should be included in online learning research (Arbaugh et al, 2008). In table 11, it is possible to observe that the case study strategy has been used to explore the community of inquiry qualitatively.

The use of questionnaires from quantitative research has also been popular in Col investigations, nevertheless, mixed methods which complement the analysis of social, cognitive and teaching presence is necessary. In terms of analysis, Content Analysis and Thematic Analysis have been applied to examine textual interactions in online learning communities.

Focus	Methods	Techniques	Analysis	Reference
Cognitive presence	Quantitative	Questionnaire	Statistical analysis	Garrison and Cleveland-Innes, 2005
Cognitive, social, teaching presence	Quantitative	Survey	Statistical analysis	Garrison, Cleveland-Innes and Shing Fung, 2010
Social presence	Qualitative: Case study	Questionnaires, interviews via chat, asynchronous group discussions.	Thematic analysis, Content analysis	Kerhwald, 2008; Borup, West and Graham, 2011; Hauck and Warnicke, 2012.

Table 11: Research methodologies in online teaching and learning

3.8 Research Methodologies and techniques CALL teacher education

As with online learning and the Community of Inquiry framework (Garrison, Anderson and Archer, 2000), in teacher education in CALL, qualitative, quantitative and mixed methods studies have been conducted, mostly, using case studies (see table 12). Also, the use of questionnaires, interviews and CMC resources (e.g.

blogs, discussion forums) predominate as data collection techniques. For data analysis, statistics to process quantitative data and the exploration of written information through Content or Thematic analysis are also commonly conducted. Nonetheless, it has been suggested (Kessler, 2007; McNeil, 2013) that questionnaires are not sufficient and that teachers' CALL skills should be qualitatively observed in context.

Focus	Methods	Techniques	Analysis	Reference
Teachers' attitudes towards CALL	Quantitative	Survey	Statistical analysis	Kessler, 2007
Teachers' confidence in CALL	Qualitative	interviews and records of classroom CALL use.	Coding, thematic analysis	Kessler and Plakans, 2008.
Teachers' experiences in CALL	Qualitative	Surveys and follow-up interviews.	Thematic analysis	Egbert, Paulus and Nakamichi, 2002.
Blended/Online language teaching skills	Qualitative: Case study	Interviews, questionnaires	Coding themes	Hampel and Stickler, 2007
Teachers' CALL skills and knowledge	Qualitative and quantitative: exploratory case study	Surveys, reflective journals, teaching projects, online discussion forum posts, questionnaires	Numerical analysis, Social Network Analysis, Thematic analysis	Son, 2002; Levy, Wang and Chen, 2006; McNeil, 2013 Wu, Gao and Zhan (2014),

Table 12: Research methodologies in CALL teacher education

3.9 This Study

This investigation used the exploratory case study methodology as a main strategy for research and applied mixed methods techniques to gather and analyse the data provided by the L2 in-service teachers (also referred to here as the ‘participants’) in the online course. Thus, the case in the study of this thesis was the teachers. In particular, how they developed their CALL skills and knowledge for online teaching (which included their actions, choices and possible changes) in an authentic online training and development course for CALL. The case study strategy allowed this researcher to have direct access to participants and collect and analyse data from a variety of sources. The table below (table 13) shows a summary of this case study’s research design.

Research question	Data Collection instrument	Data Analysis method	Unit of Analysis
1 (attitudes towards CALL, prior CALL and online teaching knowledge and skills)	Online questionnaire (Google docs) Online Interview (Skype)	Descriptive statistics (frequencies) Content Analysis	Numerical data (individual information). Common issues from inductive analysis (individual)
2 (Developmental process in the online community)	Online teacher training and development course for CALL The teachers’ log files on Moodle	Content Analysis based on the Community of Inquiry Framework (Garrison et al, 2000) Quantification (Frequencies)	Social, cognitive and teaching presence (individual/group textual information) The teachers’ choices and actions (individual, group, online tutor textual/numerical information)
3 (Transformation)	Online questionnaire (Google docs)/ Online Interview (Skype)	Descriptive statistics (measures of central tendency) Content Analysis based on the Transformative education scale for distance learners (Motteram, 2006)	Numerical data (individual information). Changes upon online course completion (individual/group)

Table 13: Data collection and analysis summary

3.9.1 Epistemological approach in this case study

This case study was framed within a socio-constructivist paradigm, as constructivist researchers observe ‘processes of interaction among individuals’ (Creswell, 2003, p.8) in order to find patterns to build up theoretical and practical assumptions. In L2 teacher education in CALL, researchers have suggested that there is a need to conduct studies based on research paradigms (constructivism) linked to educational paradigms from general teacher professional development (i.e. socio-constructivism) in order to ‘build a broader understanding of the field of teacher education for CALL and its relationship to wider teacher education literature’ (Motteram, 2012, p.2). Also, socio-constructivist studies should go beyond investigating *only* the design of teacher training courses (i.e. the structure, organization and content) and focus on examining teachers’ experiences as to discover how they develop meaningful pedagogical and technological CALL competence.

3.9.2 Data Collection techniques in this case study

3.9.2.1 Pre/Post course online Interviews (via Skype)

The teachers were interviewed before and after the course (figure 13) in order to seek information about their previous experiences and views of technology, whether and how their developmental process took place (e.g. actions, choices), and identify possible changes in their CALL skills and knowledge for online teaching.

The pre and post online course interviews (see appendix B) contained pre-established questions. For instance, in the pre-course interview, the teachers were asked *how much do you know about the technological resources available for language teaching?* Also, in the post-course interview one of the questions was *how did you develop your CALL technological/pedagogical skills for online teaching during the online course? Elaborate on how you interacted with peers, the materials and activities.*

Nevertheless, although the interviews were semi-structured, there was room for flexibility, so the teachers were encouraged to further develop topics that they considered important to discuss. In both pre-and post-course interviews, the teachers were given the option to carry out the interview either in English, their second language (L2), or Spanish, their native language (L1). All the interviewees chose to be interviewed in English, thus, there was no need for translation for post hoc data analysis.

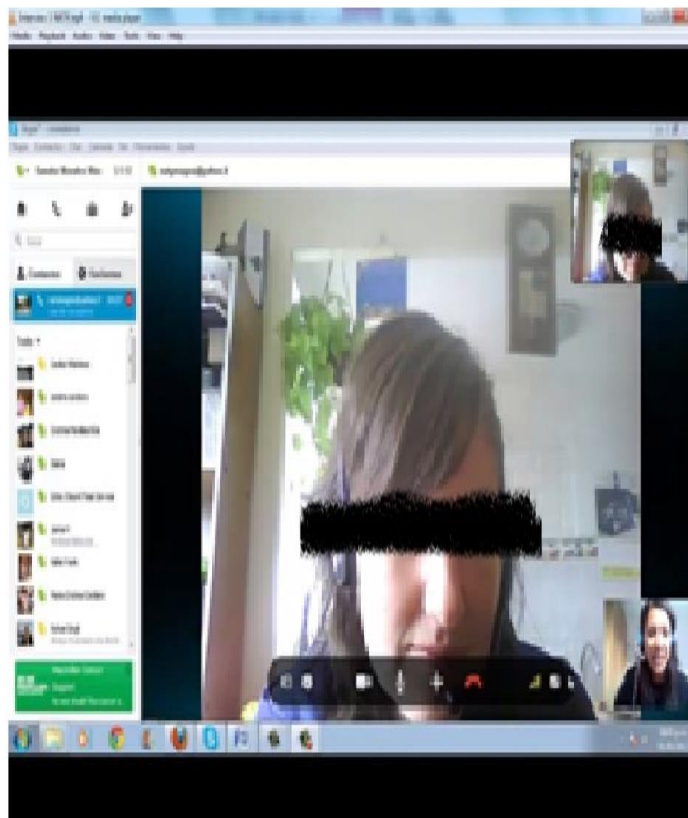


Figure 13: Online interview on Skype

3.9.2.2 Online discussion forum posts

As part of the online course, reflection was encouraged among the L2 teachers and one of the resources they used to reflect collaboratively in the online community was the online discussion forums on Moodle (figure 14). During the 8 weeks that the online course lasted, the teachers engaged in 8 discussion forums regarding different topics within the course. As a result, all the entries (n=81) that the teachers posted were observed. In this study, a single word, sentence or paragraph (usually from 1 to 200 words) was considered as an entry or post. As for the interviews, it is important to point out that the online discussions throughout the online course took place in English. One of the advantages of using this source of data is the authenticity of the information, as what was later analysed was what the teachers actually wrote. Also, this facilitated the analysis, as there was no need for transcription or translation in the online forums. Content Analysis was used as a means to analyse the textual data in the online forums. The Community of Inquiry model (Garrison, Anderson and Archer, 2000) provided the codes to analyse cognitive, social and teaching presence. Further discussion on the data analysis procedures will be presented later in this chapter.

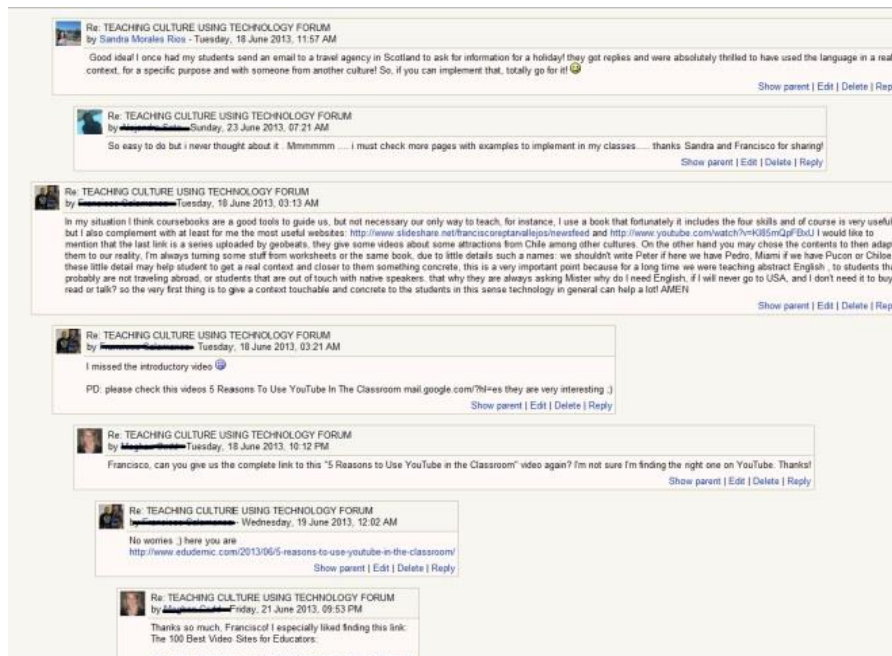


Figure 14: Discussion forum thread on Moodle

3.9.2.3 Blog posts

In this case study, individual reflection was also promoted in the online course and blogs (figure 15) were used as a space where teachers could express their personal views on the weekly contents. For data collection purposes, the teachers' entries in the blogs (n=27) allowed this researcher (and online tutor) to keep a continuous record of the teachers' progress during the online course, as well as to examine the teachers' views and possible changes during and after the investigation. The observation of these blog entries was useful for examining individual aspects of the teachers' development to support consistency of the data later analyzed alongside the other data collection techniques. Cognitive presence in the blogs was explored using Content Analysis and the codes from the Community of Inquiry framework (Garrison, Anderson and Archer, 2000). A more detailed explanation of the analysis procedures will be discussed later in this chapter.

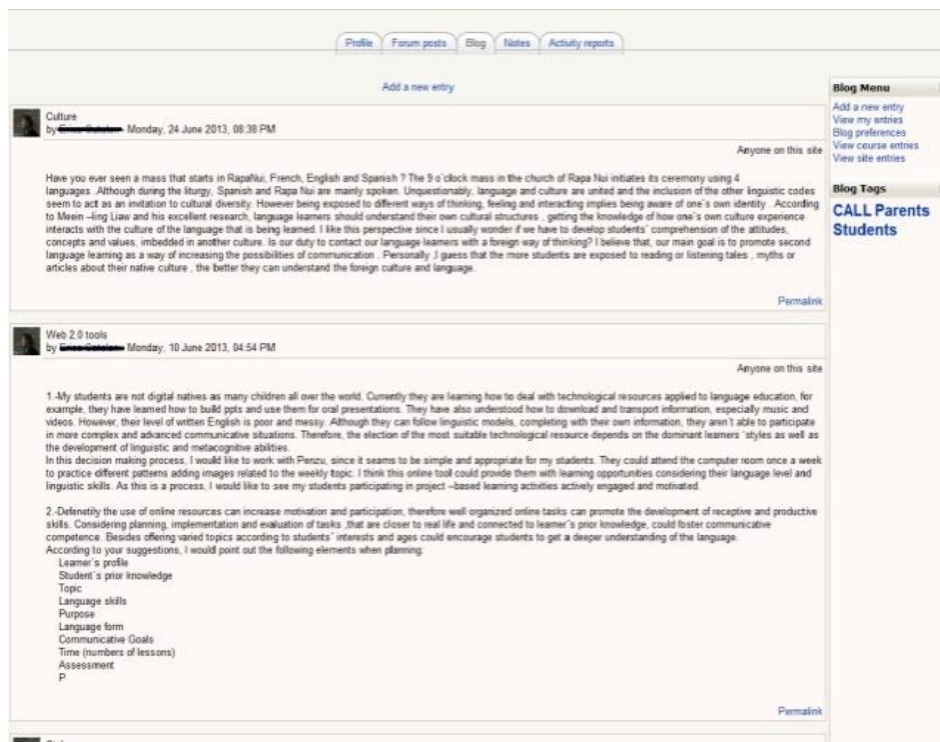


Figure 15: Easter's blog entries

3.9.2.3 Why focus groups were not used as qualitative data collection technique in this case study

In a socio-constructivist case study such as the one in this research, it would have been natural to include focus groups as one of the qualitative data collection methods. Particularly, due to CMC resources, which nowadays are seen as providers of easy access to global communication, were used as primary data collection tools. For this reason, online focus groups were initially considered for this research design. Furthermore, attempts were made to set up both pre and post online course focus groups on Skype. Nevertheless, the use of focus groups in this case study was not possible due to two main reasons (1) the instant features of synchronous online resources and (2) the teachers' high workload and for the most part, time availability. Despite this researcher's and the teachers' efforts the practical implementation of online focus groups to gather valid data for this case study (i.e. with at least three teachers per group) was unsuccessful. Having said that and considering the fundamental importance of focus groups in qualitative research, this researcher still sees their use as a data gathering method for interpretive investigation in CALL research where this proves to be feasible.

3.9.2.4 Online Questionnaires

In this case study, questionnaires were used as a measure in order to tackle issues regarding the subjectivity of the qualitative data. The main objective of this investigation was to obtain and interpret data about the teachers' developmental processes when gaining CALL competence for online teaching in an online course, therefore the case study strategy was the appropriate choice to do so. Nevertheless, it was this researcher's concern to provide valid data and reliable findings.

It is important to clarify that it was not this study's aim to 'test' (what Dornyei and Taguchi (2009, p.4) describe as 'discovering how well someone can do something.') the teachers' CALL skills and knowledge. For larger case studies, a test of CALL skills and knowledge could, and perhaps should, be included to measure their learning. However, due to the prototypical and, particularly, volunteer nature of this case study, a competence test was not considered.

In this case study, pre and post course questionnaires (Appendix C) were designed by this researcher. The instruments were founded upon existing surveys in CALL research about attitudes towards technology, CALL pedagogical and technological skills, pedagogical practices, professional development needs and the teachers' views on the online training and development course (see table 14). The supporting sources used to produce the questionnaires are shown in table 15. The questions in both pre (32 items) and post course questionnaires (43 items, as an additional section of 11 items was added in the post course questionnaire about the teachers' experiences in the online course) were evaluated on a four (4) point Likert scale basis. As according to Boslaugh (2013, p.18) 'questions using Likert scale typically present a statement and subjects are invited to choose their response to it from an ordered , odd numbered set of choices (most often five but sometimes seven or nine.' However, even number point scales can also be used in questionnaires in order to lower the amount of neutral responses (Sampson, 2003; Boslaugh, 2013).

In this case study, this response scale was applied: 1) Totally agree, (2) agree, (3) disagree and (4) totally disagree. A 'neither agree nor disagree' option was discarded in these questionnaires so as to encourage the respondents to make specific choices for more accurate data. One of the questions in the questionnaires was *I am able to adapt technological resources (i.e. webpages, blogs) to implement activities my for my language learners to foster language skills (speaking/listening/reading/writing)*. Also, multiple choice alternatives were included in questions such as *what language learning approaches do you use in your L2 class?* Here, the teachers had to select more than one option if applicable. As these questionnaires were not a standardized tool, they were examined by two external assessors. Changes were made based upon their comments in order to improve the instrument. Also, Pre and post questionnaires were trialled in a pilot study (later in this chapter) and amendments were made accordingly.

The pre-and post-course questionnaires were distributed online via the Google Docs application (<http://www.google.co.uk/docs/about/>) on Gmail (<https://mail.google.com/>). This was very practical as the questions were entered on a website which created the questionnaires and then sent the link around to the teachers via email. The responses were submitted via Google docs as well. Another advantage of Google docs is that the responses can be viewed in different file formats (e.g. Pdf, Excel). For this case study, the teachers' data were downloaded on an excel spreadsheet and then coded for processing of the statistical software SPSS (later in this chapter). The application of online questionnaires in this study was economical and accessible as the teachers were geographically removed from this researcher. Additionally, it was an effective way to obtain individual quantitative data from the teachers, particularly as with the other methods for data gathering, they were either interacting with one another and/or the online tutor. By responding to questionnaires individually, the teachers here had the opportunity to reflect privately and provide data that they might not have wanted to disclose publicly in the online community or in the online interviews.

SECTION	PRE-COURSE ONLINE QUESTIONNAIRE	POST-COURSE ONLINE QUESTIONNAIRE	NUMBER OF ITEMS
The teachers' demographic information.	YES	YES	6
The teachers' attitudes towards the use of technology for language teaching.	YES	YES	5
The teachers' technological skills for language teaching.	YES	YES	9
The teachers' pedagogical skills for language teaching	YES	YES	13
The teachers' needs regarding teaching with technology.	YES	YES	5
The teachers' experiences in the online teacher training and development course	NO	YES	10

Table 14: Pre-and Post-course online questionnaires sections

Construct	Supporting Source	Pre-questionnaire	Post-questionnaire
Attitudes towards technology for L2 teaching and learning	Kessler, 2006, 2007; Kessler and Plakans, 2008.	YES	YES
Technological skills for L2 teaching in face-to-face and online environments	Hampel and Stickler, 2005; Kessler, 2006, 2007; Kessler and Plakans, 2008; Compton, 2009.	YES	YES
General/CALL Pedagogical knowledge and practices in L2 teaching (face-to-face/online)	Hampel and Stickler, 2005; Kessler, 2006, 2007; Kessler and Plakans, 2008; Compton, 2009.	YES	YES
Pedagogical and technological needs for L2 online teaching	Kessler, 2006, 2007; Kessler and Plakans, 2008; Borg, 2011; this researcher.	YES	YES
Online training and development course for CALL views	This researcher	NO	YES

Table 15: Supporting sources for the design of pre-and-post course questionnaires

3.9.2.5 Moodle Log Files

Another source of data in this study that was useful for observing the teachers' developmental process in the online course was the log files from Moodle itself. One of the benefits of using a VLE like Moodle is that it generates reports containing user-produced data (group and individual). This is one of the important features that VLEs possess, as data can be tracked, collected and analysed in order to improve the quality of instruction (see the data mining section in this chapter).

In this case study, the teachers' working path and activities in the online course were tracked using the Moodle reports. These reports provided evidence mainly of the teachers' choice of materials and log in frequency. This was an indicator of what resources the teachers used the most during the course and also their work pace, which was useful to monitor their participation. The reports on Moodle were generated in an Excel spreadsheet, so the data could be filtered and processed to obtain results.

3.9.3 Data analysis methods

3.9.3.1 Content Analysis

This case study was designed using a socio-constructivist research paradigm. In order to be consistent with this rationale, the analytical method which guided the analysis of the qualitative data (i.e. online discussion forums, blogs and interviews) was Content Analysis. This data analysis method was used in order to identify the teachers' views, actions, choices, preferences and their possible changes in the online training and development course for CALL. In order to complement this qualitative interpretive analysis, descriptive statistics were applied to the quantitative data from the pre and post course questionnaires using the statistical software SPSS. The L2 teachers' log files from Moodle regarding their work in the platform were also quantified.

As stated previously, data from 8 teachers from were analysed. The Community of Inquiry model (Garrison et al, 2000) was used as a means to analyse qualitative data of the teachers' developmental processes in the online course by looking at social, cognitive and teaching presence in their discussion forums posts and cognitive presence in their blogs. In addition, in order to examine the teachers' changes (i.e. transformation) after the online course, data from their interviews were analysed using the coding scheme from Motteram's (2006) Transformative Education Scale for Distance Learners. The coding elements in this instrument are closely linked to the transformative learning theory stages (see p.24) so it facilitated the identification of L2 teachers' pre and post online course changes.

In general, Content Analysis has been used to examine online discussions in formal academic contexts to report on behavioural aspects and changes in online learners. This is because it provides tools to find, infer and understand interactions in mainly asynchronous online contexts (Pawan et al, 2003; Hauck and Warnecke, 2012). For example, Henry (1992) has investigated cognitive knowledge by identifying themes using Content Analysis. Newman et al (1995) researched critical thinking with Content Analysis and Gunawardena et al (1997) applied a socio-

constructivist approach and the community of inquiry principles to examine texts and find recurring themes.

In this case study, the data collected from the participants' blogs and their comments in the discussion forums in the online community were explored using the three types of Content Analysis discussed in section 3.6.7.1. Conventional content analysis was used in pre-course interviews. This deductive analysis allowed this researcher to infer recurring topics found in the data about the teachers' views about language teaching with technology. Also, directed and summative Content Analysis was applied in the online community regarding the teachers' online discussion and blog posts. The indicators from the Community of Inquiry framework (Garrison et al, 2000) were applied to particularly focus on how participants progressed and interacted in the online community considering social, cognitive and teaching presence in order to track their development.

Directed and summative Content Analysis was also used in the post-course interviews. The coding used for these interviews was based upon the Transformative Education Scale for Distant learners (Motteram, 2006), as its indicators helped to identify and inform the teachers' possible changes upon online course completion. In the sections below, a detailed account of this process is shown.

3.9.3.2 Why not other qualitative data analysis methods

In language teaching and learning qualitative research, researchers have used a range of analytical methods depending on the focus of their research. One method commonly used for data analysis in qualitative research is Thematic Analysis (Bryman, 2012). This method could be comparable to Content Analysis, as they are both part of an interpretative paradigm used to find emergent themes and patterns from the data. However, Content Analysis contains, within its qualitative form of analysis, an additional element of 'quantification'. The fact that Content Analysis can be summative, for example, allows researchers to examine not only themes but also their frequency in order to draw assumptions. For the analysis of online communities, Content Analysis has been widely used in combination with the Community of Inquiry framework, as the latter provides the categories and

indicators which facilitate the examination of the content and occurrences of cognitive, social, and teaching presence in virtual environments.

On the other hand, studies which focus mainly on spoken interaction in face-to-face and online classrooms using synchronous CMC resources (e.g. chat), have used analytical methods such as Discourse Analysis (DA) and Conversation Analysis (CA). Discourse Analysis, generally the analysis of language features and language use (Schiffrin, Tannen and Hamilton, 2001), has been applied in CALL mainly to observe patterns of negotiation in either learner-learner and/or learner-computer interaction (Chapelle, 1990; Vandergriff, 2006, Liang, 2010). In teacher education in CALL in particular, DA had not been considered as a data analysis method until recently when Kessler (2010) explored pre-service teachers' spoken and written dialogues in a CALL module in order to identify their perceptions of CALL.

Additionally, Conversation Analysis, which 'studies the organization and order of social action in interaction' (Richards, Ross and Seedhouse, 2012, p.38) has not been commonly used in CALL. However, researchers in the field have considered it as analytical approach in some of their studies. One example of a CA in CALL can be found in Negretti (1999). In her study, she used CA to investigate the structure and 'machinery' (Negretti, 1999, p. 76) of the conversations between English native-speakers and non-native speakers learning English in a synchronous chatroom.

The focus of the case study presented in this thesis was not particularly concerned with the natural organization of the teachers' discourse and talk, but rather its content in the online community. Thus, the analytical framework of the investigation did not include DA or CA. Nevertheless, as the use of synchronous, and asynchronous, CMC resources is growing as a means to support language learning and teaching, the use of DA and CA in CALL research is seen as promising.

3.9.4 Data Analysis procedures

In order to analyse the data from the participants' development in the online community, the following procedures were conducted:

3.9.4.1 Pre-course online interviews analysis

A total of 16 online interviews (pre-course=8, post-course=8) of approximately 40 minutes each allowed this researcher to organize and organize the data manually. Due to the small-scale nature of this case study, no software for coding qualitative data was used for analysis (e.g. Nvivo). Each of the online interviews were watched and listened to several times during the analysis process. Relevant data provided by the teachers were transcribed (without any transcription conventions, as necessary for example in Conversation Analysis) in order to identify and compare information using Content Analysis.

For the pre-course online interviews, conventional Content Analysis was used as a means to analyse the data and deduce topics regarding the teachers' prior CALL skills and knowledge, views and experience on language teaching with technology and professional development in CALL. Their technological and pedagogical needs and also their own questions and concerns about the online course were also considered in the analysis. As indicated earlier one of the questions in the pre-course interview was *how much do you know about the technological resources available for language teaching?* Figure 16 shows an example of the analysis process for the pre-course online interviews. On the left hand side, it is possible to see a list of issues that the teachers pointed out in the interviews. On the right hand side, these issues were categorized and grouped by this researcher in order to narrow down the data.

COMMON THEMES ABOUT THE ONLINE TRAINING TO DEVELOP CALL COMPETENCE (for discussion)
 Descriptive themes./free codes linked to the focus of research

1. Knowledge about how to apply resources	Comment [SMR1]: Development
2. Knowledge about why apply specific resources	Comment [SMR2]: development
3. Learn more (probably due to changing nature of resources)	Comment [SMR3]: attitude
4. Positive attitude (importance of technology for better learning)	Comment [SMR4]: attitude
5. Prior knowledge about language learning (link to technology use, importance of technology)	Comment [SMR5]: language pedagogy
6. Learning to refine skills	Comment [SMR6]: development
7. 'correct' current practices to improve language teaching	Comment [SMR7]: development
8. Relevant contents on training	Comment [SMR8]: development
9. Time (management, learning)	Comment [SMR9]: challenge
10. Teachers' involvement in the design of curriculum (which usually does not include how to use technology)	Comment [SMR10]: pedagogical challenge/concern
11. Learners as the main beneficiaries of competent teachers in technology	Comment [SMR11]: pedagogical practice
12. Online training course as a model (to apply activities with students and teacher training)	Comment [SMR12]: development/material
13. Forum as a resource to increase pedagogical skills (learning with/from others)	Comment [SMR13]: development/practice
14. Access to options (resources)	Comment [SMR14]: development/material
15. Learning theory as a foundation for appropriate application of technology with L2 learners	Comment [SMR15]: development/course design
16. Importance of constant/continuous learning (teach the teachers to learn, normalize autonomous learning)	Comment [SMR16]: continuous professional development
17. Unnoticeable distance learning nature of the course (ubiquitous learning, time management, needs covered)	Comment [SMR17]: development/course design
18. Theory of the course was simple, effective and covered the necessary knowledge, good short overview	Comment [SMR18]: development/material
19. Simplicity/usefulness of the materials (how much is enough? How much is too much?)	Comment [SMR19]: development/material
20. Creativity (most teachers are creative but with technology is more difficult. After the course this improved)	Comment [SMR20]: changes
21. Awareness of resources, options, procedures, students' profile	Comment [SMR21]: changes
22. Confidence (lack of it before the course, enhanced after the course)	Comment [SMR22]: attitude+change
23. Teaching style (reinforced or sometimes changed after the course. More 'digital teachers')	Comment [SMR23]: change
24. Use of technology to increase students' motivation and interest	Comment [SMR24]: attitude
25. Online community as a means to support learning: ideas, interests. Asynchronous communication helps to constant contribution and record.	Comment [SMR25]: development/course design
26. Tutor as essential part of the success of the course and participants' development	Comment [SMR26]: development/course
27. The course itself as a repository of activities but could be improved by having more activities	Comment [SMR26]: development/course

Figure 16: Pre-course interviews content analysis

3.9.4.2 Post-course online interviews analysis: The Transformative Education Scale for Distance Learners (Motteram, 2006)

For the analysis of the post-course online interviews, directed Content Analysis was used to classify the data given by each teacher regarding their developmental processes of CALL skills and knowledge for online teaching in the online training course. For example, one of the questions was *how did you develop your CALL technological/pedagogical skills for online teaching during the online course? Elaborate on how you interacted with peers, the materials and activities.*

The analytical instrument which provided the coding scheme was the Transformative Education Scale for Distance Learners (Motteram 2006). This scale (see table 6) was considered as an appropriate tool to explore the teachers' responses in the post- course online interviews as part of the eclectic methods for analysis used to interpret the information more accurately. As in the pre- course interviews, the data was observed and listened to several times by this researcher and information corresponding to the coding indicators were transcribed and categorized. Figure 17 shows an example of the pre-course data analysis process.

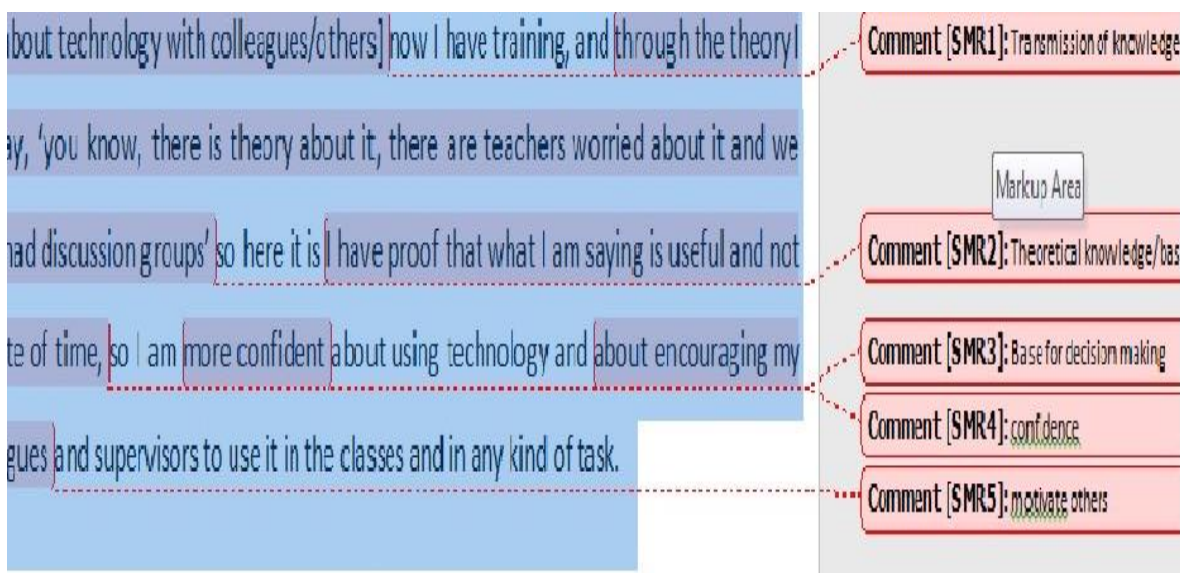


Figure 17: Post-course interview content analysis

3.9.4.3 Community of Inquiry Framework: Social, cognitive, teaching presence (Garrison et al, 2000)

Each week, the L2 teachers were presented with CALL-related topics and materials (e.g. mobile learning) which they had to reflect upon and discuss in online forums and blogs on Moodle. In the online forums, discussions were initiated by the online tutor or the teachers. For the blogs, the online tutor suggested questions for reflection, but the main idea was that the teachers managed their own blogs.

For data analysis purposes, all the teachers' posts in the online forums (n=81) and blogs (n=27) were read line by line by this researcher repeatedly. Cognitive, social and teaching presence were analysed within the posts in the online discussion forums. In the teachers' blog posts, where individual comments were written, only cognitive presence was explored. The data for cognitive, social and teaching presence were coded and counted (i.e. as a means to observe the frequency of these dimensions) according to the categories and indicators (See Table 13) from the Community of Inquiry Framework (Garrison et al, 2000).

3.9.4.3a Cognitive Presence

Online Discussion Forums Analysis:

In order to identify cognitive presence in the online community, the posts made by the 8 teachers were considered as the unit of analysis. Here, the teachers' posts ranged from 3 to 200 words on average. For the analysis of each discussion forum post, Content Analysis was applied. The analysis for cognitive presence considered a total number of 81 posts, without taking into account the online tutor's posts, from eight 8 online discussion forums in total. The examination was conducted manually (figure 18) by reading each post in order to observe the teachers' CALL skills and knowledge development through cognitive presence as an indication of critical reflection (i.e. triggering events, exploration, integration and resolution).

Blogs Analysis:

As the teachers' blogs were an individual space where they recorded their thoughts, the posts on their blogs (Total=27) were only examined from a cognitive presence perspective. The procedure was the same described for the online discussion forums. In table 16, it is possible to observe the indicators from the Community of Inquiry Framework used to identify cognitive presence in the online discussion forums' posts.

Phase	Descriptor	Indicator
Triggering event	Evocative (inductive)	Recognize problem, puzzlement.
Exploration	Inquisitive (divergent)	Divergence, information exchange, suggestions, brainstorming, intuitive leaps.
Integration	Tentative (convergent)	Convergence, synthesis, solutions.
Resolution	Committed (deductive)	Apply, test, and defend.

Table 16: Cognitive presence indicators for forums and blogs analysis. Source: Garrison, 2011, p. 61

Descriptor	Indicator
JM 4	ENTRY: 1
Participant's posts	<p>Entry 1: I remember once I went to a training from the government and there was an Argentinian professor, Analia Kandel, and she introduced us to edmodo, a friendly platform very similar to facebook, but at the same time more confident for teacher, students and parents, obviously this has academic purposes, you can chat, post, link, upload, organize meetings, assessment and so on, all of this under supervision of adults. In that moment I was amazed by edmodo due to nowaday we can not avoid social networks in education because we can deny that our students are connected most of the time to them even in class) so why don't we adapt this to them? the format is very similar, but to get a deeper contact with it I had to watch many tutorial in youtube, and they were very useful, now I'm using edmodo with some of my workshops, I strongly invite you to try, it's funny and you can meet lots of colleagues and people related to education.</p> <p>http://www.edmodo.com/home#/</p> <p>http://www.youtube.com/watch?v=bMThesvG1Lg</p>

Comment [SMR44]: exploration/experience

Comment [SMR45]: exploration/experience

Comment [SMR46]: integration/justification

Comment [SMR47]: puzzlement

Comment [SMR48]: exploration/information exchange

Comment [SMR49]: integration/suggestion

Figure 18: Online discussion forum post analysis coding

3.9.4.3b Social Presence

Online Discussion Forums Analysis:

The teachers' online discussion forum posts (n=81) were analysed from a social presence perspective using Content Analysis as well. The objective of analysing social presence was to better understand how the online community was built up in order to promote the teachers' development of CALL skills and knowledge. For the analysis of social presence the categories shown in table 17 were considered to identify affective, open and cohesive communication.

Category	Indicators	Definitions
Affective	Expressions of emotions Use of humour Self-disclosure	Conventional expressions of emotions, or unconventional expressions of emotions, includes repetitious punctuation, conspicuous capitalization, emoticons. Teasing, cajoling, irony, understatements, sarcasm. Presents details of life outside class or expresses vulnerability
Open Communication	Continuing a thread Quoting from others' messages Referring explicitly to others' messages Asking questions Complementing Expressing appreciation Expressing agreement	Uses reply feature of a software instead of creating a new thread. Using software features to quote others' entire message or cutting and pasting selections of others' messages. Direct references to contents of others' posts. Students have questions of other students or the moderator. Complimenting others or contents of others' messages. Expressing agreement with others or content of others' messages.
Cohesive	Vocatives Addresses or refers to group using inclusive pronouns Phatics, salutations	Address or referring to participants by name. Addresses the group as 'we', 'us', 'our', 'group'. Communication that serves a purely social function; greetings, closure.

Table 17: Social presence for forums analysis. Source: Garrison and Anderson, 2003, p.51

3.9.4.3c Teaching presence

The analysis of teaching presence within the online community considered (1) the online tutors' posts (i.e. facilitating discourse and direct instruction) from the online discussion forums (n=39), (2) the course instructional design and (3) the course organization. Tables 18, 19 and 20 show the indicators for each teaching presence criterion and examples according to Garrison and Anderson (2003) criteria.

Indicators	Examples (Garrison and Anderson, 2003)
Setting curriculum	'This week we will be discussing...'
Designing methods	'I am going to divide you into groups...'
Establishing time parameters	'Please post a message by Friday'
Utilizing medium effectively	'Try to address issues that others have raised when you post'
Establishing Netiquette	'Keep your post short...'
Making macro-level comments about course content	'This discussion will give you a broad set of tools/skills...'

Table 18: Teaching presence indicators: Instructional design and organization. Source: Garrison and Anderson, 2003, p.68

Indicators/examples	Indicators/examples
Identifying areas of agreement/disagreement (e.g. 'Joe, Mary has provided a compelling counter example to your hypothesis. Would you care to respond?')	Setting climate for learning (e.g. 'Don't feel self-conscious about 'thinking out loud' on the forum. This is a place to try out ideas after all')
Seeking to reach consensus/understanding (e.g. 'I think Joe and Mary are saying the essentially the same thing')	Drawing in participants, prompting discussion (e.g. 'any thoughts on this issue? 'Anyone care to comment?')
Encouraging, acknowledging or reinforcing students' contributions ('Thank you for your insightful comments')	Assessing the efficiency of the process (e.g. 'I think we are getting a little off track here')

Table 19: Teaching presence indicators: Facilitating discourse. Source: Garrison and Anderson, 2003, p.70

Indicators/examples	Indicators/examples
Present content/questions (e.g. 'Bates says...what do you think?')	Diagnose misconceptions (e.g. Remember Bates is speaking from an administrative perspective, so be careful when you say...')
Focus the discussion on specific issues (e.g. 'I think that's a dead end. I would like you to consider...')	Inject knowledge from diverse sources, e.g. textbook, articles, Internet, personal experiences (includes pointers to resources) (e.g. 'I was at a conference with Bates once and he said...You can find the proceedings from that conference at...')
Summarize the discussion (e.g. 'The original question was...Joe said...Mary said...we concluded that...we still haven't addressed...')	Responding to technical concerns (e.g. If you want to include a hyperlink in your message, you have to...)
Confirm understanding through assessment and explanatory feedback (e.g. 'You are close, but you didn't account for... this is important because...')	

Table 20: Teaching presence indicators: Direct instruction. Source: Garrison and Anderson, 2003, p.71

3.9.4.4 Quantitative data analysis: Descriptive statistics for pre-and-post course online questionnaires

For this case study, considering descriptive statistics, frequencies and percentages were analysed in the pre and post online questionnaires. The knowledge of these measures facilitated the interpretation of the data when triangulating the findings. As a result the information analysed quantitatively allowed for cross-comparison with the qualitative data results in order to exploit the data and draw solid conclusions. As this was a small-scale case study, it is important to highlight that the results from the pre and post online questionnaires were used to support qualitative data gathered on the online forums and blogs posts and online interviews. Thus, it was not possible to make significant statistical claims based on these results outside this research context.

Measures of central tendency (mean, median and mode) were evaluated in pre and post online questionnaires using SPSS. The questionnaire results described trends shown in the data which supported information about the teachers' CALL skills and knowledge views before and after the online course.

3.9.5 Role of the Researcher in this case study

As case studies can be placed within the ethnographic research spectrum (Creswell, 2007, 2009), the stance taken in this case study is aligned with the design-based principles, thus the researcher was highly involved in all the research process. The role of the researcher in this study concurs with that of Richards, Ross and Seedhouse's (2012, p. 33) regarding ethnographic studies as they state that 'the researcher is implicated in the collection, construction and representation of the data and as a result cannot be abstracted from the analysis.' The investigator-participant role in this case study allowed this researcher to be part of the online community of inquiry and observe in more detail how the L2 teachers developed their CALL skills and knowledge, as well as the challenges they underwent in the online course.

On the one hand, this was favourable for the data collection and analysis process as first-hand information was gathered and findings could be interpreted more appropriately. Creswell and Miller (2000) argue that the researcher's perspective in qualitative research can add value to the analysis. For example, researchers can validate the data by reflecting upon the process of data collection and analysis, or re-examining the data as a way to confirm the findings in the analysis. On the other hand, this direct involvement in the online course was a limitation in relation to the subjectivity of the findings. For these reasons, different data sources were included and measures of taken in order to minimize the researcher's subjectivity. For instance, although the study ended with 8 participants (26 started the course), post-course questionnaires were still applied to give the teachers an individual space to evaluate the course in an objective and private manner. These data was used complement the validity and reliability of the qualitative results. Also, it is important to explain that as the online course progressed, a close relationship

developed between this researcher as the online tutor and the teachers. This was useful as they gave constructive feedback, both negative (one of the teachers actually said that the audio materials were boring) and positive (the usefulness of the online course) in the pre-and-post course interviews.

3.9.6 Validity and Reliability

Prior to the start of the online course, piloting measures were applied to the data gathering instruments in order to ensure the rigour of the research design and reliability of the tools. In the following sections, the piloting procedures are explained. As social researchers suggest (Lincoln and Guba, 1985; Dornyei, 2007, Bryman, 2012) the trustworthiness (i.e. comparable findings) and authenticity (i.e. transparency) of a study are achieved mainly by applying methods which support and evaluate rigorous research design and procedures. For this reason, measures such as inter-rater reliability and consistency tests were taken as a means to ensure the internal validity (i.e. suitable data gathering instruments and analysis techniques for the research objective), external validity (i.e. generalization of findings) and reliability of the results. In order to validate the researcher's analysis of the teachers' blog and online discussion forums posts, inter-rater reliability and validity measures were applied to ensure the homogeneity of the coding process. Inter-rater reliability can be described as an evaluation 'whereby data are independently coded and the codings compared for agreement' (Armstrong, Gosling, Weinman and Marteau, 1997, p.1) and is very common in quantitative research.

As this was a small-scale case study, the qualitative and quantitative data was not robust enough to apply statistical inter-rater reliability tests. However, the qualitative data was examined by a third party. In order to validate the coding process, an extract of the data from both blogs and online forums was sent for examination to a fellow CALL researcher who was familiar with the Community of Inquiry framework (Garrison, Anderson and Archer, 2000) and has used it in his own studies. To a large extent, the coding provided by the external researcher was in accordance with that performed by this researcher.

3.9.6.1 Trials of pre-post questionnaires and interview questions

Peer check (Dornyei, 2007) for the pre-post training online questionnaires and interview questions: Both pre and post training online questionnaires and interview questions were examined by two experts in the field of Applied Linguistics and TESOL with vast experience in CALL research. These evaluators provided constructive suggestions on how to improve the quality, validity, reliability and effectiveness of the instruments. The pre/post questionnaires and interview questions were afterwards used for the first time in the pilot study.

3.9.7 Triangulation

In order to increase the reliability of the findings in this case study, Creswell and Miller's (2000) perspective on triangulation is adopted. They state that 'triangulation is a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study' (Miller, 2000, p. 126). This means that data gathered using different methods is combined in order to analyse the object of investigation (Dornyei, 2007). In this case study, the use of mixed methods to observe how teachers developed their CALL skills and knowledge for online teaching served to track the teachers' developmental process. Triangulating the qualitative and quantitative data was also a measure to minimize, for example, subjectivities of the qualitative information and the researchers' interpretation in order to make the study more objective and strengthen the findings.

3.9.8 Ethics

Ethical considerations were established from the beginning of the case study, as Dornyei (2007) points out that qualitative research can be more intruding than quantitative research, as the former usually deals with how people feel and their experienced. In this study ethics was approached by providing the L2 teachers with all the information about the online course and the syllabus (see appendix E). Participation consent forms were sent out and signed by the participants and this researcher (see appendix F). The teachers were encouraged to ask questions about the case study at all times, to ensure that their role and this researcher's

were transparent. In addition, the teachers were assured that their personal information and the data they produced were secured in the VLE Moodle managed by the IT department. They were assured as well that the data they provided was confidential and used for purposes of this case study only.

Data from the interviews were recorded on Skype using Camtasia studio (i.e. audio and video software) and stored securely by this researcher. The information from the online questionnaires was also downloaded from Google docs and saved by this researcher. When collecting data during the online course, the teachers were recommended to either use their real name or a nickname of their preference. For this thesis and any other publication and/or presentation associated with it (Morales and Windeatt, 2015), the data have been anonymised. Thus, the teachers have been assigned with a pseudonym in order to secure their privacy.

3.9.9 Piloting data gathering instruments and the online teacher and development training course

3.9.9.1 Trials of the online teacher training and development course for CALL

In order to test and validate the feasibility of the online course (i.e. content, organization) and effectiveness of the methodology and data gathering tools in this case study, a pilot study was carried out over 3 weeks before main study took place. In the pilot study, 6 students from the Masters in Applied Linguistics and TESOL programme at Newcastle University participated in the trial of the course. They were second/foreign language teachers in their home countries (i.e. China, Malaysia, Thailand, Turkey and Indonesia) and shared a similar profile with the L2 teachers from the main study. The 6 participants in the pilot study had language teaching experience in teaching English, mainly, in higher education.

3.9.9.2 Pilot study Procedure

The participants were asked to answer the pre-course questionnaire to evaluate their knowledge and skills about the use of technology for language teaching. In addition, pre-pilot study interviews were conducted. After these procedures, the participants started their work on Moodle. Upon pilot study completion, post-pilot study interviews were conducted as well.

3.9.9.3 Post-Pilot Study Amendments

Once the pilot study ended and the instruments tested, following amendments were made for the main study based upon the participants' comments:

- Data gathering Instruments: it was observed that as some of the questions in both questionnaires and interviews were not fully understood by the participants. They stated that some questions did not have a clear focus; therefore, they were re-formulated for the main study.
- Moodle: Minor changes in terms of the configuration of the discussion forums were made on Moodle in order to encourage interaction. In the pilot study, the participants were confused about how to use the discussion forum resource, so this was amended for the main study. Additionally, the materials were re-organized as the participants in the pilot study felt overwhelmed and were not clear about where and how to start working on Moodle. Instructions on Moodle were also clarified.
- Resources on Moodle: based upon the data collected from the participants, the materials (i.e. videos, websites, power point presentations, articles) were re-examined, targeting different levels of the online course such as materials layout (i.e. better organization and also inclusion of more visual materials) and content (i.e. more concrete examples on how to design and implement teaching activities with technology). The questions for reflection in blogs and discussion forums were re-formulated in order to encourage participation. In the pilot study, the participants did not use their blogs, so personal reflection was non-existent. The participants reported that the questions were challenging and suggested that they should be less general and more contextualized. Also, they recommended more intervention from the online tutor in order to increase dialogues with the 'expert'.

Summary

In this chapter, the research questions for this investigation were presented. In addition, the interpretive research paradigm and socio-constructivist epistemological approach were explored. At the same time, the case study strategy was chosen as the main methodological research techniques.

Qualitative and quantitative data was gathered and analysed in this case study in order to observe how in-service L2 teachers' developed their CALL skills and knowledge in an online training and development course for online teaching. The procedures regarding the design, implementation, data collection and analysis were explained. Issues regarding the role of the researcher, ethical considerations and validity and reliability measures in this case study were also discussed. In the next chapter, the findings of the case study will be shown.

Chapter 4. Results

In previous chapters, the theoretical (i.e. socio-constructivist) methodological (i.e. mixed methods) and analytical (i.e. Content Analysis and descriptive statistics) frameworks of this case study have been discussed. In this chapter, the representative results of the qualitative data and quantitative data¹ (frequencies and percentages) analysis relevant to the research questions will be shown.

Research sub-question 1 findings will be presented in section 4.1. In section 4.2, research sub-question 2 results will be displayed considering cognitive, social and teaching presence. Lastly, the results of research sub-question 3 will be illustrated in section 4.3.

Data Presentation and Findings:

Main research question: 'How do L2 teachers develop their CALL attitudes, skills and knowledge for online teaching in an online training and development course for CALL?'

4.1 Research sub-question 1

What attitudes towards CALL, pedagogical skills and knowledge of CALL and online teaching of languages do teachers bring to the course?

The data that answer research sub-question 1 are based upon the teachers' answers in the pre-course questionnaires (n=8) and the pre-course interviews (n=8).

4.1.1 The L2 teachers' pre-course CALL attitudes

In general, the teachers shared a positive attitude regarding the usefulness of technology for language learning and teaching. They were aware of the benefits that technology could bring to their teaching and their students' language learning process. This information provided by the teachers in the pre-course interviews is

¹ For a full list of pre-and post-course questionnaire results see appendix D.

consistent with data from the pre-course questionnaire, as seen in the examples below (tables 21 and 22):

		Frequency ²	Percent ³	Valid Percent ⁴
Valid	strongly agree	8	100.0	100.0

Table 21. The use of technology is a complement for language teaching and learning

		Frequency	Percent	Valid Percent
Valid	disagree	5	62.5	62.5
	strongly disagree	3	37.5	37.5
	Total	8	100.0	100.0

Table 22: The use of technological resources in the L2 class is a distraction for learners

Pre-course interview comments:

'The students could see learning language is not that boring, that it is interesting for them' (Alex)

'Slideshare, Eyeos, blogster...using these our classes will be more catchy, and will engage our students in an interactive learning method' (Frank)

'Students are related to technology and if you only use the blackboard they won't pay attention' (Hek)

'I think interaction teacher-student may be reinforced [with the use of technology]' (Neko)

4. 1.2 Challenges in the use of technology for language teaching

While the teachers expressed the view that language teaching with technology was beneficial for their students, they also acknowledged some problematic issues

² Frequency= number of respondents (participants)

³ Percent= total percentage

⁴ Valid percent= total percentage with missing values (i.e. in these results, all the teachers responded the questionnaires, so there was no missing value. For this reason, percent and valid percent are the same).

which could limit their use of technological tools. This is explained by their answers in the pre-course questionnaires and interviews as follows (table 23):

		Frequency	Percent	Valid Percent
Valid	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 23: The use of technological resources in the L2 class is challenging for language teachers

Pre-course interview comments:

'I don't know exactly how to use some software or some programs to use it appropriately in the class' (Alex)

'They all have ipods, cell phones, computers, so they are in technology so I have to always keep up, so it's very very challenging but important.' (Cece)

'Technology is always a challenge because you need a lot of technologies' (Frank)

4.1.3 Insecurity

In line with the teachers' views on technology being challenging, a shared sense of insecurity when using technological resources also tended to prevail (tables 24 and 25):

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	6	75.0	75.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 24: The incorporation of technological resources in my L2 class depends on my level of confidence about technology for teaching

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	1	12.5	12.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

Table 25: Would lack of computer skills discourage you to use technological resources for language teaching?

Pre-course interview comments:

'We need to update our knowledge about technology' (Frank)

'I don't know everything, just know the basic stuff and some things but I always want to learn more because, imagine that I have a colleague that she's not in technology at all, she is old and she is going to be retired this year and she doesn't use computers, she doesn't use anything so of course for her is more difficult to (Cece)

'It is difficult to choose the ideal program for my class...I don't know how to do that' (Alex)

'I know tools, but I don't know how to implement them in the curriculum' (Meg)

4.1.4 Support from peers and educational institution

In this case study, teacher education in CALL appeared to be important to the teachers. They also explained that their educational institutions' technological and pedagogical support was important to develop CALL competence. In general, most of the teachers had not been provided with consistent training on how to use technological resources, as they confirmed in the pre-course questionnaire (tables 26 and 27) and interviews.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	4	50.0	50.0
	Total	8	100.0	100.0

Table 26: Language teacher training in technology is relevant for teachers' professional development

		Frequency	Percent	Valid Percent
Valid	agree	1	12.5	12.5
	disagree	4	50.0	50.0
	strongly disagree	3	37.5	37.5
	Total	8	100.0	100.0

Table 27: I have received formal training about how to use technology in the language classroom

Pre-course interviews comments:

'My training experience in technology is limited to none' (Meg)

'No training. It could be great if they could send me to a seminar to be sure of what I'm doing' (Alex)

'About technology I haven't received any training, not at all. I think I learned by myself or others or just searching' (Cece)

'There is only one interactive whiteboard in the school but I cannot use it because it takes time to set up and I do not know how to do it.' (Frank)

4.1.5 Isolation

An issue that also emerged from the teachers' data was that although most of these teachers already had a personal interest in how to teach with technology, they felt it was difficult to pursue this interest in their work environment. They usually thought they were the only ones trying to use technological resources innovatively in their schools and universities. In their pre-course questionnaires (table 28) and interviews they suggest:

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Table 28: Teachers should be encouraged by their educational institution to incorporate technological resources for language teaching

Pre-course interviews comments:

'I don't have collaborative work...' (Alex)

'some colleagues take it well, suggestions about using technology in class, but others feel like "oh, she wants to impose something" and I don't want to, I am just showing them what is out there and it could be useful that we are doing the same things and the results are even better.' (Andy)

'They [my colleagues] did not see technology as a priority in their teaching and were not very open to share their materials or strategies. The attitude towards collaboration was stiff...' (Meg)

'We talk about experiences, but not that much in the English department...they don't even care' (Frank)

'There is only one other English teacher, but she does not come to school every day' (Easter)

Cece was the only one with a different view about collaboration in her teaching context:

'My school loves team work and, for example, all of us have the same classes, from 5th to 12th grade and all my colleagues teach the same grades, so we have to discuss what we are doing because we need to do the same.'

4.1.6 Technology reliability

Another aspect that seems to play a role in the use of online resources in language teaching is technology's (un) reliability. These teachers fear that after designing online activities, these could not be implemented due to technology-related issues. Data from both pre-course interviews and questionnaires (tables 29 and 30) showed that teachers usually need support when they cannot find the proper solution to a particular technological problem. Nevertheless, they always tried to come up with solutions.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	1	12.5	12.5
	disagree	2	25.0	25.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 29: I need technological support to incorporate technology in my language classroom

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	37.5	37.5
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 30: I need pedagogical support to incorporate technology in my language classroom

Pre-course interviews comments:

'When the computer screen is not working well, I always find a solution' (Neko)

'Trial and error' (Andy)

'Plan b...drawing, improvising.' (Frank)

'The students know more than me' and 'I had problems with the connection. I had to handle with the possibilities that I had. I don't have internet at home so I had to be organised.' (Easter)

'I always try to have everything under control but of course, if I can't do it there is always a student and if we can't, the last resource is the person in charge, like there is always a technician or an engineer that can help me so that is the last resource but I always try to do it myself'. (Cece)

4.1.7 Time management

Lastly, time might be considered the most important obstacle the teachers faced to for the integration of online resources in their language courses. In this study, every single participant indicated that time was a constraint to prepare classes using technological resources, as planning seemed highly time-consuming. Here are some examples from their interviews:

'I feel really motivated, but the only problem sometimes is time.' (Cece)

'It requires time to get used to technology.' (Andy)

4. 1.8 The L2 teachers' pre-course technological and pedagogical CALL skills and knowledge for online teaching

In order to obtain data on the teachers' CALL skills and knowledge for online teaching, in the pre-course questionnaire the teachers were asked about their general language teaching knowledge and practices. Figure 19 shows the 8 teachers' responses regarding the language teaching and learning approaches that they most commonly used in their teaching practices. As seen below, the presentation-practice-production approach was the most used. Communicational language approaches such as Communicative Language Teaching, Task Based Language Teaching and Cooperative learning were also used by the teachers in

their language classrooms. The traditional grammar-translation approach was present as well in the teachers' practices.

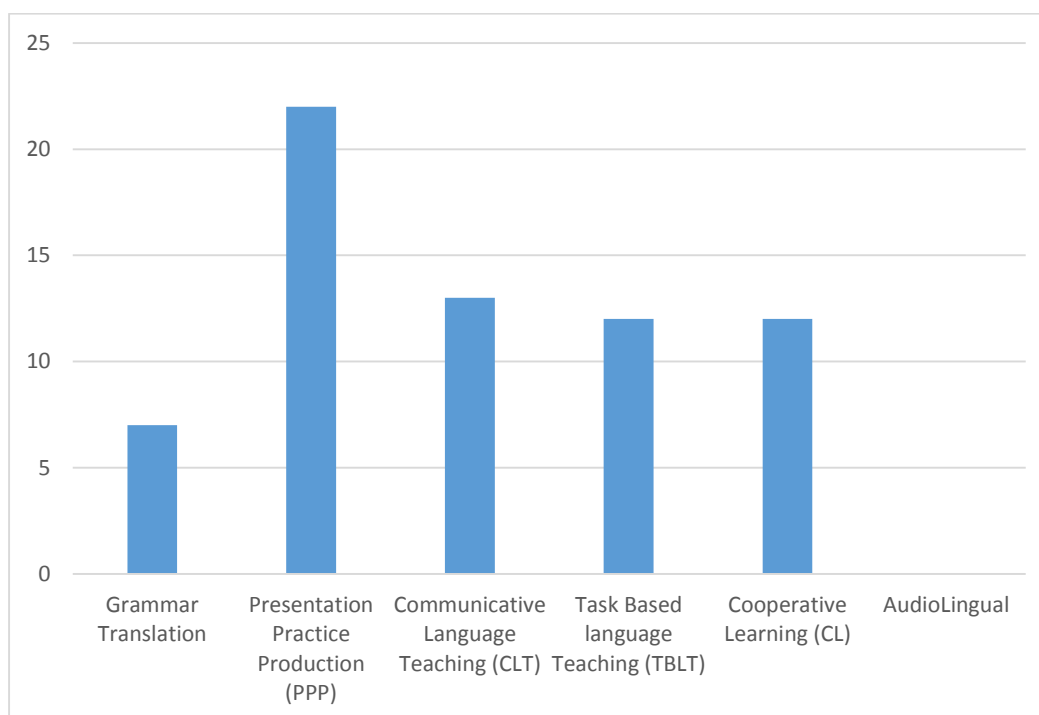


Figure 19: Pre-course questionnaire result: Language teaching approaches

4.1. 9 The L2 teachers' concept of technology

Regarding the teachers' prior CALL knowledge and skills, their personal views on their own CALL competence seem to be strongly linked to their individual concept of technology and their self-assessed level of competence. For instance, in the pre-course interview, some of the teachers showed rather basic conceptualization of technological resources. They said that they often used the data overhead projector, radio, CDs and power point with their language learners:

'I feel confident with managing basic things such as downloading files, using YouTube videos and the web, music...' (Cece)

'I know there is a few software available on Internet but I don't know how to use it exactly to really take advantage of using them' (Alex)

'I don't know how to create, but I use Edmodo, the British Council page, videos, worksheets, just that...' (Frank)

4.1.10 The teachers' CALL knowledge and skills level of competence

Compton (2009) proposed the 'novice' (i.e. teachers able to identify and adapt technological resources), 'proficient' (i.e. teachers able to identify, adapt and produce technological resources) and 'expert' (i.e. teachers able to identify, adapt, produce and evaluate technological resources) categories in order to distribute Hampel and Stickler's (2005) technological and pedagogical skills. When the teachers in this case study were asked in the pre-course interviews to evaluate their CALL knowledge and skills, they categorize themselves as:

- Novice: Meg, Cece, Alex, Easter and Hek
- Proficient: Neko and Frank
- Expert: Andy

Another differentiation used in order to know more about the teachers' background and understand their developmental process in the online course had to do with the digital native/immigrant classification. According to Prensky (2001) digital natives are those (i.e. teachers and learners) born amid technological advances, whereas digital immigrants are those who were born before the digital era and have had to adapt themselves to the presence of technology in education. In this case study, when the teachers were requested to categorize themselves as digital natives or digital immigrants in the pre-course questionnaire (table 31), most of them answered '*Digital Natives*'. Later in this chapter, this issue will be further addressed using the teachers' post course questionnaire results.

		Frequency	Percent	Valid Percent
Valid	digital native	5	62.5	62.5
	digital immigrant	3	37.5	37.5
	Total	8	100.0	100.0

Table 31: I consider myself a digital native/digital immigrant

Also, the level of the teachers' pre-course CALL competence can be drawn from their pre-questionnaire results (tables 32, 33 and 34):

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	4	50.0	50.0
	disagree	3	37.5	37.5
	Total	8	100.0	100.0

Table 32: I understand how different technological resources can be used in language teaching to foster skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	6	75.0	75.0
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 33: I know what technological resources to choose for my learners when using technology in my class

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	2	25.0	25.0
	disagree	4	50.0	50.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 34: I am able to assess my students using technological resources

4.1.11 The teachers' criteria when using technology with language learners: Transferability

L2 teachers have existing knowledge of the pedagogical methods for teaching the language and as regular users of resources for non-pedagogical activities (e.g. online banking, shopping, emailing). As Cece highlighted in the pre-course interview regarding her expectations for this CALL online teacher and development course for online teaching:

'I can learn or maybe to correct something that I have been doing, maybe I am not doing it like exceptional, so maybe I can improve all my classes'

Most of the teachers said they did not use any language teaching theory when they applied technology with language learners. In the case of Meg, for example, she argues that she just uses with language students what she can draw upon as a day-to-day technology user. Andy and Neko also explain that they plan activities according to *'the course syllabus'* (Andy) and *'I don't use any approach, I mean consciously, no. I use what I have there in the school to work with'* (Neko). In addition, Alex and Easter mostly use the Internet to *find* resources (rather than to create them) that can help their L2 students.

The teachers' views on criteria to use technology are also shown in the pre-course questionnaire answers (tables 35 and 36). Table 37 shows the classification of the identified criteria that teachers in this case study mainly used when applying technology with their learners. Only a minority of these teachers actually use their theoretical knowledge acquired in their L2 teacher training courses when using technology for teaching:

Pre-course interviews comments:

'I always use principles of communicative language teaching approach for any activity' (Frank)

'I try to use technology because I know that it is important for the students. It is a good idea to get to them and use this affective filter, you know, Krashen...' (Cece)

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

Table 35: I do not use any criteria to select technological resources when using technology in class

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

Table 36: I am aware of any theoretical approach or theory about the incorporation of technology for language teaching and learning

Criteria	Description
Transferable criteria for lesson and activity planning	<ul style="list-style-type: none"> a) Language learning approaches, theories. b) Regular use of technology in daily life.
Intuitive criteria for lesson and activity planning.	<ul style="list-style-type: none"> a) Self-taught knowledge on technology for teaching. b) Motivating activities for their learners c) 'Trial and error' activities.
Model-based criteria	<ul style="list-style-type: none"> a) Activities based on other people's ideas. b) Pre-designed materials from reliable source (e.g. British Council website).

Table 37: The teachers' criteria for teaching with technology

Research sub-question 1 summary

The results of research question 1 discuss the attitudes towards CALL that teachers brought to the online course. In this sense, the teachers' attitude regarding the use of technology for teaching was overall positive. Regarding CALL related challenges, the teachers referred to issues such as their feelings of insecurity (i.e. 'wanting to learn more' about technology) teacher training and professional development in CALL, their wish for collaboration with colleagues (i.e. isolation), technology reliability and, mostly, time management.

Prior CALL skills and knowledge among the teachers in this case study included their knowledge about language teaching in general, their concept of technology, their CALL competence and their criteria for choosing and implement CALL in their language courses. Having said that, in order to better understand how these teachers developed their technological and pedagogical CALL skills and knowledge for online teaching in the online course, it was necessary to go beyond their views and observe their choices and actions in the online course. Thus, the teachers' developmental process in the online course is presented in the following findings for research question 2.

4.2 Research sub-question 2

How does the teachers' understanding of CALL theory and practice for online teaching develop through social, cognitive and teaching presence in an online community of inquiry?

For this question data regarding social, cognitive and teaching presence will be shown in order to identify how the teachers in this study developed their CALL competence for online teaching. As stated in the methodology section the data were validated by a peer check. In the online discussion forums on Moodle, instances of cognitive and social presence were analyzed in a total of 81 posts corresponding to the 8 teachers. In the blogs on Moodle, due to their individual nature (i.e. personal diaries), only cognitive presence instances were examined in a total of 27 posts corresponding to 5 teachers who kept blogs during the online course.

Teaching presence was explored in relation to the online course design, materials and role of the tutor. The teachers' log files on Moodle were quantified and a total of 39 posts placed by the online tutor were examined.

4.2.1a Cognitive Presence in the online discussion forums

In order to promote learning in an online community of inquiry, cognitive presence should be promoted mainly through reflection. This dimension is where learning progress can be observed and tracked in an online community of inquiry considering the following stages: (1) triggering events (2) exploration (3) integration (4) resolution (Garrison, Anderson and Archer, 2000. See page 44 in this thesis). For this analysis, triggering events are mainly related to the questions that the teachers asked about the topics of discussion on each online discussion forum. Exploration is linked to the teachers' descriptive explanation of their personal experiences on the use of technology with language learners. After this stage, in the integration phase, indications of reflection were identified, mostly when the teachers made direct references to the contents in the materials presented in the online course. Finally, in the resolution phase, any plan or suggestions for application of technology in their language courses were considered. Table 38 contains some examples of each cognitive presence stage in the online forums from 81 posts analysed in total. Table 39 indicates the number of instances cognitive presence was identified in the online discussion forums.

Indicator	Teachers' comments
Triggering event	<i>'I remember a question from Professor Joaquin Triandafilide in one of his talks; how crucial are our senses for information processing?' (Frank, online discussion forum 3)</i>
Exploration	<i>'I always try to keep up, but I think my younger colleagues are always beyond and new generations are learning new strategies and they improve their knowledge about technology'. (Cece, online discussion forum 1)</i>
Integration	<i>'The Transformative Learning online training course is an example of this methodology. Currently, all of us are engaged in an online community participating in debates related to virtual connection. What is the teacher's role in this process?' (Easter, online discussion forum 8)</i>
Resolution	<i>'Actually I see a little difficult to use big technologies in class but I'll start using mails and blogs to see what happens with learners' (Alex, online discussion forum 5)</i>

Table 38: Cognitive presence examples in online discussion forums

Online Discussion Forum	Triggering events	exploration	integration	resolution
1	3	41	30	1
2	3	24	19	0
3	4	47	23	2
4	1	30	17	0
5	4	32	13	3
6	4	26	11	0
7	2	24	9	0
8	1	20	9	0
Total	22	244	131	6

Table 39: Cognitive presence instances per online discussion forum

It can be observed that the teachers mostly discussed issues according to their experiences in the online discussion forums. There was also a fair amount of integration, thus, there is an indication that teachers were incorporating what they were learning in the course into their comments in the online forums.

Concrete outcomes regarding the online course (resolutions) were more visible individually on the teachers' reflections on their blogs. The predominance of explorations and integrations in the online forums was considered a normal progression within the community of inquiry framework. Nevertheless, the emergence of these stages could be flexible. For example, triggering events can appear at any time in the comments as a means to promote and enrich discussion that may eventually lead to transformation. Also, integration can be the initiator of the discussion, as someone may want to start interacting by quoting or making reference to the online course contents.

As indicated above, exploration and integration comments led the discussions and Meg appears as the one who shared the most personal experiences together with Neko and Cece. In terms of integration, Meg also takes the lead with Neko and Easter. Thus, Meg and Neko showed that they discussed their experiences and also integrated knowledge from the online course. In table 40, it is possible to observe

the number of triggering events, explorations, integrations and resolutions per teacher in the online discussion forums.

Teacher	Triggering events	Exploration	Integration	Resolution
ANDY	2	27	22	0
MEG	8	44	27	0
CECE	0	38	12	1
EASTER	6	34	19	0
NEKO	0	41	25	0
ALEX	1	22	5	3
FRANK	5	27	17	0
HEK	0	11	4	2
Total	22	244	131	6

Table 40: Teachers' cognitive presence in online discussion forums

A contextualized example of cognitive presence can be drawn from one of the online forum discussions (i.e. the topic was 'electronic literacy'). From the teachers' posts, it can be observed that there is a cognitive presence engagement and progression. They asked questions, showed agreement/disagreement, made suggestions and built up on one another's ideas in order to create meaningful learning. Triggering events were present in every post in the form of questions. For example: *'How do we connect ourselves with technology instead of, in the end, isolating ourselves?'* (Meg).

In addition, mostly biographical situations were drawn upon to support their ideas as a way to share their experiences and feel validated and supported by others who may have been in the same situations: *'I consider myself as a digital immigrant (a visitor), since I wasn't born with computers, actually I just started to use them in 2000. The difference for people like me, is that we learn to learn in a different way'* (Andy). As this was the first formal discussion (i.e. an informal 'getting-to-know you' discussion was set up prior to the start of the online course), integrations of content were low but they made reference to some of the issues from the materials provided in the online course: *'I was watching Gavin Dudeney's*

conference about digital literacy the other day' (Alex), so there is an attempt to discuss the topic based on what they were learning. No resolutions were observed in this example.

4.2.1b Cognitive Presence in blogs

During the online course, 5 out of the 8 teachers used a personal blog. A total of 27 posts were analysed for cognitive presence. Table 41 summarizes the triggering events, explorations, integrations and resolutions observed on each teacher's blog.

Teacher	Triggering events	Exploration	Integration	Resolution
MEG	2	17	25	5
ANDY	2	15	10	1
EASTER	1	10	12	3
NEKO	0	9	12	1
CECE	0	11	11	1
Total	5	62	70	11

Table 41: Cognitive presence in the teachers' blogs

In the 27 posts analysed, it is possible to observe that the teachers' patterns of cognitive development are very similar to those in the online discussion forums; a large number of personal descriptions and moderate reference to contents and materials in the course (i.e. exploration and integration). This may be due to the fact that reflection in the blogs was, to some extent, prompted by the online tutor as they were provided with questions to think about. This allowed the teachers to continually examine the 'why's' of the use of CALL and online teaching and construct ideas in order to achieve a re-formulation of ideas and organize plans of action. In addition, for the blogs, the L2 teachers were strongly encouraged to raise and write about any issue that might additionally support their development of pedagogical and technological CALL skills and knowledge.

In the blogs, the teachers appeared to be more prone to discussing their resolutions for future application of online teaching with their students. For instance, Meg, who stood out in the online community as one of the most consistent teachers, progressed from 0 resolutions (i.e. plans for future use of

online teaching) in the online discussion forums to 5 in her personal blog. This is quite encouraging considering that she was only giving private lessons at the time of the online course and this, as she explained in our post-course interview, was rather demotivating for planning or even thinking about technology-mediated activities that were not going to take place in the near future. However, she pointed out the usefulness of the private space the blog provided her with to further analyse the online course contents and express herself individually.

The use of blogs varied among the teachers. For instance, Frank neither used his blog nor posted any resolutions in the online discussion forums. In our post-course interview, although he said he did have neither interest nor time to use the blog (*'I just uploaded a picture of me and personal information. I don't know the participants, don't have time'*) he stated that he actually implemented online activities with his learners.

4.2.2 Social Presence in online discussion forums

As stated in the community of inquiry model, the social dimension of the framework indicates the 'sense of community' (e.g. comfort, trust) that members perceive in order to foster development in the virtual learning environment (Hauck and Warnicke, 2012).

In this case study, the social presence analysis included indicators of emotional expressions (e.g. humour, emoticons), group cohesion (e.g. vocatives, pronouns) and open communication (i.e. mutual awareness and recognition of others' comments) in the weekly online discussion forums. Table 42 shows examples of social presence indicators in the online discussion forums.

Category	Indicator	Example
Affective	Humor emotions	'However we cannot avoid technology, skynet is taking control hahaha! '(Frank) 'I agree with you It's very important to be aware of how our students learn 😊' (Neko)
Open communication	agreements/quoting others	'As I guess we all agree , online communities are very useful for many things, including language learning and teacher development' (Neko)
Group cohesion	Vocatives, salutations, using 'we' 'us' 'our'	' Andy!!!! so happy to see you in here please every one , Andy lives in Concepcion just like me!!!!' (Alex) 'Currently, all of us are engaged in an online community participating in debates related to virtual connection' (Easter).

Table 42: Social presence examples in the online discussion forums

Table 43 shows the number of affective, open communication and group cohesion instances identified in the online discussion forums. In table 44 the number of affective, open communication and group cohesion instances in the online discussion forums per participant is shown.

These results suggest that this online community was cohesive so the learning environment the teachers were involved in shown to be safe and satisfactory.

Neko, for example, confirms this in the post-course interview by stating that: *'from what I saw it was good because nobody was like 'no, you are wrong, what you say is wrong, you don't know anything about this' no, there was nothing like this.'*

Online Discussion Forum	Affective (humour, emotions)	Open communication (agreement, quoting others)	Group cohesion (vocatives, salutations, use of 'we' 'us' 'our')
1	2	11	12
2	2	10	19
3	6	10	17
4	5	8	12
5	7	7	6
6	5	10	18
7	0	8	16
8	0	5	7
TOTAL	27	69	107

Table 43: Social presence instances per online discussion forum

Teacher	Affective (humour, emotions)	Open communication (agreement, quoting others)	Group cohesion (vocatives, salutations, use of 'we' 'us' 'our')
NEKO	16	10	8
CECE	3	3	26
ANDY	3	13	21
MEG	0	22	20
EASTER	0	3	6
FRANK	3	7	14
ALEX	0	7	11
HEK	2	1	10
Total	27	66	116

Table 44: Social presence instances per teacher in online discussion forum

An example of group cohesion can be seen in week 3 forum (learning styles) when Meg asked the participants if someone would go to the IATEFL Chile conference that was going to take place in Santiago at the time of the course. Here is an example from that forum:

Meg: 'Is anyone going to the IATEFL public talks today and tomorrow by Penny Ur and Gavin Dudeney here in Santiago?'

In addition to inviting her colleagues, she was able to freely transmit what she learned in the conference to the online community afterwards:

'I just wanted to share a little bit about Penny Ur's presentation tonight' (Meg)

Alex also went to the conference and shared her experience:

'Sorry I didn't reply to this before but I am just checking my moodle.... I just wanted to say... I WAS THERE MEG!!!! Gavin Dudeney is using ipods in his class, in a project for 60 devices, it was difficult for him because the other teachers' didn't know how to use them in a pedagogical sense.'

In this sense, the online community benefitted from something relevant for the teachers' professional development in the 'outside' world, as some of them did not have access to these kinds of events (e.g. Easter on Easter Island).

One important limitation that can be discussed regarding social presence in this online community is that further participation from the teachers might have enriched their CALL skills and knowledge development for online teaching. For instance, *all* the participants in their post-course interview suggested that they would have liked more interaction with one another, not just '*only one or two posts*' (Frank). Nevertheless, they did not seem to promote this either. Andy was even more critical and stated that she would have enjoyed more '*debate*.' Perhaps, as Andy had more knowledge and experience about CALL than her colleagues (i.e. she classified herself as 'expert'), she needed to be challenged. Andy realized that at times, her colleagues were not critically engaged in their responses. This concurs with the low level of 'triggering events' and high rate of 'explorations', as shown in the cognitive presence analysis discussed previously.

4.2.3 Teaching Presence

Teaching presence is related to how the online course was designed and guided by the online tutor. The community of inquiry framework provides categories related to the instructional design, organization of online courses and online tutors' roles. In this case study, teaching presence was analysed considering (1) the online course design and (2) implementation on Moodle (i.e. instructional design and organization) and (3) the online tutor's posts in the online discussion forums (i.e. facilitating discourse and direct instruction).

4.2.3a Instructional design and organization: Online training and development course design

The examination of the online course organization and management was particularly important for teaching presence in terms of how the design, activities and materials had an influence on the teachers' cognitive and social presence in order to promote their CALL skills and knowledge for online teaching.

4.2.3b The weekly contents in the online teacher training and development course for CALL

In relation to the online course content, the findings showed that, in the online discussion forums for example, the level of participation (number of posts per forum), initially, was high and afterwards fluctuated, probably due to the relevance of the topics (table 45) for the teachers or the interest they had in them. For example, in forum 5 (week 5, mobile learning) the teachers seemed to be much more active than in the previous weeks when they learned about learning styles and CMC resources. Regarding CMC resources, the teachers could identify them as they knew what blogs or online chats were. Figure 20 shows the level of participation in the discussion forums per week.

Online Discussion Forum	Content
F1	Electronic Literacy
F2	CALL principles and methods
F3	Learning Styles
F4	CMC resources
F5	Mobile Learning
F6	Teaching Culture through CALL
F7	Social networking and community building
F8	Online teaching and learning

Table 45: Online discussion forums contents per week

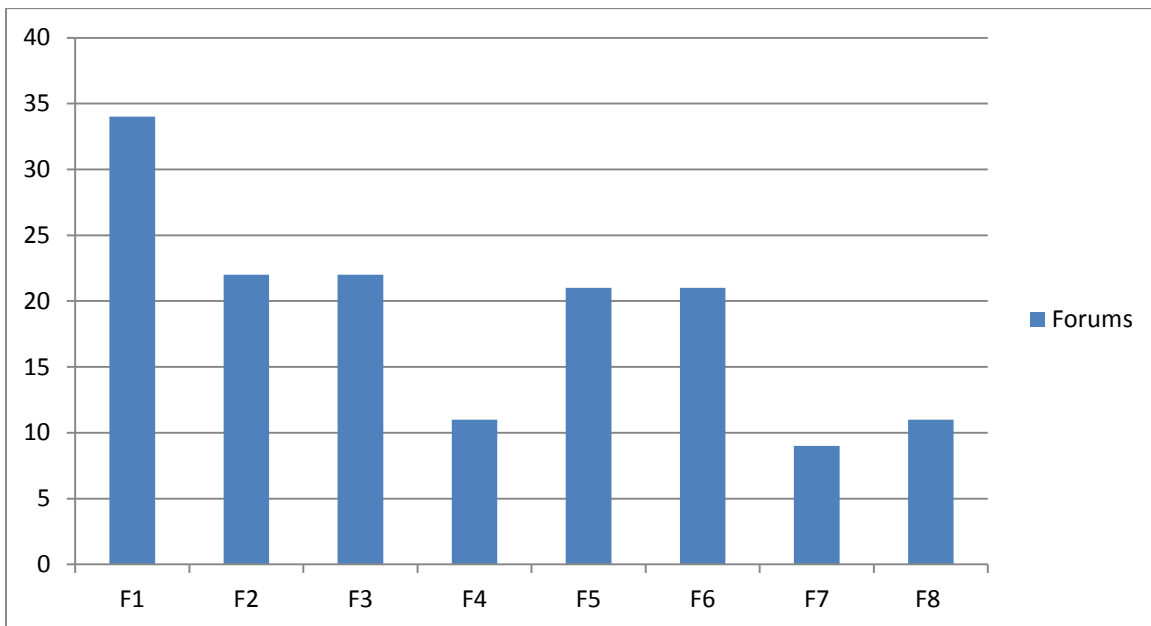


Figure 20: Participation in online discussion forums

The supporting evidence from the Moodle log files is in accordance with the information from the online discussion forums presented above. After quantifying the Excel file generated by Moodle showing the teachers choices of contents and materials, it is possible to see that, for example, mobile learning was popular but learning styles not so much. Also, although the level of participation in the last week of the course is shown to be low, the data on Moodle indicate frequent access to the materials about online teaching and learning. Figure 21 (vertical axis= total content views (n=1717); horizontal axis=course topic) shows a summary of the Moodle log files report regarding the weekly contents.

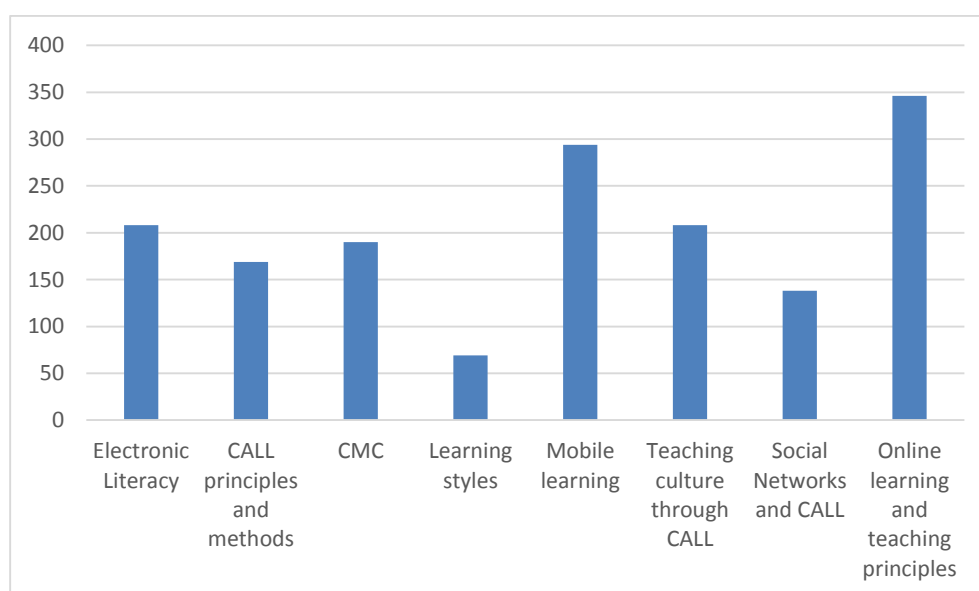


Figure 21: Content views on Moodle

4.2.3c The materials in the online teacher training and development course for CALL

The theoretical contents of the course were delivered through different transmission channels using multimedia and CMC resources. This researcher as the course developer and online tutor decided that this would support the teachers' developmental process, as it allows flexibility for access to the materials or learning preferences. For example, in the case of Easter, connectivity issues in her location were constant during the course so she sometimes has problems downloading or watching the videos on YouTube. However, the fact that there was more than one way to obtain the materials supported her participation. As observed in Figure 22

(vertical axis=number of materials=99; horizontal axis= type of material), the Moodle log files report indicates that the videos were the most popular materials the teachers chose to develop their CALL skills and knowledge. These results were supported by responses in the post-course questionnaire and confirmed by the teachers themselves in the post-course interview.

'I am totally visual...I didn't listen to the mp3, they are boring. I prefer watching videos related to some speeches, academic talks, seminars, questions, reactions from teachers... A way to learn by yourself' (Frank)

'For me personally I think, the best way to get the theory or get ideas for the future activities was through videos.' (Cece)

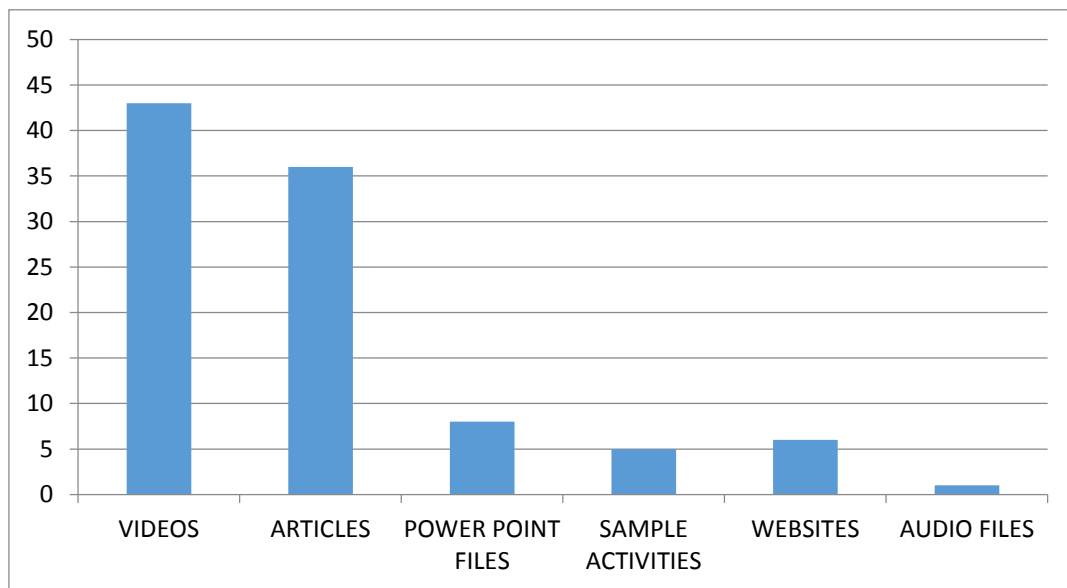


Figure 22: Most used resources on Moodle

4.2.3.d The practical activities in the online teacher training and development course for CALL

The incorporation of hands-on activities into the online course was considered useful yet challenging as the course progressed. The teachers were aware that these activities were helpful to put their CALL skills and knowledge for online teaching into practice. However, they struggled with completing them every week due to time constraints. This persisted during the course in spite of the help the

tutor offered. As shown in the figure below, (Figure 23), Easter was the only one who actually did the 3 activities required: (1) Produce an activity considering their students electronic literacy, (2) evaluate a blog using a checklist provided by the online tutor and finally (3) develop an online teaching project to use with their learners.

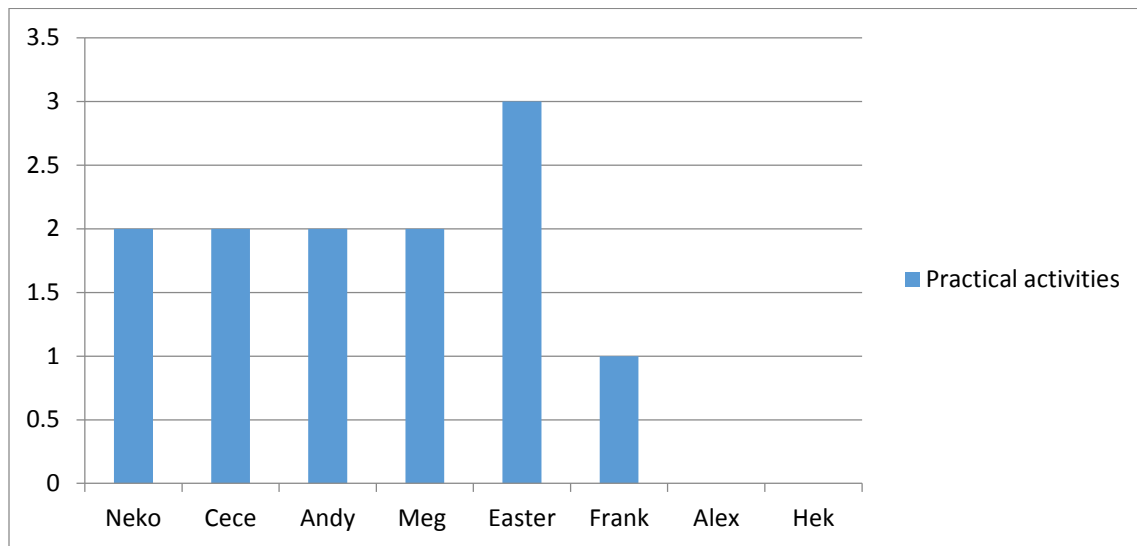


Figure 23: Practical activities per teacher

4.2.3.e Online tutor's role(s)

Playing different roles in the online community was important for building up teaching presence in the online course. As Salmon (2011) explains, online tutors should possess communicational skills, personal skills and also competence for the subject they are teaching. The data regarding this researcher's role as the online tutor in this case study was analyzed from two perspectives (1) the course design and implementation and (2) the online tutor's role in the online community to facilitate discourse and direct instruction. The latter was examined using the online tutor's posts in the online discussion forums. Figure 24 shows the online tutor's participation in the online discussion forums considering a total of 39 posts during the 8 weeks of the online course (vertical axis= number of posts; horizontal axis=online discussion forums).

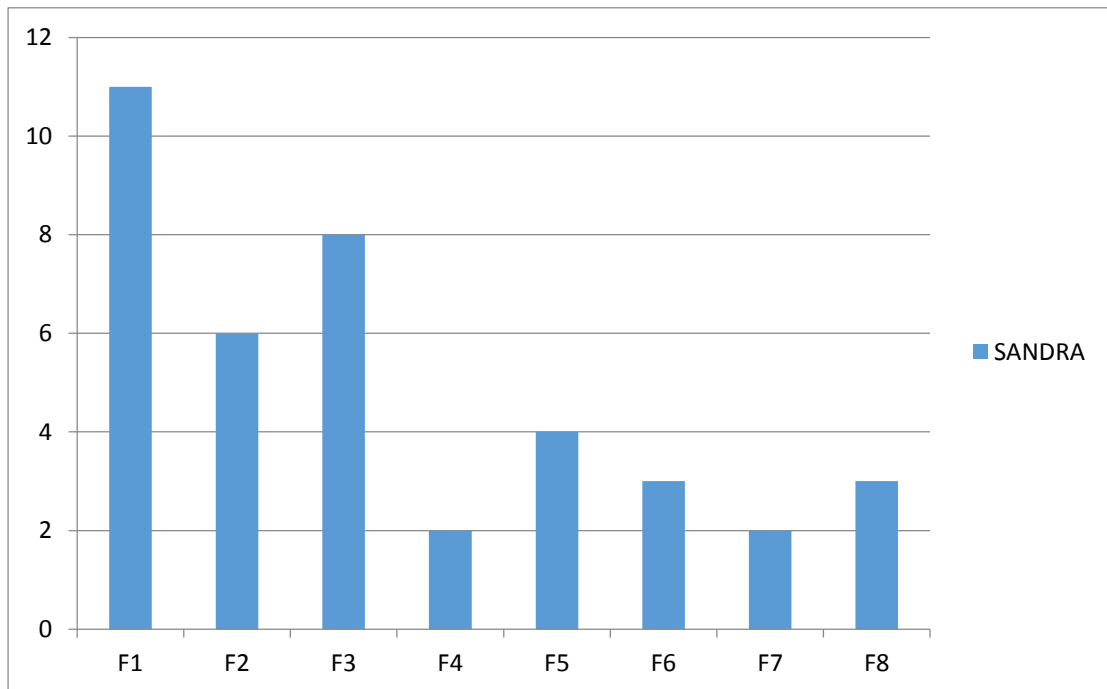


Figure 24: Online tutor's participation in discussion forums

As observed, at the beginning of the course (weeks 1-3) the online tutor's role was rather dominant in the online discussion forums. This is due to the fact that during this period the main objective for the online tutor was to engage, motivate and provide proper guidance to the teachers to familiarize them with the dynamics of the online course. After that period of high demand replying to posts and 'adding fuel' to the online discussions, the number of the online tutor's posts on the online forums decreased during weeks 4-8. In these last weeks of the online course, the online tutor mainly focused on keeping the teachers active by sending reminders to their emails and checking their work on Moodle.

4.2.3f Online tutor-teacher immediacy

In the post-course interviews, the teachers said that they felt supported by the online tutor. They explained that they felt comfortable in the discussions as they could 'speak the same language' and that they could 'see' their tutor regardless of the geographical and physical distance. For example:

'I think you were a good tutor, an excellent facilitator, because you talked. I mean you gave us the first hint on what we were going to do, because every time you

said “ok, this week we’ll be talking about this...” and you always gave us your opinion first, so that was good because in the other platforms that I have been to before, I have never seen that so I think that was really good. And then because you made us participate and you never obligated us to do something, you encouraged us to do it’. (Cece)

‘You gave me some feedback...as a suggestion, not as a must...I was your teacher student and it helped me a lot’ (Frank). However, he also said something to pay attention to that can be overwhelming for online tutors ‘be always there to give the feedback immediately...be on time and present through the whole activity’.

‘It would be good to have a little more pressure from you...but the support by mail or Facebook or Skype it was really good to know that you were going to be available not in just Moodle.’ (Alex)

‘You gave certain humour...you were a warm person.’ (Easter)

In tables 46, 47 and 48, examples of the online tutor’s instructional design and organization, facilitating discourse and direct instruction are shown considering the Community of Inquiry indicators.

Indicators/examples	Indicators/examples
<p>Setting curriculum</p> <p><i>'This week we will talk about social media; that is blogs, social networks and online games to encourage language learning.'</i> (Online Discussion Forum, week 7)</p>	<p>Utilizing medium effectively</p> <p><i>'It is very important that you revise the materials during the week so you develop your learning progressively ☺ Remember that we are learning together so we all benefit from the discussions.'</i> (Online Discussion Forum, week 2).</p>
<p>Designing methods</p> <p><i>'As usual the materials and links have been posted below, so go ahead and take a look! ☺.'</i> (Online Discussion Forum, week 6)</p>	<p>Establishing Netiquette</p> <p><i>'I will be online on Skype at the following times to answer your questions, suggestions or whatever you would like to discuss with me ☺'</i> (Online Discussion Forum, week 1)</p>
<p>Establishing time parameters</p> <p><i>'As usual, remember to check the files and links and to post on the forum/blogs. Work at your own time and pace this week.'</i> (Online Discussion Forum, week 3)</p>	<p>Making macro-level comments about course content</p> <p><i>'CMC tools are great to develop language skills in a CREATIVE manner and also to encourage collaborative work and interaction.'</i> (Online Discussion Forum, week 4)</p>

Table 46: Teaching presence examples: instructional design and organization

Indicators/examples	Indicators/examples
<p>Identifying areas of agreement/disagreement</p> <p><i>'I guess what you say Cece is a reality for most immigrants as we have had to learn on our own and adapt to this new student profile in NO TIME!'</i> (Online Discussion Forum, week 1)</p>	<p>Setting climate for learning</p> <p><i>'Our fellow colleague and Moodler, Meg, kindly sent us these very interesting questions about online teaching/learning for our last forum.'</i> (Online Discussion Forum, week 8)</p>
<p>Seeking to reach consensus/understanding</p> <p><i>'Very well said, Easter! and I quote "making informed decisions based on the knowledge of theory and practice of language learning process could allow us".'</i> (Online Discussion Forum, week 2)</p>	<p>Drawing in participants, prompting discussion</p> <p><i>'You are absolutely right, Meg...that last question Ur posed is indeed very difficult to answer! Looking forward to seeing what our colleagues think about it 😊'</i> (Online Discussion Forum, week 3)</p>
<p>Encouraging, acknowledging or reinforcing students' contributions.</p> <p><i>'That video about Plaza de Armas is brilliant Frank! Thanks for sharing 😊'</i> (Online Discussion Forum, week 6).</p>	<p>Assessing the efficiency of the process</p> <p><i>'Setting up online teachers' groups/clubs among schools/universities can be a way to interact and create contact networks with colleagues so we can not only improve our knowledge and L2 pedagogy, but support others to do it as well! Now, what are the best ways to do this?'</i> (Online Discussion Forum, week 7)</p>

Table 47: Teaching presence examples: Facilitating discourse

Indicators/examples	Indicators/examples
<p>Present content/questions: <i>'What is the teacher's ROLE in technology-mediated activities? to what extent is it the same/different from that in 'traditional face to face' instruction? (Online Discussion Forum, week 2)</i></p>	<p>Diagnose misconceptions: <i>'Exactly the point, Easter! Education today is not designed for the kind of students we have, Prensky states. We need to motivate them to keep their interest up and, like you say, teachers and students have different views on how to use technology' (Online Discussion Forum, week 1)</i></p>
<p>Focus the discussion on specific issues: <i>'In order to facilitate online courses effectively, the principles of 'community of inquiry for online learning' (Garrison and Anderson, 2003 check link)...'(Online Discussion Forum, week 8)</i></p>	<p>Inject knowledge from diverse sources, e.g. textbook, articles, Internet, personal experiences (includes pointers to resources): <i>'If you check this British Council site, you can find some apps to improve language learning 😊' (Online Discussion Forum, week 5)</i></p>
<p>Summarize the discussion: <i>'Meg! Thanks a lot for this report on Penny Ur's talk! It is really interesting to know about the aspects of technology use for L2 she discussed. (Online Discussion Forum, week 3)</i></p>	<p>Responding to technical concerns: <i>'Hi Frank, yes! I remember that and actually, I have signed in and have an account now, hehe. I also posted the link here [Edmodo] in case our colleagues would want to use it as well' (Online Discussion Forum, week 7)</i></p>
<p>Confirm understanding through assessment and explanatory feedback: <i>'In online settings, students need to take more responsibility for their learning and, as you mention, sometimes they demand more from the teacher instead of trying to be more autonomous (as Alex pointed out above)' (Online Discussion Forum, week 2)</i></p>	

Table 48: Teaching presence examples: Direct instruction

Research sub-question 2 summary

The findings of this case study mainly show that regarding cognitive presence in the online discussion forums the phases of exploration and integration predominated. This means that the teachers developed their CALL skills and knowledge by sharing personal experiences and integrating knowledge from the online course's contents and materials. While these cognitive presence results resonated in the teachers' personal blogs, more frequent instances of resolutions were observed. A well-developed 'sense of community' was identified in the analysis of social presence in the online course. This was relevant for the teachers' developmental process, as it allowed them to learn and collaborate in a comfortable environment that promoted open communication.

Finally, in relation to teaching presence, the online course design and organization played an important role in the online community. According to the data, visual resources such as videos were the most useful for the teachers' development of CALL knowledge and skills. Also, contents such as mobile learning, teaching culture using technology and online teaching and learning models were the most useful for the teachers. The practical activities, although designed to support the application of the teachers' CALL skills and knowledge during the online course, were not successfully completed by the teachers. In terms of the role of the online tutor, this was shown to be essential to support the teachers' developmental process in the online course.

In research question 3, the post-course results of the teachers' CALL skills and knowledge development for online teaching process will be presented.

4.3 Research sub-question 3

What evidence is there of transformation in the teachers' attitudes towards CALL, knowledge and skills for CALL and online teaching of languages?

The objective of this research question was to identify whether there was evidence of transformation among the teachers upon online course completion. In order to do so, post-course questionnaires and interview data were analysed. The latter were examined using the criteria from the Transformative Education Scale for Distance Learners (Motteram, 2006) in order to seek for indicators and emergent themes related to changes. This analytical process helped in tracking changes in the teachers' CALL skills and knowledge development for online teaching. As a result, the post-course data showed changes regarding the L2 teachers' attitudes and also CALL skills and knowledge for online teaching. This can be considered as the outcome of the teachers' developmental process on becoming effective users of CALL for online language teaching. Each of the teacher's developmental process was different and the changes they went through also varied. Nevertheless after analysing the data, it was also possible to identify common areas of CALL skills and knowledge development.

4.3.1 The teachers' developmental process in the online training and development course

The Transformative Education Scale for Distance Learners (Motteram, 2006) served as a guide to observing the teachers' developmental process after the online course was finished. The findings of this analysis suggest that most of the teachers found that their CALL skills and knowledge development in the online course was useful. This reaffirmed their initial positive attitude towards the use of technology for language teaching.

Post-course interviews comments:

'I think this work I was doing with you and in the platform was really useful for my teaching program at school' (Cece)

'It was something that pushed me to look forward and more materials online' (Frank)

'It was very useful, of course, because I was more organised, had plenty of materials to work with' (Neko)

'The online training was great...always good to review or know more' (Andy)

The teachers were able to experience being online learners. They used and reflected upon their prior language teaching knowledge and were presented with contents related to technology for teaching. Also, they conducted individual and collaborative activities in online forums and blogs that supported their CALL skills and knowledge development. Evidence is shown in the tables below (49 and 50).

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Table 49: During/after the online course I have reviewed my prior knowledge about language teaching

Andy	Cece	Neko	Easter	Frank	Alex	Meg	Hek
<i>'At the beginning, I wanted to do it all. Then I started to select...I did the readings and also liked the forums.'</i>	<i>'At the beginning I started searching for the materials, I did, read some articles or a search for information but I think, the best way to get the theory or get ideas for the future activities was through videos.'</i>	<i>'I checked first the power point'</i>	<i>'I read a lot, for each topic I read almost all the pdf documents each week. I couldn't watch the videos because I couldn't download them. I had problems with the connection.'</i>	<i>'I didn't read all the texts, the ones I found interesting...I read all the theoretical powerpoints'</i>	<i>'At first I used to scan everything, only scanning. In time I noticed that videos were faster, papers take me a lot of time...I always read them or part of them at the end of the learning experience in the week.'</i>	<i>'This was the first time that I worked on Moodle. This, in itself was an opportunity for me to learn the basics of this VLE.'</i>	<i>'I always selected the videos'</i>

Table 50: Transformative stage 1: Getting an overview

The teachers were able to develop their CALL skills and knowledge for online teaching by either discovering technological resources they did not know about and/or by further develop their existing knowledge as regular technology users. The teachers' experience in the online course developed their confidence regarding the use of CALL for online teaching (tables 51 and 52).

		Frequency	Percent	Valid Percent
Valid	strongly agree	7	87.5	87.5
	agree	1	12.5	12.5
	Total	8	100.0	100.0

Table 51: I have acquired CALL skills and knowledge on how to use online teaching with my learners

Andy	Cece	Neko	Easter	Frank	Alex	Meg	Hek
<i>'My criteria has changed from the point of view that now I strongly believe that I have to do it.'</i>	<i>'I think I have more skills even though I learned a lot through this course, I think I have to continue with this to master it'</i>	<i>'There were things I had never heard of or had very low knowledge about'</i>	<i>'I usually thought I didn't have the profile to participate in these online courses, because I couldn't get in contact with the people in the course.'</i>	<i>'the theoretical part were the presentation and then we shared, exchanged information'</i>	<i>'it was useful even when I didn't do the reflection on the blog'</i>	<i>'I think the forum was the most crucial component of the course for me in terms of recalling and personalizing what I was learning on the Moodle.'</i>	<i>'sometimes there were many commentaries and very long.'</i>

Table 52: Transformative stage 2: Supported knowledge and skills development

The teachers developed their CALL skills and knowledge in the online course so are able to make more independent and informed pedagogical and technological decisions when using online teaching with language learners (tables 53 and 54).

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Table 53: During/after the online course I am able to make effective decisions to choose technological resources appropriately

Andy	Cece	Neko	Easter	Frank	Alex	Meg	Hek
<i>'I am making decisions on which to use and doing it confident and now</i>	<i>'now I would, I will, I am trying to plan more activities using technology</i>	<i>'I appreciate what I learned as well, I learned many things and I keep the documents for future references'</i>	<i>'I am planning and organising the activities with the mobile phones'</i>	<i>'I feel more confident, I can see myself using technology more in my classes, but the matter of fact is that I am not using it because of the environment, the institution...'</i>	<i>'I am trying to implement Edmodo with my students and using more videos. I didn't know about Edmodo before.'</i>	<i>'I feel more familiar with the options out there, but I don't necessarily feel more comfortable using them.'</i>	No evidence

Table 54: Transformative stage 3: Gaining independence

In comparison to the teachers' initial data; it can be observed that they have been able to construct a more solid foundation regarding their concept of technology, criteria and CALL skills and knowledge for online teaching. This has allowed the teachers to be more aware of their role when teaching with technology and the technological resources for language learning. Evidence here (table 55) shows that they have either used or considered using what they have learned in the online training and development course in their own teaching context.

Andy	Cece	Neko	Easter	Frank	Alex	Meg	Hek
'the students have been using some of the tips I have been giving them with their own students'	'I think this work I was doing with you and in the platform was really useful for my teaching program at school'	'I cannot only use what I have always knew, but I also have more tools so if I have many possibilities, many ideas, many tools, I feel even more motivated to work with them [online tools]'	'I am more capable to talk about theory than practical things, that's why I am interested in this perfect combination between theoretical and practical.'	The first thing I did was to ask them [students] what did they think about to include social networks in their learning in their own time...and the thing is they said it's amazing...'	'it is easier for me now to imagine what to do with or how to teach writing,	'Going forward, I will ask myself why I am using a certain technology instead of just assuming it's good because it's technology.'	No evidence

Table 55: Transformative stage 4: Going it alone

After the online course, the teachers stated that they were capable of transmitting the CALL skills and knowledge acquired to their students and colleagues. Concrete evidence of such actions, however, was not a focus in this case study, thus not shown in the results (tables 56, 57 and 58). In addition, data from the pre-course interviews showed that for some teachers, their CALL skills and knowledge development process was more challenging than for others. This was due mainly to personal characteristics, confidence or reluctance to actively participate in the online course. For instance, Hek's case is rather clear, as there is not obvious evidence. Easter also stated that her personality prevented her from being more communicative towards the other teachers in the online discussion forums (*'I didn't have the disposition'*). Additionally, Alex explained that she doubted her own knowledge to post in the online forums (*'I am always scared about my teaching knowledge, afraid of saying something wrong'*).

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 56: I have discussed what I have learned in the online course with colleagues in my teaching context

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 57: During/after the online course I am able to train my students to make effective use of technological resources for L2 learning

Andy	Cece	Neko	Easter	Frank	Alex	Meg	Hek
<i>'I would like to do something with the teachers of my department.'</i>	<i>'I also will encourage my other colleagues to include these kinds of activities [technology] in the classroom'</i>	<i>I will apply things different from before.'</i>	<i>No evidence</i>	<i>'I am able to transmit content, but the intrinsic motivation of my colleagues is awful...'</i>	<i>'My boss is my only colleague...he teaches computing....I am also commenting him about the Edmodo and he's thinking about how to use Moodle.'</i>	<i>'This is my career goal-teacher training and support in incorporating technology. I definitely think this course helped in this area.'</i>	<i>No evidence</i>

Table 58: Transformative stage 5: Evidence of possible transmission of knowledge and skills to others

As indicated previously, the ways teachers' developed their CALL skills and knowledge and the changes they experienced differed from teacher to teacher. Nevertheless, shared areas of CALL skills and knowledge emerged from the teachers' post-course data.

4.3.1.1 The L2 teachers' post-course CALL Attitudes: Confidence

In the pre-course interviews all of them indicated that they considered technology as an important contribution to developing their learners' language skills. This was confirmed in the post-course questionnaire (table 59). That is why they wanted to know more about how to use technological resources effectively. After the online course, there was a consensus that the teachers were more confident about using online technologies with L2 learners. For example:

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	6	75.0	75.0
	Total	8	100.0	100.0

Table 59: After the online course I am confident using technological resources for language teaching and learning

Post-course interview comment:

I really miss the classes or the units because I think I learned a lot about many things, I feel mature, I have grown...it's about confidence...I am more confident'.
(Frank)

In general, the feeling of insecurity the teachers had before the online course diminished upon completion of the course. After the online course, it seemed that by developing their CALL skills and knowledge the teachers were more confident about using technological resources in their teaching. As a result, they were also more assertive in suggesting approaches to integrating technology in their schools. After the online course, Cece said:

'We have a blog in the school where students can comment on music, for example, or topics and I didn't use it as much but now I am thinking of using it more. I mean,

like every week, like before it was once a month maybe now I'll use it more regularly.'

The teachers also stated that to a certain extent, the need to 'learn more' was also met after the online course:

'You know usually that is not often done, I mean it could be done but not so much...that you can talk to other colleagues about a topic, but you know some teachers don't really like it...you know talking about technology, the use of the technological resources...they are like "yeah, ok maybe later"...so it was a good thing, as teachers you need to teach but also to learn.' (Neko)

The reliability of the learning context where the teachers were developing their CALL skills and knowledge gave them a sense of security as well. This means that they were clear about the online course organization, how to use Moodle, what they had to do every week, and who to contact if they needed extra support. This increased their 'trust' in online communities for future professional development experiences.

'I know more about that these online communities exist and they are reliable than what I used to think.' (Alex)

'In the future, if there is another community like this, of course I am willing to participate.' (Neko)

However, although these positive views are encouraging, the sense of confidence may vary amongst teachers when actually planning and using online teaching in real teaching contexts. Meg, for instance, stated that her motivation to actively participate during the course was challenged, thus, after the online course she did not feel as confident as her colleagues.

'I wasn't applying it with a class of students. This doesn't mean that I couldn't use the technology presented, but I don't feel like I had time to really get into using the technology with my students.'

This feeling is similar to Hek's as he was unemployed at the time of the online course. Although his Moodle log files records showed that he checked the materials in the platform, he was unable to fully engage in the online community:

'I am unemployed; I could not apply the materials or the course. But in general the videos that I watched were really interesting'.

4.3.1.2 The L2 teachers post-course technological and Pedagogical CALL skills and knowledge for online teaching: Awareness

Besides confidence, awareness of technology was another aspect that the teachers shared after the online course. This means that they developed a deeper understanding of the available technological resources and pedagogical techniques they could use for online teaching. In this sense, the online course was an awareness raising experience as (1) the teachers developed their CALL skills and knowledge for online teaching through individual and collaborative reflection and theoretical input and (2) because they acquired this knowledge through experiential learning by being exposed to technology-related resources and activities. The teachers became more conscious about their existing language teaching knowledge and how they could use it when teaching with online resources. This awareness modified their initial criteria for choosing, adapting and/or creating technological resources for online teaching, as seen below (table 60).

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

Table 60: After the online course I am aware of any theoretical approach or theory about the incorporation of technology for language teaching and learning

Post-course interview comment:

'I was like hey! I didn't know this! And I was practically using this but I didn't know that. With the reflection I could have a record of what I was learning and what I can apply in my teaching context as well, so the whole thing was a useful.' (Neko)

4.3.2 Reflection in online discussion forums and blogs

The data about cognitive presence (i.e. related to critical thinking and reflection) in online forums and blogs (see research question 2) indicated that the teachers developed their CALL skills and knowledge primarily through (1) sharing personal experiences (exploration) and (2) by incorporating the theoretical input, activities and materials they received on Moodle into their interactions in the online community (integrations).

These results resonate with the information provided by the teachers in the interviews and questionnaires (tables 61 and 62) after the online course, as most of them stated that they were more prepared to make informed pedagogical and technological decisions for online teaching. Also, they explained that they enhanced their CALL skills and knowledge mostly through the reflective learning process in the online community. For example, the vast majority of the teachers used the online discussion forums as the main medium to foster their CALL skills and knowledge.

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

Table 61: Reflection helped me to improve my pedagogical CALL skills and knowledge for online language teaching

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	6	75.0	75.0
	Total	8	100.0	100.0

Table 62: Reflection helped me to improve my technological CALL skills and knowledge for online language teaching

Post-course interview comments:

‘The commitment to connecting to an online community. I have never been a natural social media user. I don’t naturally share my ideas and experiences online. However, this course has made me realize that this is the best way to advance in this field.’ (Meg).

‘I used to post comments in the discussion forum and there was where I could see what other colleagues were thinking and doing in their classes.’ (Alex)

‘Both were really useful, the group or with the colleagues was really interesting and through that experience I could see or know what other colleagues were doing and also we could share materials and experiences, ways of teaching, strategies, any kind of those things that could help us to construct or to build teaching methods in a better way. Then the other kind of reflection the one that was more individual was also good because I could tell you what I was doing or what strategies were the best or what kind of activities I was doing.’ (Cece)

Nevertheless, some of the teachers explained that the use of the blog in the online community was challenging for them. They stated that they did not have enough time to keep regular record of their individual learning process:

‘I didn’t have enough time, I scanned the blog to see what was it about and I noticed that it [the blog] was easy to do with students in any level...I didn’t post any comments...(Alex)

Additionally, the teachers indicated that, although they knew the blogs were part of the online course design, they were not completely clear about what role it played in the online community. Therefore, it is linked to the role of the online tutor and the clarity of the functions that the different resources played in the online community.

'I never used the blog because I didn't know how to use it and never asked either...' (Hek)

'I didn't understand the objective or the difference between the blog and forum...' (Easter)

This coincides with the fact that only 5 of the 8 teachers actually used the blog during the online course. Nonetheless, as Cece pointed out, the blog was useful for some of the teachers.

4.3.3 Theoretical input in the online teacher training and development course

The online course contents and materials played an important role on the teachers' CALL skills and knowledge development. In research question 2, it was shown that the teachers were interested in trending topics such as mobile learning and were more drawn to visual materials to develop their CALL competence. The CALL materials and topics in the course supported the teachers' awareness of technological resources (and enhanced their confidence) to use technology after the online course. This was reflected in the teachers' post course interviews and questionnaire responses (table 63):

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	4	50.0	50.0
	Total	8	100.0	100.0

Table 63: I am able to make effective decisions regarding task design for teaching language with technology

Post-course interview comments:

'It was an opportunity to refresh your knowledge, to be in contact with new theory, to have the possibility to implement new activities'. (Easter)

'Now I have training, and through the theory I can say, "you know, there is theory about it, there are teachers worried about it and we have had discussion groups" so here it is I have proof that what I am saying is useful and not a waste of time, so I am more confident about using technology and about encouraging my colleagues and supervisors to use it in the classes and in any kind of task.' (Cece)

'My boss came from Australia and she was showing us a video about technology in classroom, and I was laughing at myself because I was thinking 'but I know more than just that video because I did the course!' (Frank)

4.3.4 The teachers' post online course CALL knowledge and skills level of competence

In discussing research question 1, it was stated that according to the taxonomy suggested by Compton (2009) regarding L2 teachers' CALL skills for online teaching, the majority of the teachers were in the 'novice' category. After the online course, this seemed to have changed, as more teachers were more aware of technological resources and how to use them in their language courses. Some of the teachers that self-assessed themselves as 'novice', Ceci and Alex, for example, moved to the 'proficient' category. The same applies to Neko, as she was previously categorized as 'proficient'. After the online course, she seemed to have moved to the 'expert' category. In table 64, it can be observed that the teachers feel more prepared to use technology with their students in terms of, for example, using it for assessment purposes.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

Table 64: After the online course I am able to assess my students using technological resources

Post-course interviews comments:

'I usually, I mean, before this I was kinda like a proficient user, but now, I wouldn't say I am an expert user but a bit, no, not a bit more than just proficient. Like in between, proficient a bit of expert, I'd say.' (Neko)

'I think I upgraded some levels for sure. I mean I was maybe entering the proficient part but now I think I moved on' (Cece)

'It depends on the material; I can't handle all of them 100%. For example, with Edmodo, I think that I am an expert, but for example, Moodle, blog, I am not good using blogs.' (Frank)

Regarding the teachers' digital native/immigrant profile also discussed in research question 1, the teachers initially described themselves as *'Digital Natives'*.

However, in the post-course questionnaire (table 65) there was a change, as they categorized themselves as *'Digital Immigrants'*. This is interesting in terms of the teachers' CALL skills and knowledge development, as the findings show that there might be a better understanding of what these categories mean. This change might have to do with familiarization with CALL technological and pedagogical knowledge and their need to keep learning.

		Frequency	Percent	Valid Percent
Valid	digital native teacher	3	37.5	37.5
	digital immigrant teacher	5	62.5	62.5
	Total	8	100.0	100.0

Table 65: After the online course, I consider myself a Digital native/Digital immigrant

Research sub-question 3 summary

In this research question, evidence about the teachers' changes regarding their attitudes and CALL skills and knowledge after the online course was shown. The results indicate that, despite the online course' challenges (e.g. use of blogs), individually, the majority of the teachers in the case study went through a transformative CALL skills and knowledge development. Overall, considering the teachers' data from the post-course questionnaires and interviews, the common themes that emerged were mainly related to:

- (1) Transformation in their confidence in using online teaching with students. The teachers after the online course were more confident of their ability to justify choices of pedagogical practices with technology, disseminate knowledge in teaching contexts and continue professional development in CALL in online communities of inquiry.
- (2) Development in their awareness of options for using CALL for online teaching, and strategies they can apply when using CALL. The teachers' experiential learning in the course on Moodle helped them to better link technological resources with pedagogical purposes for online teaching. Also, they became aware of their roles and responsibilities when teaching with technology. Changes in the teachers' CALL knowledge and skills were mainly fostered by reflection in the online community, as they were able to discuss and share ideas and concerns with colleagues about how to use online teaching effectively in their language courses.

Summary

In this chapter, data and findings from this case study on how L2 teachers learn to use online resources with language learners have been presented. The first research question provided information about the teachers' CALL knowledge and skills they brought to the course. In the second research question, data regarding the cognitive, social and teaching presence in the online community were reported. The teachers mainly developed their CALL skills and knowledge by exploring their experiences and integrating theoretical input from the online course.

Finally, in the third research question, the teachers' changes after the online course were discussed. Findings indicated that the teachers went through a transformative process in terms of their CALL knowledge and skills. Awareness and confidence for online teaching were identified as the outcome of the teachers' experiential learning in the online community. In the discussion chapter, these findings will be interpreted in more detail and their implications for this case study and L2 teacher development in CALL will be explored.

Chapter 5. Discussion

The focus of this research was to gather and interpret data regarding how teachers develop their technological and pedagogical CALL skills and knowledge in order to become effective users of online teaching with language learners. The aim of the study was, therefore, to observe the teachers' developmental processes in an online course for CALL. This information will help to support the effective design of courses for helping L2 teachers to develop their use of CALL in order to face challenges that integration of technology poses in second language learning and teaching.

In this chapter, the teachers' teaching background and how this can influence their CALL skills and knowledge development will be explained in section 5.1. Also, in section 5.2 the ways the L2 teachers developed their CALL competence for online teaching during the course considering social, cognitive and teaching presence will be discussed. Lastly, in section 5.3, evidence of changes after the online course will be described as well as the overall outcome of the teachers CALL skills and knowledge development in the online course.

Main research question:

'How do L2 teachers develop their CALL attitudes, skills and knowledge for online teaching in an online training and development course for CALL?'

Research sub-question 1

What attitudes towards CALL, pedagogical skills and knowledge of CALL and online teaching of languages do teachers bring to the course?

5.1 L2 teachers' positive attitudes

In the literature review section of this thesis, it was discussed that teachers who have a positive attitude towards technological resources usually have a personal interest in CALL as they see its value for their teaching (Kessler, 2007). As in Kessler (2007), in this case study it was the teachers' motivation to improve their language courses that encouraged them to participate and complete the online

course. Additionally, their (lack of) confidence affects whether and how they use technology in their languages courses.

This concurs with Egbert, Paulus and Nakamichi (2002), but also indicates that their levels of confidence have an effect in their interest for increase their CALL skills and knowledge. In this case study, the teachers, regardless of their prior CALL skills and knowledge, felt they had to further develop their technological and pedagogical CALL competence.

5.1.2 Insecurity

Having said that the teachers had quite a positive attitude towards technology, they also manifested constant feelings of insecurity when using technological resources with their language students (i.e. 'wanting to learn more'). These findings concur with Egbert, Paulus and Nakamichi (2002) and Kessler and Plakans (2008), as they state that teachers with a positive attitude towards technology do not necessarily apply technological resources confidently and effectively in their language courses. In this case study, the teachers were aware of the necessity of developing their CALL skills and knowledge for online teaching, nevertheless, they admitted that sometimes their feeling of insecurity, combined with other factors (see below) prevented them from making good use of technological resources with their students.

5.1.3 Isolation

Additionally, the teachers in this study discussed issues of 'isolation' in their teaching context. According to the teachers, the lack of support from peers and/or their educational institution, to a large extent, discouraged them from using online teaching with their L2 students. The teachers explained that if they had more opportunities to meet their technological and pedagogical needs, they would be even more inclined to innovate. Nevertheless, such changes in educational institutions, for example, may only come about, if at all, in the longer term and L2 teachers need on-going professional development in technology now, particularly, due to the evolving nature of technological resources available for L2 teaching. Taking this reality into account, it might be expected that teachers implemented

self-directed and/or collaborative strategies (i.e. establishing supporting networks with colleagues within schools or other institutions). Nonetheless, this seems to be a challenge as well due to the reluctance of other teachers to collaborate, lack of guidance and little or no support from educational institutions to promote these kinds of professional development activities. As a result, teachers might not take proper advantage of the available technology to teach languages online in order to (1) foster their students' language learning experience and (2) develop and maintain their own CALL skills and knowledge in an independent fashion.

Language teacher isolation is described in Hanson-Smith (2006) as she explains that this problem is usually overlooked in CALL teacher education, in both face-to-face and online teacher development courses, thus she strongly suggests this needs further investigation. In this sense, the collaborative work in a social-constructivist learning environment in this case study seemed to have been an effective means of supporting the teachers' developmental process. In Moodle, they were able to share their experiences in CALL individually and collaboratively, as well as to develop their CALL skills and knowledge with the theoretical input and materials. However, the teachers were able to collaborate mainly due the guidance and motivation the tutor provided them with (later in this chapter). Therefore, it is essential that online community members work independently but still foster collaborative support.

5.1.4 L2 teachers' prior CALL and online teaching skills

5.1.4.1 Taxonomies

According to Prensky (2001) digital natives are those learners who were born in the digital era. They are seen as a generation who are familiar and comfortable with technology itself; whilst immigrants (e.g. teachers) are considered digital immigrants. This means that they are seen as 'non-native' users of technology, and thus have had to adapt themselves to this new means of communication.

Therefore, teachers might suffer from 'digital culture shock', as they might not have a clear understanding on how to apply technology with language learners.

Important debates have taken place in educational technology about teachers' and students' profiles (Hockly, 2011; White and LeCornu, 2011; Smith, 2012) since Prensky (2001) proposed his digital native/immigrant dichotomy to categorize students and teachers. This is due to the fact that this distinction seems to be too broad to provide a satisfactory way of characterising teachers and learners and their relationship with technology. The issue is that, whichever of Prensky's categories L2 instructors fall into, (i.e. as being familiar about technology does not always mean being competent using it) they need to develop their CALL technological and pedagogical competence in order to better understand how online resources can be used effectively with today's language learners.

This description regarding the teachers' 'digital' profile was quite evident among the participants in this study. In the findings, it was possible to observe that before the training they stated that, in general, they were quite familiar with the use of the Internet and technological resources to teach the language (i.e. thus their classification of 'digital native' teachers). However, during the course they also realized how much they *did not know*, and categorized themselves as 'digital immigrant' teachers after the course. Having said that, they stated that after the online training they developed a more refined and accurate view of themselves in relation to the use of technological resources. The teachers also stated that after the online course they still felt more confident with some online tools than with others. For example, some of them said that after the online course they were quite competent in a particular resource (e.g. blogs) but were hesitant to use more complex resources, such as Moodle.

This brings the discussion back to Compton's (2009) classification of *novice*, *proficient and expert* in relation to CALL competence. According to the author, instead of using Hampel and Stickler's (2005) CALL skills pyramid to talk about technological and pedagogical skills, L2 teachers should be categorized according to their ability to search for, choose, implement and assess technological material (i.e. to achieve the TESOL standards). However, the findings in this case study indicate that teachers may belong to more than one of Compton's categories,

depending on the technological resource they want or need to use. Thus, more important than labeling teachers is providing them with CALL skills, knowledge and strategies that allow them to be more aware of what they know and what resources they have at their disposal.

Helping teachers become more aware of their teaching practices (as happened in this study) can help teachers to improve their CALL competence in order to better deal with the fast pace of technological advances and amount of information that technology offers today. As Hubbard (2004, 2008) points out, it is essential that L2 teachers undergo awareness-raising experiences in CALL professional development, as well as receive guidance on reflecting and examine their decision making processes in order to improve their CALL practices in the L2 classroom. Therefore, in order to use online teaching with their students teaching contexts, L2 teachers should experience technological resources and online teaching/learning themselves so they can be ready to prepare and use materials as well as train their students to make the most of their experience learning a language with online resources. Hubbard (2004) discuss the issue of learner training in CALL and points out the importance for L2 educators of being able to put themselves in their students' shoes when using technological resources for learning purposes. One result, in this case was that some of the teachers suggested that their language learners, even though they fell into the 'digital native' category according to their age and profile, neither had the actual knowledge to 'learn' using technology, nor the interest.

Perhaps, nowadays students may be 'social digital natives' but 'academic digital immigrant' learners at the same time. Bennet, Matton and Kervin (2008) critique Prensky's (2001) 'digital native' label and insist that this generalization of digital-savvy students is highly debatable considering the students' ability to evaluate information online (i.e. their electronic literacy), as they might not have the proper preparation or resources to become competent in technology for either social and/or learning purposes.

5.1.4.2 Transferability

It is clear that teachers, as well as students, need to improve their CALL competence to teach and learn the language using online tools. However, how can we expect this to happen if teachers feel reluctant or unprepared to teach the language online effectively? In general, teachers tend to believe that they have to learn everything from the beginning. Nonetheless, what they really need to be aware of is their existing technological and pedagogical knowledge they bring to CALL training and development courses and how can this be developed in order to feel comfortable in applying online resources for their L2 learners' benefit.

Hampel and Stickler (2005) classify the different technological and pedagogical skills that L2 teachers should possess for successful online teaching. If those criteria are placed under a magnifying glass, it could be observed that Hampel and Stickler's pedagogical skills for online instruction are strongly connected to language teaching in general. For example, in order to facilitate communicative competence in online learning environments, teachers should know or be able to apply strategies from, for instance, Communicative Language Teaching (CLT) in order to foster their learners' language skills in English. From a similar perspective, the technology standards proposed by Healey and colleagues (2011) also contain teaching aspects such as assessment, understanding and modification of materials that language teachers should be familiar with and /or have applied in non-technology-mediated language classrooms. Therefore, the language teaching knowledge that teachers have becomes relevant not only in terms of the strategies they can apply with their students when using technology, but also when assessing technology-mediated activities. In this sense, Motteram and Slaouti (2006) recommend designing and conducting CALL courses where teachers are encouraged to transfer their teaching skills as well as their general technological knowledge in order to increase their CALL competence more effectively.

The value of transferable language teaching knowledge and skills is confirmed in the data of this case study, as the teachers have stated to turn to their prior knowledge as language teachers to implement online teaching in their L2 classes. In particular, they used their knowledge about language learning approaches (e.g. Communicative Language Teaching), technological resources which they use in daily life (e.g. websites) what others have done (e.g. colleagues), suggested activities from teaching materials (e.g. CDs or accompanying websites in textbooks) and intuition (e.g. Choosing activities their knowledge of their students' profile suggested would motivate them).

The findings in this case study show that they are interested in increasing their CALL skills and knowledge by linking it to what they already know and can do. Therefore, instead of ignoring the teachers' background, it would be useful to raise their awareness about what knowledge they already possess. Borg (2003) states that teacher cognition should be part of teacher professional development courses, so it would be beneficial for teachers in CALL education to examine their 'CALL' teacher cognition (i.e. what they believe, think and do *with technological resources*), as a starting point to then continue to develop their CALL skills and knowledge. It is important that teachers are aware of their existing CALL knowledge and skills as this will allow them to realize what their needs are and how those can be supported and improved.

Research sub-question 2

How does the teachers' understanding of CALL theory and practice for online teaching develop through social, cognitive and teaching presence in an online community of inquiry?

5.2 How the teachers developed their CALL skills and knowledge: the 'spiral' pyramid

Hampel and Stickler (2005) proposed a series of pedagogical (i.e. related to the teaching of the language using online resources) and technological (i.e. related to the instrumental knowledge in order to manage online resources) skills that L2 teachers should have and/or acquire in order to use online teaching. Thus, the

objective of the online training and development course in this thesis was to equip L2 teachers with useful CALL knowledge and skills so they could apply online teaching effectively. The results showed that teachers developed existing skills and added new knowledge in CALL to facilitate online teaching. They also became aware of the several techniques in which technology can be used to teach the language in different contexts (e.g. online/ face-to-face instruction).

In their model, Hampel and Stickler (2005) claim that the skills teachers need for successful online language teaching are acquired and built upon in a pyramid-like manner. They suggest that teachers need to develop by learning the basics of technology, then progress towards achieving technological and pedagogical CALL competence, which they can use to develop creative ways of teaching online. Nevertheless, after observing the teachers' developmental process here, the data suggest that, contrary to Hampel and Stickler's model, the teachers in this case study developed their CALL competence in a rather 'spiral' manner. This means that the teachers' CALL skills and knowledge did not 'pile up' one on top of the other, or reach a CALL 'plateau'. Instead, a spiral pattern suggests they re-visited earlier topics but developed additional skills and knowledge each time they re-visited them in the online community (for example, each week a new topic for discussion). In addition, the teachers' previous CALL skills and knowledge were somehow normalized or confirmed in the online course as they explained that they had already used some of the strategies presented in the materials without consciously knowing that they were CALL techniques.

An investigation that concurs with this 'spiral' developmental process of teachers CALL skills and knowledge is that of Kozlova and Priven (2015) where language teachers were trained to use 3D worlds for language teaching. Their results were similar to those discussed here in terms of how teachers developed their CALL skills, as in both studies the teachers discussed their experiences and as they were exposed to new content and materials throughout the training.

One difference, however, is that in Kozlova and Priven's (2015) research the participants actually completed all their practical activities with might have further supported their development. The teachers in this case study, on the other hand, struggled to with the practice component in the course (see limitations section in the next chapter).

Hampel and Stickler's model (2005) has been re-examined in past research on CALL teacher education. Nevertheless, based on the findings in this case study regarding how teachers develop CALL skills and knowledge, it seems clear that skills for online teaching are developed in a spiral continuous cycle rather than in a pyramidal way. As a result, Hampel and Stickler's model would benefit from modification to better reflect the way in which teachers develop their CALL skills and knowledge. As shown in Kozlova and Priven (2015), even Compton's (2009) categories (i.e. novice, proficient, expert) need to be updated accordingly. Due to the challenging reality teachers face nowadays (e.g. the rapid pace of the evolution of online resources, the variety of techniques available for L2 teaching with technology and learners' digital profile) it is imperative that they are provided with the appropriate support to meet their needs in order to make their CALL education more effective.

Another study that observed L2 teachers' development for online teaching was that of Levy, Wang and Chen (2009). With a very similar CALL teacher training approach (theory, practice, reflection) and resources as in the case study of this thesis (though they incorporated peer evaluation and practice in real classroom contexts), the authors followed 2 language teachers through the process of becoming online tutors through individual and collaborative work. The authors concluded that reflection and experiential practice was beneficial for the participants in terms of their confidence and awareness of the affordances of online resources. In addition, they suggest L2 teachers should examine their existing teaching skills and CALL competence in order to modify them for online teaching.

The results in Levy, Wan and Chen (2009) resonate with the findings presented in this case study in relation to self-examination and transformation of language teaching knowledge and confidence for the effective application of online teaching in the language classrooms. One limitation in the Levy, Wang and Chang (2009) study (i.e. the actual process of development of the instructors' CALL skills is not explained clearly) was partially overcome in this thesis by tracking the teachers' access to the resources on Moodle in the online community of inquiry. This helped to provide useful evidence of one way in which the L2 teachers attempted to develop their CALL skills and knowledge.

5.2.1 Cognitive presence: Reflecting to develop CALL knowledge and skills for online teaching

In this case study, concepts such as online community of inquiry (Garrison et al, 2000) and transformative and experiential learning (Wallace, 1991; Woodward, 1991; Mezirow, 2000; Moon 2004) have been described in order to delineate the context of the research. Also, it has been stated here that reflection has been an important topic of investigation in language teacher education (pre-service and in-service), as it is considered to be a critical thinking process that could help teachers to grow as professionals and improve their teaching (Dewey, 1933; Akbary, 2007; Walsh, 2013).

In transformative learning theory (Mezirow, 2000), reflection is thought to be essential so as to promote a change in frames of reference towards a dilemma in order to be able re-establish new ideas and put them into practice in professional contexts. Garrison et al (2000) present reflection as a key element to foster cognitive presence in online environments and in the online course in this case study, this statement was confirmed. The teachers engaged in collaborative discussions and individual reflections which allowed them to talk about their experiences (reflection 'on' action, according to Shon, 1983). Also, they shared ideas with peers to increase their repertoire of teaching techniques to use online resources (online discussion forums) and wrote their own thoughts (blogs) to improve their pedagogical and technological teaching practices.

In L2 teacher education and CALL, the usefulness of blogs and online discussion forums has been widely investigated (Son, 2002; Hernandez-Ramos, 2004, Yang, 2009; Wopereis, Sloep, Poortman, 2010). According to the body of literature in these matters, there is a tendency to agree that these are emergent technological resources which enable teachers to engage in reflection and interactive experiential learning of CALL. In addition, it is recommended teachers should use online technologies, such as blogs or online discussion forums, to promote continuous professional development by creating supporting networks and online communities with colleagues beyond geographical barriers and educational institutions.

Regarding online discussion forums, they have been used as a means to foster reflection in social and collaborative online communities of inquiry. As the design of the online course in this case study took a socio-constructivist stance, shared reflection played a significant role in promoting cognitive presence to raise awareness of technology for online teaching. The dialogues in the online community in this investigation were fruitful in terms of sharing experiences, talk about the online course content and materials and how these could be applied in their teaching contexts.

While Walsh (2013) challenges the idea of conducting reflection in isolation (i.e. without interacting with other teachers) in adult education, data in this case study indicates that such private space (e.g. the blogs here) might be important to assimilate input, reformulate and, particularly, plan future actions. Furthermore, transformative learning (Mezirow, 2000) postulates that in order to re-organize ideas and change practices, self-examination is relevant so teachers can look at themselves and see their own actions which can be later serve as contributions for the reflective dialogue with peers, and vice versa. However, the use of online discussion forums could help to support Walsh's (2013) value of dialogic reflection in the sense of increasing opportunities for teachers to discuss about their teaching (teachers can share resources such as videos or recordings and analyse them

together synchronously or asynchronously) and getting feedback from colleagues beyond face-to-face environments.

Although critical reflection was present in the online community, as evidenced by the data provided by the teachers, it is not possible to come to a consensus on whether the individual or collaborative reflection (i.e. on blogs or discussion forums) was more useful for them. The data show that only 5 teachers kept personal blogs and all 8 of them interacted in the online forums. This might suggest that they preferred online discussion for exploring their roles, concerns and strategies about how to implement online teaching effectively. However, in the post-course interviews, those who used blogs indicated that both options were helpful for them. Additionally, it was possible to observe that the most 'resolutions' (i.e. reflection *for* action) took place in the teachers' blogs. Therefore, it could be concluded that, on the one hand, the private space of the blogs was used to think about and, furthermore, consolidate what was shared on the forums about online teaching. On the other hand, the collaborative environment in the online discussion forums was an opportunity for the teachers to engage in dialogue to explore their practices, views and discuss experiences with others in order to improve their online teaching. According to the teachers' data in this case study, thus, it would not be possible to say whether individual or collaborative reflection was more effective for the teachers' CALL skills and knowledge development.

Regardless of the limitations that the use of online forums (e.g. low participation at times) and blogs (e.g. confusing purpose) might have imposed on this case study, their implementation supported the teachers' CALL and skills development and awareness for online teaching. Reflection in blogs and online forums allowed the teachers in this case study to develop their CALL knowledge and skills through individual and collaborative exploration of teaching practices. Considering the data here, the idea of teachers as reflective thinkers versus reflective writers/talkers comes to mind as a way to understand why it was at times challenging to maintain social presence in both blogs and online discussion forums. Teachers may think about their teaching practices, experiences and concerns, but usually do not have

the opportunities to write or discuss them, especially in collaboration. Therefore, these instances should be promoted in teacher professional development in CALL courses.

5.2.2 Social presence: Learning in collaboration

The body of literature regarding online teaching and learning presents social presence as a key element for the success of online courses (Swan, 2002a, 2002b; Shea, 2006). When using online materials such as blogs or discussion forums, language teachers have to make sure that they create a comfortable online learning environment. This parallels face-to-face instruction, but it needs to be organized in the online context in ways that there is an 'actual' online classroom with rules and requirements. This is certainly a challenge for online learning as being part of an interactive online learning community is something that needs to gradually develop.

In this case study, one relevant finding was that the online teacher training and development course served as a model for the teachers of how they could use similar technological resources with their students to encourage online collaboration. For instance, during the online course, 2 of the teachers stated that they had started to use the virtual learning environment 'Edmodo' (educational platform similar to Facebook) with their students as a means to complement their L2 classes. Also, the group cohesion shown in this case study may have been influenced by the fact that the teachers shared a motivation and the common goal of developing their CALL skills and knowledge for online teaching, and thus needed each other's support. In addition, the online tutor's pre-course '*getting to know you*' activity may have helped to decrease isolation and foster a secure learning environment by facilitating informal social interaction before the start of the course. Thus, when the actual online course started, the teachers were not strangers anymore and realized they had similar interest and challenges to work on *together* during the online course.

Kerhwarld's (2008) claims can be associated to the case study presented in this thesis in the sense that social presence was co-constructed by the online tutor and the teachers, and towards the end of the online course maintained by the teachers themselves. Therefore, social presence was established in the online course and manifested by the frequency of the teachers' comments.

The results of this case study show that social presence played an important role in the teachers' CALL skills and knowledge development in the online community. This was tremendously important as well for the teachers' cognitive presence, as they demonstrated that they were comfortable with interacting among one another and with the online tutor in the weekly online discussion forums on Moodle. In doing so, they realized how important interaction is to promote dialogue and debate in online communities. Debating differs from plain dialogue as the former requires argumentation showing evidence to support the discussion (e.g. integration of knowledge from the course materials, for example). The latter, on the other hand, could be based only in personal opinions or experiences. The teachers considered this challenging at times in the online course and explained that more peer-to-peer interaction would have further supported their CALL competence development in the online community.

As in Stickler and Hampel (2007), the teachers here indicated that they would have preferred more collaboration with their colleagues (social presence) and further hands-on activities. The latter was difficult to achieve in this case study as the teachers did not have enough time to do their practical tasks, but nevertheless, were conscious that they were an essential part of the online course. This can also be linked to Hampel (2009) where the participants in her study about training online teachers indicated that online interaction and creation of a sense of community was difficult, particularly due to affective factors that could have an influence on participation. This is why having teachers that feel comfortable with the online medium is important. If it is difficult for teachers to socialize as online learners (i.e. as in this case study), they might struggle to promote social presence as online teachers as well.

In the case study of this thesis, it is also possible to agree with Hauck and Warnicke (2012) that experiential learning supported the teachers' development, due to the fact that they were exposed to authentic materials and reflected on their use for online teaching. Also, the findings in this case study suggest that social presence is, indeed, an important element in the online community and that it might overlap with teaching presence, particularly, regarding the involvement of the online tutor in the online community. Nevertheless, the analysis of social, cognitive and teaching presence tends to suggest that the teachers' optimal developmental processes were achieved when these three dimensions work in parallel. Thus, it is only possible to partially agree with Hauck and Warnicke's (2012) claims for the value of prioritizing social presence. Instead, it is suggested that social presence should be promoted as an enabler for critical reflection and effective facilitation in online communities.

The findings in this case study also concur with Wu, Gao and Zhan's (2014) outcomes in that social presence was found to be frequent in the online teacher training and development course. In addition, when the online training and development course started, communication with the online tutor (i.e. considered by the teachers as the 'expert') was frequent but decreased as the online course progressed. The teachers considered that the online community was a safe learning environment and that communication, in general, was appropriate for sharing experiences and collaborating in order to move cognitive presence. There were, as well, differences among the teachers. For example, Easter had difficulties interacting due to her personality, whereas Andy stated that there was need for more debate and critical engagement in the online community. Nevertheless, despite these differences, the teachers were able to create social presence. As a result, it might possible to say that there are degrees in social presence as here the learning environment was appropriate, but the interaction was, at times, complicated to maintain.

5.2.3 Teaching Presence: online teacher training and development course design

5.2.3.1 The teachers' training preferences in the online course: Videos

Considering the design-based research stance taken by this study, the identification of the materials, content and organization the teachers found useful in the course was crucial to propose guidelines for future design of teacher education in CALL courses. In this study, in relation to the materials in the online course, it was observed that the teachers most frequently used the videos uploaded on Moodle as an effective, simple and fast way to familiarize themselves with the course contents. This could be related to the teachers' own learning styles, as the online course design was aimed to cater for learning preferences in order to promote the teachers' CALL knowledge and skills development through different media. In general, videos have been used as a tool to support social and cognitive presence in virtual learning environments (Borup, West and Graham, 2011). Videos can be incorporated in CALL teacher training and development for different purposes. In online teacher training courses, these visual resources can usefully support critical reflection interaction and feedback. Additionally, videos are recommended for online tutors to promote teacher-student immediacy to avoid feelings of isolation, which could make an important difference in the effectiveness and outcomes of online training courses.

The teachers mostly used the videos from conferences (i.e. IATEFL) and/or talks (e.g. TED) where they could see other language teachers asking questions or engage in useful dialogues about educational technology. The fact that the teachers here preferred to watch talks with an audience might indicate a sense of 'belonging' with colleagues who share the same interests. This certainly helped to diminish initial issues of isolation and promoted social presence, as they were discussed in the online community. Also, they agreed that the introductory videos posted by the online tutor every week were tremendously helpful as they felt supported by a guiding figure (i.e. the tutor). Also, some of the videos provided models of activities and experiences where online teaching had been used with language learners. This was also useful for the teachers, as they were not only

provided with theoretical input, but also with ideas and models showing how online teaching could be implemented in a practical fashion. As most of the videos were accessible via Youtube and the online course's channel, the teachers were able to watch them again at any point in time.

5.2.3.2 Preparing language teachers for new technologies: Trending topics in the online course

One of the teachers' main reasons for enrolling in the online training and development CALL course was to learn how to use online teaching effectively with language learners. As a result, it is not surprising that the findings that emerged from the data (e.g. Moodle log files) show that the teachers were mainly interested in models and strategies that they could use to teach the language online (Garrison et al, 2000; Hampel and Stickler, 2005; Salmon, 2011). In particular, the findings indicate that within the alternatives of pedagogical strategies for online teaching, telecollaboration and mobile learning caught the teachers' attention in the online course. The data suggest that these choices might have been due to the novel and innovative properties telecollaboration and mobile learning provide for technology-mediated activities in language learning.

5.2.3.2.1 Telecollaboration

An important topic of discussion among the teachers in the online course regarding useful techniques for teaching online was telecollaboration in CALL. In the case of the participants in the online community of this case study, it is not as surprising that they considered telecollaboration as a primordial issue in language learning. Chile is geographically rather far from English speaking countries, so telecollaboration could be seen as a strategy to foster language development through communication between Chilean and other L2 students around the globe.

It is clear that telecollaboration can bring many benefits to the language classroom, not only in terms of promoting the development of language skills but also cultural aspects of the target language. Nevertheless, in order to face the challenges of telecollaboration and use it successfully with language learners, teachers need to develop their CALL skills and knowledge. O'Dowd (2015) states that teachers

should have a positive attitude towards telecollaboration, as this implies working in tandem with other teachers, engaging the students in a long term intercultural learning experience and changing their role. As telecollaboration promotes language and cultural exchange amongst language learners, teachers mainly play the role of facilitators and activity organizers.

5.2.3.2.2 Mobile learning

Mobile assisted language learning (MALL) was as well a topic of interest. The concept of mobile learning, though, becomes more and more flexible as new mobile technological advances appear (Kukulka-Hulme, 2008). Burton (2013, p.157) states that 'Since the mid-1990s, MALL has focused on the exploitation of five mobile technologies: pocket electronic dictionaries, personal digital assistants (PDAs), mobile phones, MP3 players, and most recently, ultra-portable tablet PCs.' However, today it is possible to find different technologies included in one device, as for example, portable tablets, so this shows the fast pace technology develops. In relation to Burton's (2013) timeline, it could be possible to say that the growing use of mobile devices for language learning correlates with both the evolution of technology and the change in language learners' profile as 'digital natives' (Prensky, 2001). Bearing this in mind, mobile technologies can offer teachers a wide range of possibilities to adapt language learning, inside and outside the language classroom, according to their teaching contexts, learners' needs and available resources. Thus, it is recommended to prepare teachers for up-to-date technologies.

Considering the results in this case study, the teachers acknowledged the usefulness that mobile technologies can have with their language learners. Nevertheless, they also explained that mobile learning can be challenging for them, mainly due to the pedagogical choices and technological skills necessary to implement mobile learning effectively. Once again, language teachers are exposed to technological resources that can be used for online teaching, but CALL skills and knowledge are required. Although a specific mobile learning skills framework is yet to be proposed (e.g. O'Dowd's telecollaboration scheme), it is clear that

teachers should develop CALL skills and knowledge, as mobile learning can be considered as an alternative within online teaching. For these reasons, teachers should be familiarized with such evolving mobile resources. As discussed in the literature review section of this thesis, mobile devices could also be used for teacher training in CALL. The 'English in Action' teacher training course (Woodward, Griffiths and Solly, 2013) was conducted via mobile phones and the participants had positive views about it. However, it was observed that the training course could have further supported the participants' professional development if they had known how to use mobile phones effectively so as to make the most of the training experience.

5.2.3.3 Teaching Presence: The Online Tutor

5.2.3.3.1 Online tutor's roles

The roles online tutors should fulfill (e.g. designer, facilitator, expert, participant) when delivering online course have been the object of observation and debate (Stacey, 2002; Hockly, 2011; Salmon, 2011). In general, the involvement of the online tutors in the design of online courses will depend on the policies of the educational institutions that provide them, as there are financial considerations to take into account. Sometimes, courses are pre-defined and online tutors only need to be trained in how to implement it, but in other cases, play a vital part in ensuring the development so the design is suitable for the learners. Nevertheless, the degree of participation online tutors have in this part of the process can be a double-edged sword. If the online tutor participates actively, although their workload increases, the course could be tailored more closely to the learners' needs and the online tutor more prepared to solve any sort of difficulties they may come across in the implementation. On the other hand, by not being involved in it, the online tutor may have limited knowledge the different issues regarding how appropriate the contents are, learner profile, flexibility and a variety of technical and pedagogical constraints that may rise in the course.

Maintaining teaching presence in an online community can be challenging for the tutor in most online courses. Particularly, in terms of keeping the right balance

between when to take an active role (without ‘taking over’), fostering learning or only making sure that the members of the online community are doing their work. In this case study, the online tutor’s previous experience as language teacher, teacher trainer, CALL researcher and online tutor was useful in constructing teaching presence. Nevertheless, making decisions to maintain the teachers’ engagement for the benefit of the online community as the course progressed was complex. For example, the course design included one practical activity per week (8 activities in total). However, as weeks passed, it was evident that the teachers were not able to keep up with all the activities (i.e. blogs, online discussion forums and practice). As the course took place during the end of the academic term in Chile, the teachers were dealing with heavy workload, so this undermined their engagement in the course. For this reason, the practical activities were limited to 3, the last one being a teaching project they could develop throughout the course. Also, ‘moral support’ emails were sent in addition to the usual reminders as a means to show understanding to their situation, but at the same time, to encourage them to keep working on Moodle. These decisions made by the online tutor surely facilitated the teachers’ work on Moodle, but most of them did not complete their practical project at the end of the course. Unfortunately, time limitations have been, and continue to be, identified as an issue for teacher training and development experiences, especially, if the online course does not provide a formal certification that shows for the teachers’ efforts.

5.2.3.3.2 Online tutor’s presence and immediacy

The findings in this case study show that the presence of the online tutor (this researcher) was essential for the teachers’ developmental process in CALL skills and knowledge for online teaching. Furthermore, the teachers stated that having a ‘real’ person (as opposed to a ‘virtual’ tutor, for example) in this guided online course was beneficial, despite the fact that the online tutor-teachers contact took place mainly via asynchronous resources (weekly introductory videos on Youtube, email, discussion forums on Moodle). The teachers argued that the online tutor’s presence supported their motivation to participate in the online course and engage in the discussions about online language teaching. Additionally, the teachers stated

that feedback from the tutor was crucial in the online discussions and practical activities, mostly because they were able to learn from her expertise in CALL.

Also, and unique to the case study of this thesis, the teaching presence analysis clearly showed how the online tutor's roles changed during the online course. From a predominant presence at the beginning of the online course, the online tutor's involvement decreased towards the end of online course. This suggests that the teachers were able to learn from each other and maintain the online community initially highly supported by the online tutor. As found in Son (2002) not only the presence of online tutors is valued in online teacher training in CALL but also their active involvement. Almeida d'Eca and Gonzalez (2006) also agree with the presence of an online tutor in CALL online teacher education. Although no evidence about the online tutor's role or actions is discussed in their study about a free CALL L2 teacher training workshop-'Webheads in action'-the authors indicate that one of the most important factors for the success of the training course was to have had a 'human' online tutor. Mainly, the authors claim, due to the personal bond developed between participants and online tutor.

5.2.3.3.3 Online tutor's feedback

Hattie and Timperley (2007, p.81) define feedback as '[feedback] is conceptualized as information by any agent (i.e. teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding'. Therefore, feedback supports learning in the (re) elaboration of ideas in order to improve comprehension and reinforce knowledge. Anderson (2008, p.352) suggests that feedback in online learning is important, in order to 'provide motivation, shaping behaviour and developing mental constructs', therefore, the online tutor should be able to create, implement, have expertise and conduct the course effectively. This is difficult, as online tutors, for example, have to consider how fast they can actually provide feedback (i.e. at times, students tend to have unrealistic expectations) and also what kind of feedback is more beneficial. In addition, online tutors have to deal with the way they interact with the online community as a group and also personally with each student taking into account their individualities.

The relevance of feedback from the online tutor was acknowledged by the teachers. They explained that feedback from the tutor (e.g. responses to their pedagogical and technological queries, encouragement and motivation to participate in the online community) helped them to develop their CALL technological and pedagogical skills. The teachers also became aware of the online tutor's different roles and realized they will have to do the same when they teach online. In this case study, the fact that this researcher had a full time commitment to the online course helped to promote cognitive, social and teaching presence. However, this might not be the case in other research/ online teaching contexts. What seems to be clear from the findings is that the presence of the online tutor seemed to have been important for teachers' CALL skills and knowledge development. The online tutor's teaching presence was not only important for guiding the teachers but also for motivating them and showing them ways to increase their CALL competence independently.

5.2.3.3.4 *Who should train the teachers in CALL for online teaching?*

The reality of the online tutors discussed above, takes the discussion towards *who* should be in charge of training L2 teachers in CALL for online teaching so they are able to fulfill their roles effectively. Most of the L2 teacher training in CALL studies that have been presented throughout this thesis were guided by experienced CALL researchers as online tutors (e.g. Bauer-Ramazani, 2006; Motteram and Slaouti, 2006; Motteram, 2006, 2009; Beaven et al, 2010). It is clear that in this case study this researcher's experience as an EFL teacher and teacher trainer was an advantage for promoting cognitive, social and teaching presence.

In some cases, as suggested in the literature review, teachers might learn how to teach online by themselves through self-directed CALL training and development (Lewis, 2006). For example, Hampel and Stickler's (2005) framework was used for the basis of the DOTS project implemented to promote the development of online L2 teaching skills. The team responsible for designing DOTS (Beaven et al, 2010) conducted a study to evaluate the project in relation to the teachers' needs,

perceptions on technology, materials and benefits of online training. The findings highlight issues such as teachers' confidence and the reason for using technological resources in their teaching. In terms of their self-directed CALL preparation, the DOTS participants discussed the necessity of possessing general knowledge about existing online resources and techniques for teaching and also competence in using online tools they are rather unfamiliar with (e.g. virtual worlds such as Second Life).

The DOTS participants also pointed out the importance of practical activities and information exchange with colleagues in order to become more CALL competent. Moreover, they pointed out that even though learning from peers was highly profitable, the presence of a qualified trainer or tutor as a guide in their developmental process would have further enhanced their training experience.

Therefore, the discussion on who should prepare teachers in CALL and the possible alternatives teachers have to develop their CALL skills and knowledge should be further explored. Particularly in the matter of how and who can better support the teachers in guided or self-directed training courses (i.e. Healey's (2013) proposal on peer-mentoring schemes for CALL). Based on the findings in this thesis' case study, the presence of the online tutor was valuable for all the teachers. Whether the teachers benefited from the online tutor as the 'expert', especially at the beginning of the online course, or a 'peer', towards the end, the presence of a guiding figure in online teacher training for CALL is strongly recommended.

As Chapelle suggested in her plenary speech in the EUROCALL Conference in 2014, technology is part of the language classroom and teachers have to be able to *integrate* it fruitfully so it is advantageous for L2 learners in both face-to-face and online teaching. This means that the teachers need to be able to understand the pedagogical and technological aspects of teaching with technological resources. Such knowledge could be obtained on CALL teacher training and development courses based on a solid design directed towards the teachers' needs.

The data discussed in this case study regarding how teachers developed their CALL skills in a community of inquiry is especially relevant to the design of teacher training and development courses in CALL. Particularly, as technologically-competent language teachers are in demand and for long term CALL activities, such as telecollaboration, or complex technological resources, such as 3D virtual worlds. Data on how teachers enhance their CALL skills and knowledge could promote the design of courses which help language educators not only to improve their CALL competence, but also to maintain it in times where technology evolves rapidly. Overall, from this case study's findings, it is possible to observe that:

- The online teacher training and development course design and implementation (theory, practice and reflection) supported the spiral development of the teachers' CALL skills and knowledge for online teaching.
- Transformative learning theory (Mezirow, 2000) supported the teachers' CALL skills and knowledge. They were able to self-analyse their teaching practices, views, concerns and challenges in teaching with online resources. This helped them to identify their needs (e.g. their feelings of insecurity) and how they could be met in the online course
- Experiential learning (Wallace, 1991; Woodward, 1991; Moon, 2004) seems to have been useful for the teachers' developmental process of their CALL skills and knowledge as they were immersed in a learning environment (e.g. online course on Moodle as an example of the use of technology for professional development). The teachers were also trained with online resources (e.g. blogs, videos) they could potentially use with their own learners and in their on-going teacher education in technology. Additionally, even though in this case study hands-on activities were included, their application was not consistent, and there is no doubt that practice should be considered in CALL training and development courses as a means to give teachers the opportunity to link theoretical knowledge with practical use.

- The socio-constructivist (Dewey, 1916, 1933) design that supported the online course promoted the teachers' individual and social CALL skills and knowledge development. Private and collaborative spaces for reflection supported the teachers' cognitive presence in the online community. Although there was no clear consensus in this case study on which tool for reflection was more efficient (e.g. blogs vs. online discussion forums), the fact that they were available was useful for the teachers' developmental process.
- Social presence played an important role in the online community. A safe learning environment and the interactions in the online discussion forums contributed to the teachers' CALL knowledge and skills development. In this case study, promoting social presence was challenging at times, yet necessary to foster cognitive and teaching presence in the online community.
- Regarding teaching presence, the online tutor was a key participant in the online community. Regardless the online tutor's role(s) during the online course, her presence was beneficial for the teachers' CALL skills and knowledge development and supported the sustainability of the online community.
- In relation to the contents and materials in CALL course design, it is important to consider the teachers' needs. The design of the online course was mostly based on a needs analysis survey conducted prior to the online course. Additionally, through the data analysis after the online course, it was possible to identify that the teachers were interested in trending and novel technologies and pedagogical strategies they could use with their L2 learners. As technological resources evolve rapidly, teachers should be prepared to deal with and include new technologies confidently in their teaching.

Research sub-question 3

What evidence is there of transformation in the teachers' attitudes towards CALL, knowledge and skills for CALL and online teaching of languages?

5.3 The teachers' CALL knowledge and skills for online teaching: From intuition to reason

Research in teacher education in CALL has suggested that language teacher training and development courses in CALL should be designed to support L2 teachers by promoting awareness and effective use of technological resources (Johnson, 2009; Guichon and Hauck, 2011; Motteram, 2012). Based on this, the goal in teacher professional development in CALL should not be about L2 teachers being competent on every single technological resource available. Instead, they should learn how to adapt their underlying knowledge and skills to developments in the technology.

In this case study most of the teachers agreed that upon completion of the online course, they were more prepared for online teaching. They concurred that choosing technological resources and planning intuitively, as stated in their pre-course data, had been replaced with more rational (or established) knowledge. These developed CALL skills and knowledge after the online course serve as a means to support teachers to make independent, innovative and realistic decisions for their online teaching. Also, teachers can justify their technological and pedagogical choices with their L2 learners, colleagues and educational institution.

5.3.1 L2 teachers CALL attitudes, confidence and awareness

The L2 teachers from this case study were already familiar with technology for teaching and had used it, to some extent, with their L2 learners before the start of the online course. Nevertheless, they were still all unsure about using online resources, despite the fact that a) they had experience of using online resources themselves (such as Facebook), b) they were experienced language teachers, and c) examples and suggestions of teaching with technology were available to them.

The post-course data, though, showed that after developing their CALL skills and knowledge in the online course, the teachers became more confident. Therefore, the more comfortable the teachers felt about CALL, the more chances there were for them to apply it in the L2 class. It is a matter of *'getting to know'* technology, as one of the teachers said, in order to make informed decisions. As a result, they became more motivated and less anxious about teaching languages online to their language learners.

Also, the results in this case study indicate that the development of pedagogical and technological skills in CALL raised awareness among the teachers. The analysis of the teachers' qualitative and quantitative data showed the ways teachers became more aware of their prior language teaching knowledge and CALL competence, the materials and strategies they could use and how these could be included in their language courses. The initial 'dilemma' (Mezirow, 2000) of how to teach languages online was shared, discussed and, to some extent, 'solved' due to the teachers' interactions and reflections in the online community. This may be useful for the teachers not only in the sense of using online teaching with L2 learners, but also for participating actively in online communities of inquiry and sharing their knowledge beyond the online training and development course.

5.3.2 'Digital Self-esteem': The outcome of L2 teachers' development in the online training and development course

When discussing L2 teachers' attitudes and confidence in the literature review section of this thesis, it was suggested that these issues could be related to L2 teachers' self-esteem. Considering the psychological origins of the self-esteem concept, this term has been used to refer to how social and cognitive elements influence people's self-perception and value. In education in general, there is no clear consensus about the link between self-esteem and academic performance. However, in second language teaching and learning, self-esteem could be related to how affective factors influence L2 learners' disposition to acquire a second language (Rubio, 2007).

Although it has been said that matters of self-esteem in CALL (among teachers and learners) have been scarcely investigated (Cutrim Schmid, 2007; Tayebinik and Puteh, 2012), the data in this case study suggests that self-esteem should be considered in CALL teacher education. In this investigation, it can be stated that the combination of attitudes towards CALL, confidence, awareness and the development of CALL pedagogical and technological competence in the online community supported the teachers' understanding of the role of CALL resources for language teaching. This co-constructed understanding is what this researcher proposes to denominate as 'digital self-esteem'.

In this thesis, 'digital self-esteem' could be interpreted not only as the positive result of the teachers' post-online course changes in terms of how they could choose, produce and use online technology with their L2 learners. The teachers' 'digital self-esteem' may have also fostered their interest in continuing their professional education in CALL independently and/or with colleagues. 'Digital self-esteem' is therefore concerned with how teachers perceive and feel about themselves in relation to the use of online teaching with L2 learners and also to the way they take responsibility for their professional development in CALL. It is a sentiment that leads to high or low levels of confidence in relation to how well they are able to manage, discuss and integrate technological resources for online teaching. Consequently, 'digital self-esteem' and confidence in applying online resources in the language classroom go hand-in-hand. Bearing this in mind, it might be possible to see the concept of L2 teachers' self-esteem as an aspect of teachers' cognition. As the former has to do with how people evaluate themselves and the latter deals with teachers' attitudes and beliefs, there could be a connection worth exploring to help teachers develop professionally. Possibly, CALL researchers have to go back to basics and focus more on understanding teachers' cognition in CALL *and* the role of digital self-esteem before asking teachers to get involved in CALL teacher education courses. For example, as a starting point, scales used in psychology to measure self-esteem could be adapted and applied (for scales, see Heatherton and Polivy, 1991).

Is the exploration or incorporation of 'digital self-esteem' into CALL teacher education professional development courses a path to follow? As shown in the results in this case study, the teachers' social presence is strongly related to the unity of the group and the comfort of the environment they are learning in. Thus, rather than just being confident, teachers should, perhaps, build up a solid 'digital self-esteem' in order to be able to interact with colleagues in online communities and take responsibility for their continuous CALL professional development.

5.3.3 What happened with the teachers after the online course?

The actual changes that the teachers make to their teaching actions after professional development courses need further observation, as a transformation in views might not always lead to immediate change (Orlando, 2009). In this case study, although evidence for changes was identified, the actual implementation of those changes was not a focus of investigation. Having said that, it is, though, possible to provide some indicators about what happened with the teachers after the online course. It is important to clarify that this information was not part of the data initially collected. It was provided by one of the teachers to this researcher via informal email exchange and Skype conversations months after the online course had ended.

5.3.3.1 Online teaching on Easter Island

An example of life after the online teacher training course is the case of the teacher on Easter Island. Easter was one of the active teachers in the online course, despite her struggles with connectivity on the island and shy personality. Her interest in CALL and her developed skills and knowledge in the online course motivated her to plan long term projects with her students on the island. One of these projects was using mobile learning to promote cultural awareness, as the multicultural profile of the island ('Rapa Nui' culture) is an important part of learning for Easter Islanders. This was Easter's first email message:

'Hi Sandra, I am thinking of planning a learning experience more participative and with technology as the main support for 2014. Please, let me know if you would like to participate with us.' (Easter- December 2013)

In a Skype conversation this researcher had with Easter a few months after the online course (December, 2013), it was possible to gather some experiences from Easter's students. They seemed enthusiastic about the idea of using mobile phones for their learning. Following this conversation, Easter sent this researcher another email saying that the activity had been a success, as the students were motivated and willing to use the target language.

Easter's second project (July-2014) was related to telecollaboration, as she explains in her second message:

'Sandra, I am writing to you because, I would like to ask for some activities to implement the skype communication with a group in a Hawaiian school. I'd appreciate your help. Thanks.' (Easter- July, 2014)

Her idea was to use videoconferencing with Skype between her students and peers on a school in Hawaii. It was discussed earlier in this chapter (teachers' choices on materials section) that one of the popular topics presented in the course was indeed that of telecollaboration (i.e. cross-cultural exchanges), so Easter actually considered some of the ideas suggested in the online community. This is a great step for Easter as she was the only full time English teacher in the island's school. Hopefully, she will manage to obtain proper support to materialize this and other projects she decides to implement using technological resources. Regarding the other teachers, unfortunately, it is not possible to provide concrete information about any long-term practical activity after the online course.

Summary

In this chapter, the main findings of the observation of L2 teachers' CALL skills and knowledge development for online teaching have been discussed. This examination provided answers to the research questions of this case study regarding (1) L2 teachers' existing attitudes towards technology, prior online teaching and CALL knowledge and skills (2) the teachers' actions, choices and factors that supported the teachers' CALL skills and knowledge for online teaching in the online community and (3) changes that teachers underwent during/after the online course. The relevance of exploring the teachers' profile and background has

been highlighted in terms of the influence this might have on whether and how teachers use online resources. Also, it has been suggested that teachers' develop their online teaching skills in a rather spiral manner as their CALL skills and knowledge is recycled. This challenges Hampel and Stickler's (2005) pyramidal model of skills for online language teaching. The teachers' preferences regarding the online course design were also presented and this show that teachers should be prepared for new technologies. The positive value of the online tutor's teaching presence in the online course was also discussed. Finally, the teachers' changes upon completion of the online course, mainly in confidence and awareness of the use of technological resources for online teaching, were explained. Additionally, the outcome of the L2 teachers' developmental processes, namely confidence and developed CALL skills and knowledge, has been proposed to be called 'digital self-esteem'. Finally, an example of one teacher using technology with language students after the online course was presented.

Chapter 6. Conclusion

In this chapter, a summary of the case study will be provided in section 6.1. In the following section, 6.2, the research questions that led this investigation will be revisited in order to summarize the main results. Later in 6.3, theoretical and pedagogical implications of the case study will be presented. Limitations will be discussed in section 6.4. Recommendations for further research will be made as well in section 6.5, as the case study findings outline the need to continue investigating aspects of L2 teacher development in CALL. Final remarks are offered at the end of this chapter.

6. 1 Brief Summary of the case study

In research in teacher training and development in CALL, investigators have (1) examined language teachers' attitudes towards CALL (Egbert, Paulus and Nakamichi, 2002; Kessler, 2007), (2) identified the skills language teachers need for online teaching (Hampel and Sticker, 2005; Compton 2009; Healey et al, 2011) and (3) proposed and, to some extent, studied different models for educating language teachers in CALL (Motteram, 2006; Levi, Wang and Chen, 2009, McNeil, 2013). Nevertheless, there is little evidence on how teachers become CALL competent. Thus, the teachers' developmental processes in CALL training and development courses (e.g. teachers' interactions, actions and choices) is relevant. Especially, as a means to design sustainable teacher training models and encourage teachers to continuing their professional development in CALL.

Therefore, this case study examined how 8 in-service L2 teachers in Chile and Easter Island developed their CALL skills and knowledge for online teaching in a volunteer online teacher training and development course. The language teacher-technology relation has been complex over the years due to technological and pedagogical CALL skills and knowledge that L2 educators should possess becoming more important as technological resources evolve. Consequently, one aim of this case study is to suggest guidelines (for course design, materials and the

role of online tutors) to make sustainable and effective L2 teacher training and development models based on transformative learning.

The theoretical and methodological framework of this case study was based upon a socio-constructivist and an interpretive epistemological paradigm. In order to guide the case study, research questions were produced to explore (1) the attitudes and CALL skills and knowledge the teachers brought to the online course (2) the teachers' CALL skills and knowledge development in an online community of inquiry and (3) evidence of changes that occurred after the online course. As a means to observe how the teachers developed their CALL skills and knowledge, a guided online teacher training and development course was designed and implemented on the VLE Moodle. In this sense, the study took a design-based research stance, as the online course was designed, implemented and evaluated. Thus, the online course served as both research instrument and online learning environment for the teachers.

The online course design drew on principles of experiential and transformative learning, the community of inquiry model and the skills for online language teaching. The online course syllabus integrated CALL-related theoretical input, practical activities and individual and collaborative reflection. In order to gather rich evidence to observe the teachers' developmental processes from different angles, data were gathered using mixed methods. Pre-and post- online course questionnaires and interviews were conducted via Google Docs and Skype respectively. Also, the teachers' log files and posts on Moodle (i.e. discussion forums and blogs) were collected. The analytical framework used Content Analysis as the main technique to analyse qualitative data to explore the teachers' CALL skills and knowledge development. The codes for the analysis were provided by the community of inquiry model (Garrison et al, 2000) for online learning in order to examine cognitive, social and teaching presence in the online course.

The transformative education scale for distance learners suggested by Motteram (2006) was used as an instrument to understand the L2 teachers' changes after the online course. Descriptive statistics, namely frequencies and percentages, were applied to pre-post online course questionnaires. The teachers' Moodle log files were also quantified.

6.2 Research Questions Re-Examined

'How do L2 teachers develop their CALL attitudes, skills and knowledge for online teaching in an online training and development course for CALL?'

6.2.1 Research sub-question 1

What attitudes towards CALL, pedagogical skills and knowledge of CALL and online teaching of languages do teachers bring to the course?

The teachers came to the online course with a positive attitude towards CALL, as they acknowledged its usefulness for language teaching. In fact, they stated that, to some extent, they used technology in their language courses, however, wanted to improve their knowledge. This was one of the reasons they wanted to participate in the online course.

In general, when using technology, the teachers suggested they used it mainly intuitively. This means that they based their technological choices on what seemed to motivate their language students, so using their existing knowledge of student needs. They also suggested that they used their knowledge as regular users of technology (e.g. power point presentations, websites) and as language teachers (e.g. Communicative language teaching) when planning technology-mediated activities. Therefore, the teachers transferred techniques from language teaching approaches when applying technological resources with language learners. In addition, the teacher stated that they also used 'ready-made' activities. For example, exercises from their language courses' textbook's CDs, or activities they found on the Internet (e.g. British Council website).

Although these strategies the teachers used for the application of technological resources with language learners were helpful to them, they still felt insecure about how to effectively design, implement and evaluate CALL-mediated activities. This can be related to the CALL skills and knowledge the teachers brought to the online course, due to the fact that they were mainly novice users, with the exception of two proficient and one experienced teacher.

However, regardless of this classification they all shared the same sentiment of 'wanting to learn more' about technology in order to meet their students' needs. Together with insecurity, a sense of isolation was identified among the teachers as well. They believed collaborating with colleagues in their teaching context was challenging. The teachers explained that their peers were simply not interested in using technology with their L2 learners, mainly due to a lack of knowledge or time. Additionally, the teachers said one factor which sometimes hinders the use of technology was its unreliability. They explained it was frustrating to plan a lesson that would not take place due to a technological failure. This can be related to the support that educational institutions can provide to teachers, so they have the appropriate tools and help to implement technology in their language courses.

The evidence in research sub-question 1 shows how important it is for teachers to be able to reflect on and analyse their teaching practices in technology individually and collaboratively. This is useful for teachers so as to identify their strengths and weaknesses which can be addressed and improved in CALL teacher education courses, and after, to promote continuous professional development.

6.2.2 Research sub-question 2

How does the teachers' understanding of CALL theory and practice for online teaching develop through social, cognitive and teaching presence in an online community of inquiry?

The examination of the teachers' CALL skills and knowledge development in the community of inquiry through social, cognitive and teaching presence suggests that:

The teachers' developed their CALL skills and knowledge for online teaching in a spiral manner, rather than in a hierarchical pyramidal way, as proposed by Hampel and Stickler (2005). Evidence in this case study indicates that the teachers' seemed to have engaged in a spiral of technological and pedagogical skills development when they 'recycled' their CALL skills and knowledge every week.

Regarding social presence in the online course, the findings indicate that the online community was cohesive and provided a safe learning environment for the teachers. Furthermore, Moodle was seen as an example of how technology could be used for both language learning and professional development. The teachers co-constructed CALL skills and knowledge individually and collaboratively. It is important to explain that interaction was sometimes challenging in the online course. It was observed that further 'debate-oriented' discussions would have supported the teachers' CALL and skills developmental process in the online community.

Reflection was essential in the online community. Based on the cognitive presence analysis, the teachers critically developed their CALL skills and knowledge based on their teaching experiences and the integration of theoretical input in the online course. The findings indicate that the teachers found both blogs and online discussion forums useful as reflection tools. The discussion Walsh (2013) suggests on dialogic versus individual reflection invites CALL teacher training designers to engage in this ongoing argument and make decisions that foster reflective learning and teaching in professional development courses, mostly if done online.

Reflective thinking was one of the pillars of the course design as it was aligned with Dewey's socio-constructivist approach and transformative learning theory (Mezirow, 2000). In this sense, the teachers started exploring their own teaching realities prior to the online course and had the opportunity to share ideas and experiences with colleagues. Also, they did not only exchange information with peers, but also interacted with an online tutor and materials they were interested in. This reflective habit was meant to be useful not only during the online course, but upon course completion as well. Reflection can have useful implications for the

teachers' pedagogical practices in terms of promoting, for example, action research (i.e. by identifying a dilemma within their teaching context) and critical thinking for sustainable CALL professional development.

The teachers' choices of topics suggest that CALL teacher trainers and developers should consider preparing teachers for future technologies. Technology evolves rapidly, so L2 teachers need to develop their CALL skills and knowledge in order to face these changes. This will serve them so they can implement up-to-date technology effectively. For example, mobile technologies can support language learning beyond the language classroom, and even in informal settings (e.g. online games) which can also be beneficial for language learners. Additionally, technologically-competent teachers might be less discouraged by the complexity of novel technological resources and willing to give them a try in their language courses.

Moreover, it was found that visual resources (e.g. videos) strongly supported the teachers' CALL skills and knowledge development in the online course. For instance, the introductory videos that the online tutor created and uploaded in the online course's Youtube channel contributed to promote social presence and, at the same time, decrease the sense of isolation the teachers felt at the beginning of the online course. Also, the videos that contained talks or conferences made the teachers feel there were other language teaching professionals with similar interest and that strategies to improve teaching with technology were being discussed. Additionally, as some of the videos showed examples of technology-mediated activities for language teaching, they serve as models for the teachers. Therefore, videos should be exploited as a CALL teacher training resource, not only as a means to deliver content, but also as a tool for analysing teaching practices and improve professional development.

The presence of the online tutor was relevant for the teachers' CALL skills and knowledge development in the online course. The teachers' perceived the online tutor as a guide who supported them during the online course (i.e. expert, peer). It can be concluded from the findings in this case study that the fact of having a

'human' guiding figure (as opposed to computer-generated tutors) that the teachers were able to 'see' (although the online tutor was geographically removed from the teachers) was very influential for the teachers' developmental process in the online community. This makes the discussion turn to the roles online tutors play in online CALL professional development. For example, the feedback and comments the teachers received from the online tutor in the online community seem to have made a difference for maintaining the online community. Therefore, considerations on how to manage online training courses should be taken into account by online tutors in terms of measuring their involvement from a strong presence at the beginning towards a more 'companion' figure at the end of the course.

Also, who should be the online tutor in CALL teacher training and development courses? The findings in this case study showed that the teachers were comfortable with having 'one of their own' (i.e. a language teacher) as their online tutor. This was mainly because they considered that the online tutor was not only able to understand language teaching, but also had expertise about teaching with CALL. Therefore, CALL teacher training course developers should ask themselves, and language teachers in particular, who would be suitable as online tutor; a peer, an expert, both?

The findings from research question 2 show elements (i.e. reflection in blogs and forums, videos, new technologies and the guidance of a tutor) which can foster the spiral development of teachers' CALL skills and knowledge in online teacher education for CALL courses. Therefore, they should be integrated in the design of sustainable courses.

6.2.3 Research sub-question 3

What evidence is there of transformation in the teachers' attitudes towards CALL, knowledge and skills for CALL and online teaching of languages?

After the teachers' developed their CALL skills and knowledge individually and with colleagues in the online community, they became more aware of the technological resources and pedagogical strategies they could use to apply technology effectively with language learners. Therefore, the teachers felt confident and

empowered to innovate with technology in their language courses. Prior to the online course, most of the teachers felt insecure about their CALL skills and knowledge regardless their CALL competence classification (novice, proficient or expert). After the online course, however, it was observed that the teachers progressed and certainly believed that they could use technology more confidently. Also, evidence shown in the case study suggests that it could be possible for teachers to find themselves 'in-between' categories and have mixed abilities, depending on the technology they are required or have chosen to use.

The concept of 'Digital self-esteem' is a key finding and has been introduced in this thesis as a way to explain the outcome of the teachers' developmental process in the online community. Most of the L2 teachers' post-course changes are related to their awareness and confidence of the benefits of online resources. In addition, apart from feeling more confident to apply online tools, they felt prepared to transmit this knowledge. As a result, teachers' 'digital self-esteem' may have an influence on their decision making criteria when using technological resources. Also, it might inspire them to take pedagogical and professional development 'risks' in order to innovate in the language classroom and continuing their CALL skills and knowledge development in (online) communities of inquiry.

Digital self-esteem is a novel term emerged from the evidence of research question 3 in this case study. Therefore, it should be explored as an element that can support a sustainable education of L2 teachers in CALL.

6.3 Implications for L2 Teacher Training and Development in CALL

6.3.1 Original core contribution to knowledge: Reflection, CALL skills and knowledge development, teaching presence and digital self-esteem.

The main research question posed in this thesis was with how language teachers developed their CALL attitudes, skills and knowledge for online teaching in an online course for CALL. The aim of this study was, therefore, to observe this developmental process in order to provide recommendations to improve teacher training and development models for CALL. Bearing this in mind, and considering

the findings of each research sub-question discussed in section 6.2, it is possible to identify central elements which contribute to our understanding of teacher education in CALL. The results provide strong evidence for the value of teachers analysing their prior knowledge in language teaching and in CALL ('CALL teacher cognition') in order to become aware of their strengths and weaknesses. This self-analysis will help educators to address these issues in their CALL courses. Additionally, there is strong evidence that reflection whether it is conducted individually or in groups should be prioritized on the CALL teacher education agenda, as in this case study it was shown to be essential for the teachers' CALL skills and knowledge development. This is particularly important in times where technology evolves rapidly and CALL skilful teachers are in demand.

Also, the results of this study suggest the spiral development of CALL competence, as teachers constantly revisited and co-constructed knowledge according to the tools or topics which they were learning. Thus, their development was not pyramidal or linear as suggested in the CALL literature (Hampel and Stickler, 2005; Compton, 2009, Salmon, 2011).

Another central issue which emerged from this study is the presence of an online tutor for CALL courses. This study demonstrated the value of data about how the tutor managed the course and supported the online community for the effective implementation of online courses for CALL.

The concept of 'digital self-esteem' is a novel term which originated from the outcome of the teachers' developmental processes in the online community. It is thought that if teachers (1) gain confidence in CALL (2) are aware of the technological and pedagogical techniques and tools available for online language teaching and (3) know through reflection how to develop their CALL skills and knowledge, they will not only become effective users of CALL but will be able to maintain, continue and transmit this knowledge successfully. 'Digital self-esteem' is therefore a useful term for highlighting the aim of this process.

6.3.2 Theoretical implications

The theoretical implications of this case study can be mainly related to the way knowledge was constructed by the teachers' CALL and skills development in both the community of inquiry and individually. The design of the course fostered transformative and experiential learning (Wallace, 1991; Mezirow, 2000) about technology in an online community of inquiry (Garrison et al, 2000), thus gave the teachers the opportunity to actively engage in reflective processes. Reflection therefore allowed them to understand themselves as L2 teachers, technology, and peers with similar/different ideas. Therefore, it is recommended that CALL researchers and practitioners to continue including socio-constructivist models in CALL teacher education courses. It is undeniable that Vygotsky's (1978) sociocultural theory is valuable to observe and determine the relevance of social context in teacher, and CALL teacher, professional development. Nevertheless, it is also essential to remember that social environments are composed by individuals with different learning characteristics who are willing to reach a learning goal collaboratively. Thus, as in this case study, Dewey's perspective (1933) of personal and shared knowledge should be considered for future implementation of CALL teacher education courses.

6.3.3 Methodological implications

Regarding methodological implications, designing an online course using technological resources such as Moodle and using technological tools as instruments to collect qualitative and quantitative data was tremendously helpful. The user-friendly nature of these resources was useful as a low-cost and convenient way to gather the data, considering this researcher's and the teachers' geographical locations. Also, in the case of Moodle, it served as a repository for textual information (blogs and online discussion forums) that was ready for analysis. Moodle also provided log files with valuable quantitative data about the teachers' choices and actions in the online community. The use of this technology for data collection allowed this researcher to track the teachers' CALL skills and knowledge in a comprehensive and trustworthy manner.

Content analysis was useful to analyze the data in this case study as a means to interpret the teachers' information in the online community. Also, the community of inquiry framework (Garrison et al, 2000) and the Transformative Scale for Distance Learners (Motteram, 2006) provided suitable criteria to examine the teachers' CALL skills and knowledge development. This case study's qualitative data provided sufficient data for analysis. However, as explained in the methodology section, it would have been interesting to include focus groups in order to obtain information of the teachers' experiences and perceptions as a an 'online community of inquiry'. Nonetheless, when working online, the coordination of schedules for synchronous interactions can be difficult to arrange.

Moving forward, it would be helpful to include more sophisticated methods from educational data mining. The Moodle log files here were important to follow-up the teachers developmental process, nevertheless, instruments from, for example, learning analytics can be included in CALL teacher education research. As Reintiers suggested in his plenary speech at EUROCALL conference 2014, data mining strategies such as learning analytics (i.e. data produced by learners in online environments) can provide rich quantitative data to observe interaction and how communities are constructed due to most online learning environments provide access and can process such information. Also, although the online questionnaires were produced for this case study and were validated for this research context, they could be refined and re-tested for further research.

6.4 Limitations of this case study

6.4.1 The Attrition Effect: Why was there a high dropout rate in the online teacher training and development course?

Initially, 26 teachers started the online course. At the time the call for volunteers was made, all the participants seemed motivated to participate in the online community. However, as the online course progressed only 8 completed it. In general, studies of adult learners (Tyler-Smith, 2006; Levy, 2007; Park and Choi, 2009) show that attrition numbers in online courses are in fact high. It is important to further explore which factors (e.g. personal, academic) might cause this effect in

order to improve the students' virtual learning experience and increase the efficiency of online courses. In this case study the following were identified as reasons for attrition in the online community.

6.4.2 Time

Based on what the teachers who left explained (i.e. mainly via email) time was the main factor that undermined their continuing participation in the online course. Most of the teachers said they were overloaded with work and that they did not have (or could not make) enough time to work on the course. Lack of time was one of the attrition causes in this case study; however, it was also identified as a major constraint by the teachers who finished the course. This is why educational institutions play a role in CALL teacher professional development, as they can support their teachers' education by allowing them the time for such activities. The teachers' time management is something tutors should pay attention to as well. In this case study, the tutor had to make decisions regarding the syllabus in order to adapt the course in an ongoing basis according to the teachers' needs (e.g. practical activities). Also, the tutor provided individual and group guidance during the course to help them understand how they can organize their time and continue their professional development beyond the course.

6.4.3 Certification

Another attrition factor identified in this case study was certification. It is important to pay attention to certification and quality of CALL training courses so as to support teachers' marketability. Certification acquired from reliable sources allows teachers to justify their pedagogical decisions and practices. Quality is important as well as it gives the teachers security that what they learn is trustworthy and useful. As no formal certification was provided in this case study, some of the teachers decided not to continue. Nevertheless, the teachers who completed the online course still perceived it as a professional development experience. In response to their own request, a stamped letter by the department secretary (see appendix G) confirming their participation an online course for CALL as part of a doctoral project was provided. Also, the teachers explained that being aware of this researcher's

credentials, career and experience in language teacher education and CALL gave them a guarantee of the online course.

6.4.4 Interaction

Interaction in this case study was linked to social presence in the online community. According to the analysis, although group cohesion was high as they were learning in a comfortable environment, the teachers agreed that there was more need for debate in the online discussion forums. As a result, social presence was partially achieved. The role and differences between debate and dialogue become relevant to foster cognitive and social presence in online training and development courses for CALL. This would allow teachers to increase their own learning by debating new dilemmas and opinions, as suggested in transformative learning. Although the teachers acknowledged the importance of interaction in the online community it was difficult for them to promote it. This was also a challenge for the tutor as finding the proper balance to avoid taking over the discussions, and also motivate the teachers to initiate (and maintain) interaction, was complex.

6.4.5 Practical Activities

Practical activities were included in the design and implementation of the course. Nonetheless, they were problematic due to the fact that the teachers did not seem to engage with them as the course progressed. The activities were linked to the topic discussed every week and the aim was for teachers to reinforce their knowledge and for the tutor to follow-up their work. Paradoxically, even though they did not complete the activities, they would have liked to have more practical exercises. Perhaps, as they were struggling with time to read the materials and post in the online community, the practical tasks were not their priority. Also, it might be possible that they were overwhelmed by the materials presented to them. The tutor might have assumed that the teachers were going to be able to organize their learning, but in fact, having too many materials to choose from might have undermined their development. The practical component has to do with the structural design of the course and it should be addressed in future

implementations. Therefore, activities and materials should be provided considering what the teacher can actually do or achieve.

The findings in this case study cannot be generalized outside this research context. However, although the course ended with 8 participants and lasted 8 weeks, these teachers' developmental processes in the online community provide information which is valuable for growing knowledge regarding the design of CALL teacher training courses.

6.5 Recommendations for further research

6.5.1 Evidence of the application of CALL skills and knowledge for online teaching developed during the course in real teaching contexts

In this case study, the main objective was to observe how teachers developed their CALL skills and knowledge for online teaching within an online community. However, exploring the actual application of their CALL competence in authentic teaching contexts is recommended (i.e. the outside of the online community). For instance, it would be interesting to observe how the teachers use their developed CALL knowledge and skills and their impact on the students' learning processes. Perhaps comparative studies could be conducted to examine language classes led by 'trained' versus 'untrained' L2 teachers, or even draw parallels on the ways 'trained' teachers apply online teaching after CALL professional development courses.

6.5.2 Language teachers' 'Digital self-esteem'

It has been suggested in this case study that the outcome of the teachers' CALL skills and knowledge developmental process (i.e. confidence, awareness, knowledge) could be described as 'digital self-esteem'. This is an area to continue with, not really developed so far, so additional work should be done in order to grow knowledge on the cognitive and, perhaps, emotional aspects of teachers using online teaching. If teachers feel confident with technology, they are more likely to use it to innovate for their students' benefit and their own professional development.

6.5.3 Ongoing L2 teacher training and development for CALL

In addition, L2 teacher development in CALL research should also move towards online communities. In this case study, findings regarding how an online community of inquiry supported the development of teachers' CALL competence were presented. However, it would be greatly valuable as an extension to this investigation to conduct research on how teachers continue their professional development in CALL after undergoing formal training courses. Looking for questions such as: Do they continue improving their CALL skills? How do they do it? How do they maintain intrinsic motivation to keep learning? Do they engage in self-guided, collaborative (or both) experiences? Among others, might play a key role in the search for supporting L2 teachers to be more prepared to engage in pedagogical endeavors with online resources.

6.5.4 An updated version of the online teacher training and development course:

As stated in the methodology chapter of this thesis (p.76), this study took a design-based research stance as the online course where the investigation took place was designed by this researcher. In design-based studies in technology particularly, researchers design, implement, evaluate, study and re-design environments in order to find useful techniques to improve technologically-mediated learning (Wang and Hannafin, 2005). For this reason, design the course in this investigation was to link the research context to the aims of the study in order to have a holistic view of the data and obtain richer findings. Such results could show patterns of development or elements which may help to improve teacher education courses in CALL and make them more sustainable as technology advances.

Therefore, the outcomes this study encouraged this researcher to conduct a critical examination of the instructional design of the online course in order to propose updated guidelines to CALL teacher training researchers and practitioners. As discussed previously, the original version of the course presented some limitations which should be dealt with (e.g. practical activities).

Figure 25 presents a proposal for the re-design of the online course. As stated in the discussion, the notion of 'digital self-esteem' was a key finding in the study, thus it should be taken into account in future models. As the concept needs further exploring, perhaps it would be sensible to explore how it could be considered in the education of teachers for CALL. In the figure below, the new design includes pre-stage where L2 teachers' 'digital self-esteem' is evaluated. Also, considering the importance of individual and collaborative reflection and examination of ideas and practices shown in this study, it is recommended that guidelines on how to reflect are provided prior to the start of the course in order to give teachers some strategies to develop their reflective skills.

In relation to CALL skills and knowledge development, the presence of a guiding figure (i.e. an online tutor) in the course is highly recommended. As shown in this case study, the online tutor played an important role in the teachers' developmental process in terms of fostering teaching, cognitive and social presence in the online community. Additionally, it could be useful to assess the teachers' pre-and post-course CALL competence by means of tests or other quantitative method. In this study this was not feasible but it is recommended in future applications of the course. Possibly, the TESOL technology standards (2011) could be a source which provides researchers with tools to evaluate technological and pedagogical competence. It can be observed as well that the contents and materials of the training are re-arranged according to the results of this case study in relation to prepare teachers for new technologies and the use of videos. Although the practical activities were a weakness in the original design, it is important to include them, as the teachers consider them relevant for their CALL professional development. Additionally, post-course suggestions are incorporated in the new design. For example, it would be useful to promote follow-up techniques (e.g. a group on Facebook or any social media), for the teachers to continue in contact with one another after the online course, as networking plays a significant for CALL knowledge and skills sustainability and support.

PRE-TRAINING STAGE	TRAINING STAGE (MOODLE)		POST –TRAINING STAGE
'Digital self-esteem' evaluation (psychology scales)	Technological Knowledge (basic and specific)	Continuous	'Digital self-esteem' evaluation (psychology scales)
Initial L2 teachers' CALL cognition analysis (Interviews-Focus groups)	Pedagogical Knowledge Electronic literacies CALL principles and support Learner profile and training	Discussions (peers/tutor)	Final L2 teachers' CALL cognition analysis (Interviews-Focus groups)
Initial L2 teachers' CALL skills and knowledge assessment (Tests)	Language teaching approaches Revisited	Blogging Practical activities	Final L2 teachers' CALL skills and knowledge Assessment (Tests)
Initial L2 teachers' reflective skills Assessment (Interviews-Focus groups)	Online learning Feedback Social networks Culture	Final project Training videos By online tutor	Follow up online community (social network)
L2 teachers' introduction to Online community of inquiry (Getting-to-know-you experience With peers and tutor/guidelines)	Telecollaboration Mobile learning New technologies Issues on continuing professional Development in CALL	Supporting multimedia materials	Evidence of application of knowledge in situ (pre/post student assessment)
			Workshops with colleagues

Figure 25: Re-design of the online teacher training and development course

Final Remarks

This research was initially motivated by the fact that it is necessary for CALL researchers to listen to the teachers' voice, which is sometimes overlooked, in terms of how they develop their CALL skills and knowledge in professional development courses. This case study, with its methodological and analytic strengths and limitations, sought to provide guidelines on how teacher education in CALL can be more sustainable. This researcher strongly believes that it is by working side-by-side with teachers (as here with teachers from Chile and Easter Island) that CALL researchers and practitioners can find useful ways to support them, their students and educational institutions. In a global and digital world that rapidly evolves, it is necessary to foster innovative training and development course designs and strategies for helping teachers in the intricate task of teaching languages with technology.

References

- Adams, A. and Cox, A. L. (2008). 'Questionnaires, in-depth interviews and focus groups'. In Cairns, P. and Cox, A. L. (eds.) *Research Methods for Human Computer Interaction*. Cambridge, UK: CUP, pp. 17–34.
- Akbari, R. (2007) 'Reflections on reflection: A critical appraisal of reflective practices in L2 teacher education'. *System*, 35(2), pp.192-207.
- Almeida D'Eca, T. and Gonzalez, D. (2006) 'Becoming a Webhead: Bridging the Gap from Classroom to Blended or Online Teaching'. *CALICO Journal*, 23(3), pp. 569-580.
- Allwright, D. (2003) 'Exploratory Practice: Rethinking practitioner research in language teaching'. *Language Teaching Research*, 7 (2), pp. 113–141.
- Anderson, T. (2008) 'Teaching in an online learning context'. In Anderson, T. (ed.) *The theory and practice of online learning*. Athabasca University, Edmonton, Alberta. Canada: Athabasca University Press, pp.343-366.
- Arbaugh, J.B. Cleveland-Innes, M. Diaz, S. Garrison, R.D. Ice, P. Richardson, J. and K. Swan (2008) 'Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample'. *Internet and Higher Education*, 11, pp. 133-136.
- Armstrong, D. Gosling, A. Weinman, J. and Marteau, T. (1997) 'The place of interrater reliability in qualitative research: An empirical study'. *Sociology*, 31(3), pp. 597-606.
- Arnold and Ducate (2015) 'Contextualized Views of Practices and Competencies in CALL Teacher Education Research'. *Language Learning & Technology*, 19(1), pp. 1-9. Retrieved from <http://llt.msu.edu/issues/february2015/commentary.pdf>

- Bailey, K.M. (1990) 'The use of diary studies in teacher education programs'. In: Richards, J.C., Nunan, D. (eds.) *Second Language Teacher Education*. Cambridge: CUP, pp. 215–226.
- Baepler, P. and Murdoch, C. J. (2010) 'Academic analytics and data mining in higher education'. *International Journal for the Scholarship of Teaching and Learning*, 4(2), p. 17.
- Bailly, S. Ciekansky M. and Guely-Costa, E. (2013) 'Training language teachers to sustain self-directed language learning: An exploration of advisers' experiences on a web-based open virtual learning environment'. *The EUROCALL Review*, 21(1), pp.35-53.
- Bauer-Ramanzani, C. (2006) 'Training CALL teachers online'. In Hubbard, P and Levy, M. (eds.) *Teacher Education in CALL*. Amsterdam/Philadelphia: John Benjamins, pp. 183-202.
- Barab, S. and Squire, K. (2004) 'Design-based research: Putting a stake in the ground'. *The journal of the learning sciences*, 13(1), pp.1-14.
- Barrs, K. (2012) 'Fostering computer-mediated I2 interaction beyond the classroom'. *Language Learning & Technology*, 16(1), pp. 10-25. Retrieved from: <http://llt.msu.edu/issues/february2012/actionresearch.pdf>
- Beaven, T. Emke, M. Ernst, P. Germain-Rutherford, Hampel, R. Hopkins, J. Stanojevic, M.M. and Stickler, U. (2010) 'Needs and challenges for online language teachers-the ECML project DOTS'. *Teaching English with Technology: A Journal for Teachers of English*, 10(2), pp. 5-20.
- Benfield, J. A. and Szlemko, W. J. (2006) 'Internet-based data collection: Promises and realities'. *Journal of Research Practice*, 2(2), Article D1. Retrieved from <http://jrp.icaap.org/index.php/jrp/article/view/30/51>
- Bennett, S. Maton, K. Kervin, L. (2008) 'The "digital natives" debate: A critical review of the evidence'. *British Journal of Educational Technology*, 39(5), pp. 775-786.

- Berg, B. (2007) *Qualitative research methods for the social sciences*. 6th ed. Boston, MA: Allyn and Bacon.
- Biggs, J. (1999) *Teaching for quality learning at university*. Buckingham: Society for Research into Higher Education and the Open University Press,
- Bloom, B. S. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co Inc.
- Borg, S. (2003) 'Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do'. *Language Teaching*, 36(2), pp.81-109.
- Borg, S. (2011) 'The impact of in-service teacher education on language teachers' beliefs'. *System*, 39, pp. 370-380.
- Borup, J. West, R. and Graham, C. (2011) 'Improving online social presence through asynchronous video'. *Internet and Higher Education*, 15, pp. 195-203.
- Boslaugh, S. (2013) *Statistics in a nutshell*. CA, USA: O'Reilly Media, Inc.
- Brandl, K. (2005) 'Are you ready to "Moodle"?' *Language Learning & Technology*, 9(2), pp. 16-23. Retrieved from: <http://lt.msu.edu/vol9num2/pdf/review1.pdf>
- Bransford, J. D., Brown, A. L., and Cocking, R. R. (2000) *How people learn*. Washington, DC, USA: National Academy Press.
- Buckingham Shum, S. and Ferguson, R. (2011) 'Social Learning Analytics'. Technical Report KMI-11-01, Knowledge Media Institute, The Open University, UK. Retrieved from <http://kmi.open.ac.uk/publications/pdf/kmi-11-01.pdf>
- Burns, A. and Richards, J. (eds.) (2009). *The Cambridge guide to second language teacher education*. Cambridge: Cambridge University Press.
- Burton, J. (2009) 'Reflective practice'. In Burns, A. and Richards, J.C. (eds.), *Cambridge guide to second language teacher education*. Cambridge: Cambridge University Press, pp. 298-309.
- Burston, J. (2013) 'Mobile-assisted language learning: A selected annotated bibliography of implementation studies 1994–2012'. *Language Learning &*

Technology, 17(3), pp. 157–224. Retrieved from:

<http://lt.msu.edu/issues/october2013/burston.pdf>

Brown, J.D. (2001) *Using Surveys in Language Programs*. Cambridge, UK: Cambridge University Press.

Brownlow, C. and O'Dell, L. (2002) 'Ethical Issues for Qualitative Research in Online Communities'. *Disability and Society*, 17 (6), pp. 685-695.

Bryman, A. (2012) *Social Research Methods*. Oxford: Oxford University Press.

Camtasia® Studio www.techsmith.com

Caspi, A. and Blau, I. 'Social presence in online discussion groups: testing three conceptions and their relations to perceived learning'. *Social Psychology of Education*, 11(3), pp.323-346.

Chapelle, C. (1990) 'The discourse of computer-assisted language learning: Toward a context for descriptive research'. *TESOL Quarterly*, 24, pp. 199-225.

Chapelle, C. (2010) 'The spread of Computer Assisted Language Learning'. *Language Teaching*, 43(1), pp. 66-74.

Chapelle, C. (2014) Arguments for technology and language teaching [Plenary speech given at the EUROCALL Conference] University of Groningen, The Netherlands, 22-25 August.

Colpaert, J. (2006) 'Pedagogy-driven design for online language teaching and learning'. *CALICO Journal*, 23(3), pp. 477-497.

Cranton, P. (2000) 'Individual Differences and Transformative Learning'. In Mezirow, J. and Associates (eds.) *Learning as Transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey-Bass, pp. 181-204.

Cranton, P. and King, K. (2003) 'Transformational learning as a professional development goal'. In King, K. and Lawler, P. (eds.) *New perspectives on designing and implementing professional development for teachers of adults*, *New Directions in Adult and Continuing Education*, pp. 31-38.

- Crandall, J. (2000) 'Language teacher education'. *Annual review of Applied Linguistics*, vol. 20, pp. 34-55.
- Creswell, J. and Miller, D. (2000) 'Determining Validity in Qualitative Inquiry'. *Theory into Practice*, 39(3), pp. 124-130, DOI: 10.1207/s15430421tip3903_2.
- Creswell, J. (2003) *Research design: Qualitative, quantitative and mixed methods approaches*. 2nd edition. London: SAGE.
- Creswell, J. Hanson, W. Plano-Clark, V. and Morales, A. (2007) 'Qualitative Research Designs: Selection and Implementation'. *The Counseling Psychologist*, 35(2), pp. 236-264.
- Creswell, J. (2007) *Qualitative inquiry and research design: Choosing among five approaches*. 2nd edition. Thousand Oaks, California: SAGE Publications, Inc.
- Creswell, J. (2009) *Research design: Qualitative, quantitative, and mixed methods approaches*. 3rd edition. London: SAGE.
- Creswell, J. (2012) *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. 4th edition. Boston, MA: Pearson Education.
- Cresswell, J. (2014) *Research Design: Qualitative, Quantitative, and Mixed Methods approaches*. 4th edition. London: SAGE.
- Comas-Quinn, A. (2011) 'Learning to teach online or learning to become an online teacher: An exploration of teachers' experiences in a blended learning course'. *ReCALL*, 23(3), pp. 218-232.
- Compton, L.K.L. (2009) 'Preparing language teachers to teach language online: a look at skills, roles and responsibilities'. *Computer Assisted Language Learning*, 22(1), pp.73-99.
- Cutrim Schmid, E. (2007) 'Enhancing performance knowledge and self-esteem in classroom language learning: The potential of the ACTIVote System component of interactive whiteboard technology'. *System*, 35, pp. 119-133.

Cutrim Schmid, E. and Whyte, S. (2012) 'Interactive whiteboards in state schools settings: teacher responses to socio-constructivist hegemonies'. *Language Learning & Technology*, 16(2), pp.65-86.

Davis, N. and Loveless, A. (2011) 'Reviewing the landscape of ICT and teacher education over 20 years and looking forward to the future'. *Technology, pedagogy and education*, 20 (3) pp. 247-261.

DeWever, B. et al (2006) 'Content Analysis schemes to analyse transcripts of online asynchronous discussion groups: A review'. *Computers and Education*, 46, pp. 6-28.

Dede, C. et al (2004) 'Design-based research strategies for studying situated learning in a multi-user virtual environment'. In *Proceedings of the 6th international conference on Learning sciences. International Society of the Learning Sciences*, pp. 158-165).

Dede, C. et al (2009) 'A research agenda for online teacher professional development'. *Journal of teacher education*, 60 (1) pp.8-19.

Denscombe, M. (2003) *The good research guide: For small-scale social research*. UK: Open University Press, McGraw-Hill education.

Denscombe, M. (2008) 'Communities of practice: A research paradigm for the mixed methods approach'. *Journal of Mixed Methods Research*, 2(3), pp. 270-283.

Dewey, J. (1916) *Democracy and education*. New York: Macmillan.

Dewey, J. (1933) *How we think*. New York: D.C. Heath.

Dewey, J. (1959) 'My pedagogic creed'. In Dewey, J. *Dewey on education*. New York: Teachers College, Columbia University, pp. 19-32. (Original work published 1897).

Diez-Bedmar, M.B. and Perez-Paredes, P. (2012) 'The types and effects of peer native speakers' feedback on CMC'. *Language Learning & Technology*, 16(1), pp. 62-90. Retrieved from:

<http://lt.msu.edu/issues/february2012/diezbedmarperezparedes.pdf>

Dirkx, J.M. (1998) 'Transformative learning theory in the practice of adult education: An overview'. *PAACE Journal of Lifelong Learning*, 7, pp. 1-14.

Dornyei, Z. (2007) Research Methods in Applied Linguistics. Oxford: Oxford University Press.

Dornyei, Z. and Taguchi, T. (2009) *Questionnaires in Second Language Research: Construction, Administration, and Processing*. London: Routledge.

Duff, P. (2008) *Case study research in applied linguistics*. New York: Lawrence Erlbaum/Taylor & Francis.

Duff, P. (2012). How to conduct case study research. In S. Gass and A. Mackey (eds.) *Research methodologies in second language acquisition*. Malden, MA: Wiley-Blackwell. pp. 95-116.

Egbert, J., Paulus, T., and Nakamichi, Y. (2002) 'The impact of CALL instruction on classroom computer use: A foundation for rethinking technology in teacher education'. *Language Learning & Technology*, 6 (3), pp. 108-126. Retrieved from: <http://www.iup.edu/assets/0/347/349/4951/4977/10251/AF0EAB12-C2CE-4D2C-B1A0-59B795415437.pdf>

Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.

Ernst, P. and Hopkins, J. (2006) 'Coordination and teacher development in an online learning environment'. *CALICO Journal*, 23(3), pp. 551-568.

Ernst, P. Guitert Catusus, M. Hampel, R. Heiser, S. Hopkins, J. Murphy, L. and Stickler, U. (2012) 'Online teacher development: Collaborating in a virtual learning environment'. *Computer Assisted Language Learning*, 26(4), pp. 311-333.

DOI:10.1080/09588221.2012.667814.

- Farr Darling, L. (2001) 'When Conceptions Collide: Constructing a community of inquiry for teacher education in British Columbia'. *Journal of Education for Teaching: International research and pedagogy*, 27(1), pp. 7-21.
- Felix, U. (2005) 'E-learning pedagogy in the third millennium: The need for combining social and cognitive constructivist approaches'. *ReCALL*, 17(01), pp. 85-100.
- Finlay, L. (2008) 'Reflecting on 'reflective practice'. A discussion paper prepared for Practice-based Professional Learning Centre (PBPL CETL)'. The Open University, 52, pp. 1-27. Retrieved from:
[http://www.open.ac.uk/opencetl/files/opencetl/file/ecms/web-content/Finlay-\(2008\)-Reflecting-on-reflective-practice-PBPL-paper-52.pdf](http://www.open.ac.uk/opencetl/files/opencetl/file/ecms/web-content/Finlay-(2008)-Reflecting-on-reflective-practice-PBPL-paper-52.pdf)
- Freeman, D. (2009) 'The scope of second language teacher education'. In Burns, A. and Richards, J. C. (eds.) *The Cambridge guide to second language teacher education*. Cambridge: Cambridge University press, pp. 11-20.
- Gallardo, M. Heiser, S. and Nicolson, M. (2011) 'Teacher development for blended contexts'. In Nicolson, M. Murphy, L. and Southgate, M. (eds.) *Language Teaching in Blended Contexts*. Edinburgh, Scotland: Dunedin Academic Press, pp. 219-231.
- Garrison, J. (1995) 'Deweyan Pragmatism and the Epistemology of Contemporary Social Constructivism'. *American Educational Research Journal*, 32(4), pp. 716-740.
- Garrison, R. D., Anderson, T., and Archer, W. (2000) 'Critical Inquiry in a text-based environment: Computer conferencing in Higher Education'. *Internet and Higher Education*, 2(2-3), pp. 87-105.
- Garrison, R. D. Anderson, T. and Archer, W. (2001) 'Critical thinking, cognitive presence, and computer conferencing in distance education'. *American Journal of Distance Education*, 15(1), pp. 7-23. DOI: 10.1080/08923640109527071

Garrison, R.D. (2007) 'Online community of inquiry review: Social, Cognitive and Teaching Presence issues'. *Journal of Asynchronous Learning Networks*, 11(1), pp. 61-72.

Garrison, R. D. (2011) *E-learning in the 21st Century*. London and New York: Routledge.

Garrison, R. D. and Arbaugh, J.B. (2007) 'Researching the community of inquiry framework: Review, issues and future directions'. *Internet and Higher Education*, 10, 157-172.

Garrison, R. D. and Vaughan N. D. (2008) *Blended learning in Higher Education: Framework, principles and guidelines*. San Francisco, CA: Jossey-Bass

Garrison, R.D. and Cleveland-Innes, M. (2005) 'Facilitating Cognitive Presence in online learning: Interaction is not enough'. *American Journal of Distance Education*, 13(3), pp.133-148. DOI: 10.1207/s15389286ajde1903_2

Garrison, R. D. Cleveland-Innes, M., and Shing Fung, T. (2010) 'Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the community of inquiry framework'. *Internet and Higher Education*, 13(1-2), pp. 31-36.

Garrison, R.D. Anderson, T. and Archer, W. (2010) 'The first decade of the community of inquiry framework: A retrospective'. *The Internet and Higher Education*, 13(1-2), pp. 5-9.

Gilbert, P. and Dabbagh, N. (2005) 'How to structure online discussions for meaningful discourse: A case study'. *British Journal of Educational Technology*, 36(1), pp. 5-18.

Glassman, M. (2001) 'Dewey and Vygotsky: Society, experience, and inquiry in educational practice'. *Educational Researcher*, 30(4), pp. 3-14.

- Godwin-Jones, R. (2003). 'Environments for on-line collaboration'. *Language Learning & Technology*, 7 (2), pp.12-16. Retrieved from <http://llt.msu.edu/vol7num2/emerging/default.html>
- Godwin-Jones, R. (2011) 'Mobile apps for language learning'. *Language Learning & Technology*, 15 (2), pp. 2-11. Retrieved from: <http://llt.msu.edu/issues/june2011/emerging.pdf>
- Godwin-Jones, R. (2012) 'Challenging hegemonies in online learning'. *Language Learning & Technology*, 16(2), pp. 4-13. Retrieved from: <http://llt.msu.edu/issues/june2012/emerging.pdf>
- Godwin-Jones, R. (2013) 'Integrating intercultural competence into language learning through technology'. *Language Learning & Technology*, 17(2), pp. 1–11. Retrieved from <http://llt.msu.edu/issues/june2013/emerging.pdf>
- Goodyear, P. Salmon, G. Spector, M.J. Steeples, C. Tickner, S. (2001) 'Competences for online teaching'. *Educational Technology Research*, 49(1), pp. 65-72.
- Gravett, S. (2004). 'Action research and transformative learning in teaching development'. *Educational Action Research*, 12(2), pp. 259-272.
- Griffiths, V. (2000) 'The reflective dimension in teacher education'. *International Journal of Educational Research*, 33, pp. 539-555.
- Grushka, K. Hindle-McLeod, J. and Reynolds, R. (2005) 'Reflecting upon reflection: theory and practice in one Australian University teacher education program'. *Reflective Practice*, 6(2), pp. 239-256. Routledge: London.
- Guba, E. G. and Lincoln, Y. (1994) 'Competing Paradigms in Qualitative Research'. In Denzin, N. K. and Lincoln, Y. (eds.) *Handbook of Qualitative Research*. Thousand Oaks, London, New Delhi: SAGE Publications, pp.107-117.
- Guichon, N. and Hauk, M. (2011) 'Teacher education in CALL research and CMC: More in demand than ever'. *ReCALL*, 23(3), pp.187-199.

- Gunawardena, C. Lowe, C. and Anderson, T. (1997) 'Analysis of a global online debate and the development of an interaction analysis model for examining social construction of knowledge in computer conferencing'. *Journal of Educational Computing Research*, 17(4), pp. 395 – 429.
- Hall, D. and Knox, J. (2009). 'Language teacher education by distance'. In Burns, A. and Richards, J. (eds.) *The Cambridge guide to second language teacher education*. Cambridge: Cambridge University Press, pp. 218-230.
- Hampel, R. and Stickler, U. (2005) 'New skills for new classrooms: Training tutors to teach languages online'. *Computer Assisted Language Learning*, 18(4), pp. 311-326.
- Hampel, R. (2009) 'Training teachers for the multimedia age: developing teacher expertise to enhance online learner interaction and collaboration'. *Innovation in Language Learning and Teaching*, 3(1) pp. 35-50. Retrieved from <http://dx.doi.org.10.1080/17501220802655425>
- Hanson-Smith, E. (2006) 'Communities of practice for pre- and in-service teacher education'. In Hubbard, P. and Levy, M. (eds.) *Teacher Education in CALL*. John Benjamins: Amsterdam, pp. 301-316.
- Hanson-Smith, E. (2013) 'Online communities of practice'. In Chapelle, C. A. (ed.) *The Encyclopedia of Applied Linguistics*. Oxford, UK: Wiley-Blackwell Publishing Ltd. Retrieved from <http://onlinelibrary.wiley.com/book/10.1002/9781405198431>
DOI: 10.1002/9781405198431
- Hauk, M. and Warnecke, S. (2012) 'Materials design in CALL: Social Presence in online environments'. In Thomas, M. Reinders, H. and Warschauer, M. (eds.) *Contemporary computer-assisted language learning. Contemporary Studies in Linguistics Series*. London and New York: Continuum, pp. 95-115.
- Hattie, J. and Timperley, H. (2007) 'The power of feedback'. *Review of Educational Research*, 77(1), pp. 81-112.

Heatheron, T. F. and Polivy, J. (1991) 'Development and validation of a scale for measuring state self-esteem'. *Journal of Personality and Social Psychology*, 60, pp. 895-910.

Healy, D., Hegelheimer, V., Hubbard, P., Ioannou-Georgiou, S., Kessler, G. and Ware, P. (2011) *TESOL technology standards: Description, implementation, integration*. Alexandria, VA: TESOL.

Healey, D. (2013) Language trainer training in technology. In Chapelle, C. A. (ed.) *The Encyclopedia of Applied Linguistics*. Oxford, UK: Wiley-Blackwell Publishing Ltd. Retrieved from <http://onlinelibrary.wiley.com/book/10.1002/9781405198431>
DOI: 10.1002/9781405198431

Hinkelman, D. and Gruba, P. (2012) 'Power within blended language learning programs in Japan'. *Language Learning & Technology*, 19(2), pp. 46-64. Retrieved from: <http://lt.msu.edu/issues/june2012/hinkelmangruba.pdf>

Hee Hong, K. (2010) 'CALL teacher education as an impetus for L2 teachers in integrating technology'. *ReCALL*, 22(1), pp. 53-69.

Hernandez-Ramos, P. (2004) 'Web logs and online discussions as tools to promote reflective practice'. *The Journal of Interactive Online Learning*, 3(1), pp. 1-16.

Heuer, B. and King, K. (2008) Through the Fears and Years: Applying a Transformative Learning Model to ABE and Workplace Learning. [Presented at the Adult Education Research Conference], University of Missouri-St. Louis, St. Louis, MO, USA, June 4-7.

Hockly, N. (2010) *Top Ten Moderator Skills (for 2010)*. *E-moderation station: Tools, tips, techniques and tweets for online moderators*. [Website] Available at: <http://www.emoderationskills.com/?p=66>

Hockly, N. (2011) 'Technology for the language teacher. The digital generation'. *ELT Journal*, 65(3) pp. 322-325. DOI:10.1093/elt/ccr041.

- Hollins, E. (2011). 'Teacher preparation for quality teaching'. *Journal of teacher education*, 62 (4), pp. 395-407.
- Hookway, N. (2008) "'Entering the blogosphere': some strategies for using blogs in social research'. *Qualitative Research*, 8(1), pp. 91-113.
- Hsieh, H-F. and Shannon, S.(2005) 'Three approaches to qualitative content analysis'. *Qualitative Health Research*, 15(9), pp.1277-1288.
- Hu, Z. and McGrath, I. (2011) 'Innovation in higher education in China: are teachers ready to integrate ICT in English language teaching?' *Technology, Pedagogy and Education*, 20(1) pp.41-59.
- Hubbard, P. (1996) 'A methodological framework for call courseware development'. In Pennington, M.C. (eds.) *The power of CALL*. Houston: Athlestan Publications, pp. 15-32.
- Hubbard, P. (2004) Learner Training for Effective Use of CALL. In Fotos, S. and Browne, C. (eds.) *New Perspectives on CALL for Second Language Classrooms*. Mahwah, NJ: Lawrence Erlbaum, pp.45-68.
- Hubbard, P. (2006) Teacher Education in CALL: The seven central questions. [Keynote speech given at the International Conference on Computer Assisted Language Learning] Beijing, China. June 2006.
- Hubbard, P. and Levy, M. (eds.) (2006). *Teacher Education in CALL*. Amsterdam: Philadelphia, PA: John Benjamins Pub. Co.
- Hubbard, P. (2008). 'CALL and the future of Language Teacher Education'. *CALICO Journal*, 25(2), pp. 175-188.
- Hubbard, P. and Kessler, G. (2008) 'Help shape TESOL's new Technology Standards'. *Proceedings of the Third WorldCALL Conference, Fukuoka, Japan, August, 2008*. <http://www.j-let.org/~wcf/proceedings/d-025.pdf>

- Hubbard, P (2014). *An invitation to CALL: foundations of Computer assisted language learning*. [Website] Retrieved from <http://web.stanford.edu/~efs/callcourse/>
- Hughes, J. (2005). 'The role of teacher knowledge and learning experiences in forming technology-integrated pedagogy'. *Journal of technology and teacher education*, 13(2), pp. 277-302.
- Jay, J. K. and Johnson, K. L. (2002) 'Capturing complexity: a typology of reflective practice for teacher education'. *Teaching and Teacher Education*, 18, pp. 73–85.
- Jezegou, A. (2010) 'Community of Inquiry in E-learning: A critical analysis of Garrison and Anderson model'. *Journal of Distance Education*, 24(3), pp. 1-18.
- Johnson, K. (2006) 'The sociocultural turn and its challenges for second language teacher education'. *TESOL Quarterly*, 40(1), pp. 235-257.
- Johnson, K. (2009). 'Trends in second language teacher education'. In Burns, A. And Richards, J. (eds.) *The Cambridge guide to second language education*. Cambridge: Cambridge University Press, pp. 20-30.
- Kegan, R. (2000) 'What "form" transforms? A constructive developmental approach to transformative learning'. In Mezirow, J. and Associates (eds.) *Learning as Transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey-Bass, pp. 35-70.
- Kehrwald, B. (2008) 'Understanding social presence in text-based online learning environments'. *Distance Education*, 29(1), pp. 89-106, DOI: 10.1080/01587910802004860
- Kern, R. (2006) 'Perspectives on technology in learning and teaching languages'. *TESOL Quarterly*, 40(1), pp. 183-210.
- Kessler, G. (2006). Assessing CALL teacher training: What are we doing and what could we do better? In P. Hubbard, and M. Levy (eds.) *Teacher Education in CALL*. Amsterdam, Philadelphia: John Benjamins, pp. 23-42.

- Kessler, G. (2007). 'Formal and informal CALL preparation and teacher attitude toward technology'. *Computer Assisted Language Learning*, 20(2), pp. 173-188. Retrieved from <http://dx.doi.org/10.1080/09588220701331394>
- Kessler, G. and Plakans, L. (2008) 'Does teachers' confidence with CALL equal and innovative and integrated use?' *Computer Assisted Language Learning*, 21(3), pp. 269-282.
- Kessler, G. (2010) 'When they talk about CALL: Discourse in a required CALL class'. *CALICO Journal*, 27(2), pp.376-392.
- Kehrwald, B. (2008) 'Understanding social presence in text-based online learning environments'. *Distance Education*, 29(1), pp. 89-106. DOI: 10.1080/01587910802004860.
- Khine, M. S. and Lourdusamy, A. (2003) 'Blended learning approach in teacher education: combining face-to-face instruction, multimedia viewing and online discussion'. *British Journal of Educational Technology*, 34 (5), pp. 671–675
- Khine, M. S. and Lourdusamy, A (2003) 'Using Conversant Media as a collaborative learning tool in teacher education'. *Australian Journal of Educational Technology*, 19(2), pp. 260-274.
- King, P. (2002) 'Educational technology professional development as transformative learning opportunities'. *Computers and Education*, 39, pp. 283-297.
- Kolaitis, M. Mahoney, M-A. Pomann, H. and Hubbard, P. (2006) 'Training ourselves to train our students for CALL'. In Hubbard, P. and Levy, M. (eds.), *Teacher Education in CALL*. Amsterdam/Philadelphia: John Benjamins, pp. 317-334.
- Kolb, D.A. (1984) *Experiential learning: experience as the source of learning and development*. New Jersey: Prentice Hall.
- Kozlova, I. and Priven, D. (2015) 'ESL teacher training in 3D virtual worlds'. *Language Learning & Technology*, 19(1), pp.83-101. Retrieved from: <http://lt.msu.edu/issues/february2015/kozlovapriven.pdf>

- Kukulska-Hulme, A. and Shield, L. (2008). 'An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction'. *ReCALL*, 20(3), pp. 271-289 DOI: 10.1017/S0958344008000335
- Kukulska-Hulme, A. (2009). 'Will mobile learning change language learning?' *ReCALL*, 21(2), pp.157–165.
- Lave, J and Wenger, E. (1991) *Situated learning: legitimate peripheral participation*. Cambridge: CUP.
- Lamy, M-N. and Hampel, R. (2007) *Online Communication in Language Learning and Teaching*. New York: Palgrave Macmillan
- Lawler P. and King, K. (2003) 'Changes, Challenges, and the Future'. *New Directions for Adult and Continuing Education*, 98, pp. 83-92.
- Levy, M. (1997) *Computer-Assisted Language Learning: Context and Conceptualization*. Oxford: Clarendon Press. (Clarendon Press is the academic imprint of Oxford University Press, UK).
- Levy, M. and Stockwell, G. (2006) *CALL Dimensions: Options and Issues in Computer Assisted Language Learning*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Levy, Y. (2007) 'Comparing dropouts and persistence in e-learning courses'. *Computers and Education*, 48, pp. 185-204.
- Leontiev, A. N. (1981). *Problems of the development of the mind*. Moscow: Progress Publishers.
- Levy, M. Wang, Y. and Chen, N. (2009) 'Developing the skills and techniques for online language teaching: a focus on the process'. *Innovation in Language Learning and Teaching*, 3(1), pp. 17-34. Retrieved from <http://dx.doi.org/10.1080/175501220802655417>
- Lewis, T. (2006) 'When teaching is learning: A personal account of learning to teach online'. *CALICO Journal*, 23(3), pp.581-600.

- Liang, M. Y. (2010) 'Using synchronous online peer response groups in EFL writing: Revision-related discourse'. *Language Learning & Technology*, 14(1), pp. 45-64. Retrieved from: <http://llt.msu.edu/vol14num1/liang.pdf>
- Lincoln, Y. S. and Guba, E. G. (1985) *Naturalistic inquiry*. Beverly Hills, CA: SAGE Publications, Inc.
- Lipman, M. (1991) *Thinking in education*. Cambridge: Cambridge University Press
- Lord, G. and Lomicka, L. (2008) 'Blended learning in teacher education: An investigation of classroom community across media'. *Contemporary Issues in Technology and Teacher Education*, 8(2), pp. 158-174.
- Lowie, W. and Bregtje, S. (2013) *Essential statistics for applied linguistics*. Basingstoke and New York: Palgrave Mcmillan.
- Mann, S. (2005) 'The language teacher's development'. *Language teaching*, 38(3), pp. 103-118.
- Mann, S. and Walsh, S. (2013) 'RP or "RIP": A critical perspective on reflective practice'. *Applied Linguistics Review*, 4(2), pp. 291-315.
- Marcus, S. Moy, M. and Coffman, T. (2007) Social network analysis. In Cook, D.J. and Holder, L.B. (eds.) *Mining Graph Data*. Hoboken, New Jersey: Wiley & Sons, Inc. pp. 443-467.
- Marra, R., Moore J., and Klimczak, A. (2004) 'Content Analysis of online discussion forums: A comparative analysis of protocols'. *Educational Technology Research and Development*, 52(2), pp. 23-40.
- Matear, A. (2008) 'English language learning and education policy in Chile: can English really open doors for all?' *Asia Pacific Journal of Education*, 28 (2). pp. 131-147. ISSN 0218-8791 10.1080/02188790802036679
- Mayer, S. (2008) 'Dewey's dynamic integration of Vygotsky and Piaget'. *Education and Culture*, 24(2), pp.6-24.

McCabe, M. Walsh, S. Wideman, R. and Winter, E. (2009) 'The "R" word in teacher education: Understanding the teaching and learning of critical reflective practice'. *International Electronic Journal for Leadership in Learning*, 13(7). Retrieved from: <http://iejll.synergiesprairies.ca/iejll/index.php/ijll>

McDonough, J. (1994) 'A teacher looks at teachers' diaries'. *ELT Journal*, 48, pp. 57–65.

McNeil, L. (2013) 'Exploring the relationship between situated activity and CALL learning in teacher education'. *ReCALL*, 25(2), pp. 215-232.

Meskill, C. et al. (2006) 'Expert-novice teacher mentoring in language learning technology'. In Hubbard, P. and Levy, M. (eds.) *Teacher Education in CALL*. Amsterdam, Philadelphia: John Benjamins, pp. 283-300.

Mezirow, J. (1990) *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. San Francisco: Jossey-Bass Publishers.

Mezirow, J. (2000) *Learning as transformation: Critical perspectives on a theory in progress*. San Francisco: Jossey-Bass.

Mezirow, J. and Taylor, E. (2009) (eds.) *Transformative Learning in Practice: Insights from Community, Workplace, and Higher Education*. San Francisco: Wiley and Sons, Jossey-Bass.

Ministerio de Educacion/SIMCE/Cambridge ESOL examination (2004) Resultados nacionales del diagnóstico de inglés aplicado en el año 2004. www.mineduc.cl

Moodle® www.moodle.com

Morales, S. and Windeatt, S. (2015) 'How language teachers become effective users of CALL for online teaching and learning: A case study of their developmental processes in a transformative e-training course'. In *WorldCALL: Sustainability and Computer Assisted Language Learning*, M. Levy A. Gimeno, F. Blin and D. Barr (eds.) London: Bloomsbury.

- Moon, J. (2004) *A handbook of reflective and experiential learning theory and practice*. London: Routledge-Falmer.
- Moon, J. (2008) *Critical Thinking: An exploration of theory and practice*. New York: Routledge.
- Motteram, G. (2001) 'The role of synchronous communication in fully distance education'. *Australian Journal of Educational Technology*, 17(2), pp. 131-149.
- Motteram, G. (2006) "'Blended" education and the transformation of teachers: A long term case study in postgraduate UK Higher Education'. *British Journal of Educational Technology*, 3(1), pp. 17-30.
- Motteram and Slaouti (2006) 'Reconstructing practice: Language teacher education and ICT'. In Hubbard, P. and Levy, M. (eds.) *Teacher Education in CALL*. Amsterdam, Philadelphia: John Benjamins, pp.81-98.
- Motteram, G. (2009). 'Social computing and teacher education: an agenda for course development'. *Innovation in Language Learning and Teaching*, 3(1), pp. 83-97. Retrieved from: <http://dx.doi.org/10.1080/1750122082655508>
- Motteram, G. (2012) 'Re-aligning research into teacher education for CALL and bringing it to the mainstream'. *Language Teaching*, 47(3), pp. 119-131.
- Murray, D. (2000). 'Changing technologies, changing literacy communities?' *Language Learning & Technology*, 4 (2), pp. 43-58. Retrieved from <http://ilt.msu.edu/vol4num2/murray/default.html>
- Negretti, R. (1999) 'Web based activities and SLA: A Conversation Analysis approach'. *Language Learning & Technology*, 3(1), pp. 75-87. Retrieved from: <http://ilt.msu.edu/vol3num1/negretti/>
- Newman, D. R. Webb, B. and Cochrane, C. (1995) 'A content analysis method to measure critical thinking in face-to-face and computer supported group learning'. *Interpersonal Computing and Technology*, 3(2), pp. 56-77.

Noffke, S. E. and Brennan, M. (2005) 'The dimensions of reflection: A conceptual and contextual analysis'. *International Journal of Progressive Education*, 1(3), pp. 58-83.

O'Dowd, R. (2013) 'The competences of the telecollaborative teacher'. *The Language Learning Journal*, 43(2), pp. 194-207. DOI: 10.1080/09571736.2013.853374. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/09571736.2013.853374#>

O'Dowd, R. (2015) 'Supporting in-service language educators in learning to telecollaborate'. *Language Learning & Technology*, 19(1), pp. 63-82. Retrieved from <http://llt.msu.edu/issues/february2015/odowd.pdf>

Orlando, J. (2009) 'Understanding changes in teachers' ICT practices: a longitudinal perspective'. *Technology, Pedagogy and Education*, 18(1), pp. 33-44.

Packer, M.J. and Goicoechea, J. (2010) 'Sociocultural and Constructivist Theories of Learning: Ontology, not just epistemology'. *Educational Psychologist*, 35(4), pp. 227-241.

Palfrey, J. and Gasser, U. (2008). *Born Digital*. New York: Basic Books.

Park, J.-H. and Choi, H. J. (2009). 'Factors influencing adult learners' decision to drop out or persist in online Learning'. *Educational Technology and Society*, 12 (4), pp. 207–217.

Pawan, F., Paulus, T., Yalcin, S., and Chang, C.F. (2003) 'Online learning: Patterns of engagement and interaction among in-service teachers'. *Language Learning & Technology*, 7(3), pp. 119-140.

Piaget, J. (1932) *The moral judgment of the child*. London: Routledge and Kegan Paul.

Pollard, A. (2002) *Readings for reflective teaching*. London: Continuum.

- Prensky, M. (2001). 'Digital natives, digital immigrants'. *On the Horizon*, 9(5), pp.1-6. Retrieved from: www.marcprensky.com/writing/Prensky%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf
- Reinders, H. (2009). 'Technology and second language teacher education'. In Burns, A. and Richards, J. (eds.) *The Cambridge guide to second language education*. Cambridge: Cambridge University Press, pp.230-239.
- Reinties, B. (2014) 'Understanding (in) formal learning and social interactions: from principles to practice in learning analytics'. [Plenary speech given at the EUROCALL Conference] University of Groningen, The Netherlands, 22-25 August.
- Richards, K. Ross, S. and Seedhouse, P. (2012) *Research Methods for Applied Language Studies: An advanced resource book for students*. London: Routledge.
- Richards, J. C. (1989) 'Beyond training: Approaches to teacher education in language teaching'. [Keynote address given at a workshop on Second Language Teacher Education] Macquarie University, Sydney, 15 June.
- Richards, J. C. (2008) 'Second language teacher education today'. *RELC Journal*, 39 (2), pp. 158-177.
- Richards, J. C. and Rodgers, T. (1986). *Approaches and methods in language teaching*. Cambridge University Press: Cambridge; New York.
- Richards, J. C. (1995) 'Towards reflective teaching'. *English Teachers Journal-Israel*, pp. 59-63.
- Robb, T. (2006) 'Helping teachers to help themselves'. In Hubbard, P. and Levy, M. (eds.) *Teacher Education in CALL*. Amsterdam, Philadelphia: John Benjamins, pp. 335-348.
- Rogers, Y. (2012) HCI Theory. Classical, modern and contemporary. In John M. Carroll (ed.), *Synthesis Lectures on Human-centered Informatics*, 5, (2), pp. 1-129.
- Romero, C. and Ventura, S. (2007) 'Educational data mining: a survey from 1995 to 2005'. *Expert Systems with Applications*, 33(1), pp. 135-146.

Romero, C. Ventura, S. and García, E. (2008) 'Data mining in course management systems: Moodle case study and tutorial'. *Computers & Education*, 51(1), pp. 368-384.

Romero, C. and Ventura, S. (2013). 'Data mining in education'. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, 3(1), pp. 12-27.

Rourke, L. Anderson, T. Garrison, R.D. and Archer, W. (2001a) 'Methodological issues in the Content Analysis of computer conference transcripts'. *International Journal of Artificial Intelligence in Education (IJAIED)*, 12, pp.8-22.

Rourke, L. Anderson, T. Garrison, R.D. and Archer, W. (2001b) 'Assessing social presence in asynchronous text-based computer conferencing'. *Journal of Distance Education*, 14 (2), pp. 1-18.

Sampson, N. (2003) 'Meeting the needs of distance learners'. *Language Learning & Technology*, 7(3), pp. 103-118. Retrieved from <http://lt.msu.edu/vol7num3/sampson/>

Rubio, F. (2007) (Ed.) *Self-esteem and foreign language learning*. Newcastle, UK: Cambridge Scholars Publishing.

Sade-Beck, L. (2004) 'Internet Ethnography: Online and Offline'. *International Journal of Qualitative Methods*, 3(2). Retrieved from: <https://ejournals.library.ualberta.ca/index.php/IJQM/article/view/4472>

Salmon, G. (2011) *E-moderating: the key to teaching and learning online*. London: Routledge.

Schiffrin, D. Tannen, H. and Hamilton, D. (2001) *The Handbook of Discourse Analysis*. Oxford: Blackwell Publishers, Ltd.

Sharp, A.M. (1987) 'What is a "Community of Inquiry"?' *Journal of Moral Education*, 16(1), pp. 37-45, DOI: 10.1080/0305724870160104.

Shea, P. (2006) 'A study of students' sense of learning community in online environments'. *Journal of Asynchronous Learning Networks*, 10(1), pp. 35-44.

Schön, D. (1983). *The reflective practitioner: How professionals think in action*. London: Temple Smith.

Skype® www.skype.com

Smith, R. C. (2001) 'Teacher education for teacher-learner autonomy'. In *Symposium for Language Teacher Educators: Papers from Three IALS Symposia*, J. Gollin, G. Ferguson and H. Trappes-Lomax (eds).

Smith, E. (2012) 'The digital native debate in higher education: A comparative analysis of recent literature'. *Canadian Journal of Learning and Technology*, 38(3) Retrieved from: <http://www.cjlt.ca/index.php/cjlt/article/view/649>

Stickler, U. and Hampel, R. (2007) 'Designing online tutor training for language courses: A case study'. *Open Learning: The Journal of Open, Distance and e-learning*, 22(1), pp. 75-85.

Son, J.-B. (2002) 'Online discussion in a CALL course for distance language teachers'. *CALICO Journal*, 20(1), pp. 127-144.

Son, J.-B. (2004). 'Teacher development in e-learning environments'. In Son, J.-B (ed.) *Computer-assisted language learning: Concepts, contexts and practices*. Lincoln, NE: Universe, pp.107-122.

Stacey, E. (2002) 'Social presence online: Networking learners at a distance'. *Education and Information Technologies*, 7(4), pp.287-294.

Stockwell, G. (2009). 'Teacher education in CALL: teaching teachers to educate themselves'. *Innovation in Language Learning and Teaching*, 3(1) pp. 99-112. Retrieved from: <http://dx.doi.org/10.1080/17501220802655524>

Strambi, A. and Bouvet, E. (2003) 'Flexibility and interaction at a distance: A mixed-mode environment for language learning'. *Language Learning & Technology*, 7(3), pp.81-102. Retrieved from <http://ilt.msu.edu/vol7num3/strambi/default.html>

Swain, M. (2013) 'The inseparability of cognition and emotion in second language learning'. *Language Teaching*, 46, pp. 195-207.

Swan, K. (2002a) Immediacy, social presence, and asynchronous discussion. In J. Bourne and J.C. Moore (eds.), *Elements of Quality Online Education, Volume 3*. Needham, MA: Sloan Centre for Online Education.

Swan, K. (2002b) 'Building communities in online courses: The importance of interaction'. *Education, Communication and Information*, 2(1), pp.23-49.

Swan, K. (2005) A constructivist model for thinking about learning online. In J. Bourne and J.C. Moore (eds.), *Elements of Quality Online Education: Engaging Communities*. Needham, MA: Sloan-C.

Tayebinik, M. and Puteh, M. (2012) 'The significance of self-esteem in Computer Assisted Language Learning (CALL) environment'. *Procedia-Social and Behavioral Sciences*, 66, pp.499-506. DOI: 10.1016/j.sbspro.2012.11.294.

Taylor, E. (2008) 'Transformative Learning'. *New Directions for Adult and Continuing Education*, 119, pp. 5-15. Retrieved from: www.interscience.wiley.com
DOI: 10.1002/ace.301.

Teratino, J. (2011) 'Youtube for foreign languages: you have to see this video'. *Language Learning & Technology*, 15(1), pp.10-16. Retrieved from:
<http://lt.msu.edu/issues/february2011/emerging.pdf>

Thomas, M. and Reinders, H. (2010) *Task-based Teaching and Technology*. New York: Continuum

Toohy, S. (1999) *Designing courses for higher education*. Buckingham: Society for Research into Higher Education and the Open University Press.

Tyler-Smith, K. (2006) 'Early attrition among first time e-learners: A review of factors that contribute to drop-out, withdrawal and non-completion rates of adult learners undertaking e-learning programmes'. *Journal of Online Learning and Teaching*, 2(2). Retrieved from: http://jolt.merlot.org/Vol2_No2_TylerSmith.htm

- Vandergriff, I. (2006) 'Negotiating common ground in computer-mediated versus face-to-face discussions'. *Language Learning & Technology*, 10(1), pp. 110-138. Retrieved from: <http://llt.msu.edu/vol10num1/vandergriff/>
- Van Lier L. (2005) 'Case study'. In Hinkel, E. (ed) *Handbook of Research in Second Language Teaching and Learning*. Mahwah, N.J.: Lawrence Erlbaum, pp. 195-208.
- Vialardi, C. Bravo, J. Shaffi, L. and Ortigosa, A. (2009) 'Recommendation in Higher Education Using Data Mining Techniques'. *International Working Group on Educational Data Mining*.
- Vygotsky, L. S. (1978) *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wallace, M. (1991) *Training foreign language teachers: A reflective approach*. Cambridge: CUP.
- Walsh, S. (2013) *Classroom Discourse and Teacher Development*. Edinburgh, Scotland: Edinburgh University Press.
- Warschauer, M., and Kern, R. (eds.) (2000). *Network-based language teaching: Concepts and practice*. Cambridge: Cambridge University Press Applied Linguistics Series.
- Warschauer, M. (2002) 'A developmental perspective on technology in language education'. *TESOL Quarterly*, 36(3), pp. 453-475.
- Weber (1990). *Basic Content Analysis*. 2nd ed. Thousand Oaks, CA: SAGE Publications.
- White D. S. and Le Cornu A. (2011) 'Visitors and Residents: A new typology for online engagement'. *First Monday*, 16 (9 – 5). Retrieved from: <http://firstmonday.org/article/view/3171/3049>

Woodward, T. (1991) *Models and Metaphors in Language Teacher Training: Loop Input and Other Strategies*. Cambridge: CUP.

Woodward, C. Griffiths, M. and Solly, M. (2014) 'English in Action: a new approach to continuing professional development through the use of mediated video, peer support and low-cost mobile phones in Bangladesh'. In Hayes, D. (ed.) *Innovations in the continuing professional development of English language teachers*. London: British Council, pp. 227–248.

Wopereis I. G. J. H. Sloep P.B. Poortman, S. H. (2010) 'Weblogs as instruments for reflection on action in teacher education'. *Interactive Learning Environments*, 18(3), pp. 245-261. DOI: 10.1080/10494820.2010.500530.

Wu, H. Gao, J. and Zhan, W. (2014) 'Chinese EFL teachers' social interaction and socio-cognitive presence in synchronous computer mediated communication'. *Language Learning & Technology*, 18(3), pp. 228-254. Retrieved from <http://lt.msu.edu/issues/october2014/wugaozhang.pdf>

Xin, C. (2012). 'A Critique of the Community of Inquiry Framework'. *International Journal of E-learning and Distance education*, 26(1) Retrieved from <http://www.ijede.ca/index.php/ide/article/view/755/1333>

Yang, H. (2009) 'Using blogs to enhance critical reflection and community of practice'. *Educational Technology and Society*, 12(2), pp.11-21.

Yin, R. (1988) *Case study research: Design and methods*. UK: SAGE Publications.

Yin, R. (2003) *Applications of case study research (applied social research methods)*. Series, 4th. Thousand Oaks: SAGE Publications.

Zimmerman, L. and Treckles-Milligan, A. (2007) 'Perspectives on communicating with the Net Generation'. *Innovate: Journal of online education*, 4(2). Retrieved from: <http://innovateonline.info/>

Appendix A: Needs Analysis Survey

Needs Analysis Survey: Teacher Training In Computer Assisted Language Learning. (CALL)

1. To what extent is technology useful for you in the language class? Why?
2. Have you ever used technology in your language class?
 - i) If so, how did you implement it? Did you have any specific training for proper use of technology in language teaching? (Share your experience).
 - ii) If not, would you like to incorporate it in class? How do you think it could be well implemented? Would you like to receive training before using it? (Share your ideas)
3. What aspect (s) of using technology in the language class would foster student autonomy and independent learning?
4. How do you think technology can be used to manage online materials more effectively?
 - i) For Teachers:
 - ii) For Learners:
5. How could you make the most of online tasks?
6. What linguistic skill (s) is (are) best improved by using technology in language learning? Why?/ why not?
7. How would you like to be trained to use technology in the language class? Why?
8. How could teacher training in CALL influence/affect students' learning?
9. What's the role of employers/institution in teacher training?
10. Add any additional comment/opinion/idea/perspective on teacher training in CALL and its benefit for language learning.

Appendix B: Pre- and Post-Course Interview Questions

Pre-course interview questions

Section I: Attitudes towards using technology for language teaching

1. In what ways do you see the use of technology for language learning as a challenge in your professional practices?
2. How motivated are you to use technology for language teaching?
3. How confident do you feel when using technology for language teaching?
4. In what ways do you think your students would benefit from the incorporation of technology in the language classroom?

Section I: General electronic literacy.

5. How much do you know about the technological resources available for language teaching?
6. To what extent would you like to know more about new ways and ideas to use technology for language teaching?

Section II: Technological skills.

1. Could you comment on your technological skills for teaching purposes? (i.e. management of a specific software or webpage)
2. How do you choose the suitable technological resources to develop the language skills with your learners?
3. How easy is it for you to implement an activity using technology inside and outside the classroom with your students?
4. How difficult is it for you to implement an activity using technology inside and outside the classroom with your students?
5. How do you deal with technological constraints when using online resources to develop language skills?
6. Does your general knowledge using computers influence your decision making process when using technological resources for language teaching?

Section III: Pedagogical practices.

1. Could you comment on your experience using technology for language teaching?

2. In what ways do you relate your previous knowledge about language learning to the use of technological resources with your learners to improve language acquisition?
3. How would you integrate technological resources (i.e. software, internet tools) with learners to develop:
 - a. Different language skills?
 - b. Communicative competence in terms of spontaneous speaking or fluency?
 - c. Interaction?
 - d. Collaborative work (peer work)?
4. What kind of criteria in your teaching context do you use to select properly any material when implementing an activity with technological resources with your learners?
5. How could you/do you integrate technological resource into the coursebook or syllabus to develop language skills in your teaching context?

Section IV: Pedagogical/technical needs.

1. Describe your teaching context and the policies of the educational institution to facilitate the use of technological resources for language teaching and learning.
2. How do you feel about reflection on your pedagogical practices about technology for language learning?
3. Do you ever discuss with a colleague or a group what you do in class to integrate technology in language learning?
4. What is your perception about teacher training and development in technology for teaching purposes? What key areas/topics do you think would be useful to address?
5. What do you expect to learn from this training course?

Post-course interview questions

Section I: attitudes towards using technology for language teaching

1. How useful do you think this experience was for your professional development?
2. Do you feel more comfortable using technological resources after the course?
3. Do you feel more motivated to use technology in the language class?
4. Do you feel that you can use technological resources more efficiently after this online training experience?

Section II: Technological skills.

1. How did you develop your CALL technological/pedagogical skills for online teaching during the online course? Elaborate on how you interacted with peers, the materials and activities (steps you went through to foster your learning process)
2. Do you think you know more about the available technological resources, i.e software, internet, you have to include in your lessons?
3. How would you rate your ability to use technological resources for language teaching after the course?
4. What kind of problems have you encountered during the course?
5. How did you deal with the problems you encountered during the course?

Section III: Pedagogical practices

1. To what extent has your criteria to incorporate technology in class changed during/after the course?
2. Has the course had an influence on your teaching style?
3. Have you incorporated technology more in your classes during/after the course?
4. How do you feel about your theoretical knowledge after the course in terms of using technology in class?
5. In terms of creativity, how do you feel about using technology to create your own materials for the class?
6. Do you feel you have acquired knowledge to better design online tasks?
7. Does the course structure of reflection was useful for your pedagogical practices?
8. Does the course structure of peer feedback was useful to develop your pedagogical practices?

Section IV: Pedagogical/technical needs.

1. Do you feel more confident to discuss the use of technology in your L2 class with your educational institution or future employer?
2. What were the areas you think you better developed during/after the course?
5. Did you feel supported (by peers, moderator) to increase your knowledge or solve any inconvenience during/after the course?
6. Would you join any virtual community of language teachers after this experience?

7. What needs did you meet using individual and peer reflection during the course?
8. Do you think you would be able to train or even inspire other teachers to incorporate technology in their classes?

Appendix C: Questionnaires

Pre-course questionnaire

In order to understand the developmental processes which L2 teachers undergo when using technology in the language class, I have constructed a questionnaire to know more about the teachers' profile and knowledge in relation to their technical and pedagogical skills, as well as their professional needs when using technology with language learners. This useful information will allow me to know more about the teachers' background in terms of both technological and pedagogical CALL skills and knowledge they have and/or need to develop for online teaching.

In-service English teachers' demographic information:

Gender

Age

Job/position

Place of work

Number of classes/language levels

Years active as In-service teacher

SECTION I: Attitudes toward Technology for Language Teaching and Learning

1. The use of technology is a complement for language teaching and learning

Strongly agree-agree-disagree-strongly disagree

2. The use of technological resources in the L2 class is challenging for language teachers

Strongly agree-agree- disagree-strongly disagree

3. The use of technological resources in the L2 class is a distraction for learners

Strongly agree-agree-disagree-strongly disagree

4. I am confident using technological resources for language teaching and learning

Strongly agree-agree- disagree-strongly disagree

5. The incorporation of technological resources in my L2 class depends on my level of confidence about technology for teaching.

Strongly agree-agree- disagree-strongly disagree

Section II: Technological skills for language teaching.

6. I use technological resources for language teaching on a regular basis

Strongly agree-agree- disagree-strongly disagree

7. Would a lack of computer skills discourage you to use technological resources for language teaching?

Strongly agree-agree-disagree-strongly disagree

8. In general terms, do you consider yourself a:

Digital native (born and raised in the technological era)

Digital Immigrant (born and raised before the technological era-post 1980)

9. I understand how different technological resources (i.e authoring tools) can be used in language teaching to foster language skills

Strongly agree-agree-disagree-strongly disagree

10. I know what technological resources to choose for my learners when using technology in my class

Strongly agree-agree- disagree-strongly disagree

11. I am able to adapt technological resources (i.e. webpages, blogs) to implement activities my for my language learners to foster language skills (speaking/listening/reading/writing).

Strongly agree-agree-disagree-strongly disagree

12. I am able to produce technological resources (i.e. webpages, blogs) for my language learners to foster language skills (speaking/listening/reading/writing).

Strongly agree-agree- disagree-strongly disagree

13. I am able to assess my students using technological resources (i.e. online tests)

Strongly agree-agree- disagree-strongly disagree

14. I can deal with basic technical problems (i.e. browser incompatibility, downloading issues) when using technological resources in class.

Strongly agree-agree- disagree-strongly disagree

Section III: Pedagogical Skills and practices

15. What language learning approaches do you use in your L2 class? Mark more than one if applicable.

Grammar-translation

Task Based Language Teaching (TBLT)

Audiolingual

Cooperative Learning (CL)

Presentation Practice Production (PPP)

Other

Communicative Language Teaching (CLT)

16. I am aware of any theoretical approach or theory about the incorporation of technology for language teaching and learning

Strongly agree-agree-disagree-strongly disagree

17. I consider the use of technology in my language class as part of my teaching style

Strongly agree-agree- disagree-strongly disagree

18. I am capable of incorporating technological resources into the course syllabus for my language class

Strongly agree-agree-disagree-strongly disagree

19. I am aware of strategies to facilitate online teaching (i.e. moderation on a discussion forum) to develop language skills

Strongly agree-agree- disagree-strongly disagree

20. I do not use any criteria to select technological resources using technology in class

Strongly agree-agree-disagree-strongly disagree

21. I am able to identify pedagogical strategies (i.e. use of 'keypals' to enhance writing skills) to use technological resources effectively to foster language skills

Strongly agree-agree-disagree-strongly disagree

22. I use language learning strategies to make the most of the online materials I use in the L2 class so the students can benefit from them

Strongly agree-agree- disagree-strongly disagree

23. I am creative when I design tasks using technological resources with my learners

Strongly agree-agree- disagree-strongly disagree

24. I am able to make effective decisions regarding the task design (i.e. specific activity) using technological resources.

Strongly agree-agree- disagree-strongly disagree

25. I am able to make effective decisions regarding lesson planning (i.e. specific class) using technological resources.

Strongly agree-agree-disagree-strongly disagree

26. I am able to train my students to make effective use of technological resources for their language learning process.

Strongly agree-agree- disagree-strongly disagree

27. I am able to motivate my colleagues to incorporate technology in their teaching practices

Strongly agree-agree- disagree-strongly disagree

Section IV: Pedagogical/technological needs in CALL.

28. I need technological support to incorporate technology in my language classroom.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

29. I need pedagogical support to incorporate technology in my language classroom.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

30. Language Teacher training in technology is relevant for teachers' professional development.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

31. I have received formal training about how to use technology in the L2 classroom

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

32. Teachers should be encouraged by their educational institution to incorporate technological resources for language teaching.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

Post-course questionnaire

SECTION I: Attitudes toward Technology for Language Teaching and Learning

1. The use of technology is a complement for language teaching and learning

Strongly agree-agree-disagree-strongly disagree

2. The use of technological resources in the L2 class is challenging for language teachers

Strongly agree-agree- disagree-strongly disagree

3. The use of technological resources in the L2 class is a distraction for learners

Strongly agree-agree-disagree-strongly disagree

4. I am confident using technological resources for language teaching and learning

Strongly agree-agree- disagree-strongly disagree

5. The incorporation of technological resources in my L2 class depends on my level of confidence about technology for teaching.

Strongly agree-agree- disagree-strongly disagree

Section II: Technological skills for language teaching.

6. I use technological resources for language teaching on a regular basis

Strongly agree-agree- disagree-strongly disagree

7. Would a lack of computer skills discourage you to use technological resources for language teaching?

Strongly agree-agree-disagree-strongly disagree

8. In general terms, do you consider yourself a:

Digital native (born and raised in the technological era)

Digital Immigrant (born and raised before the technological era-post 1980)

9. I understand how different technological resources (i.e authoring tools) can be used in language teaching to foster language skills

Strongly agree-agree-disagree-strongly disagree

10. I know what technological resources to choose for my learners when using technology in my class

Strongly agree-agree- disagree-strongly disagree

11. I am able to adapt technological resources (i.e. webpages, blogs) to implement activities my for my language learners to foster language skills (speaking/listening/reading/writing).

Strongly agree-agree-disagree-strongly disagree

12. I am able to produce technological resources (i.e. webpages, blogs) for my language learners to foster language skills (speaking/listening/reading/writing).

Strongly agree-agree- disagree-strongly disagree

13. I am able to assess my students using technological resources (i.e. online tests)

Strongly agree-agree- disagree-strongly disagree

14. I can deal with basic technical problems (i.e. browser incompatibility, downloading issues) when using technological resources in class.

Strongly agree-agree- disagree-strongly disagree

Section III: Pedagogical Skills and practices

15. What language learning approaches do you use in your L2 class? Mark more than one if applicable.

Grammar-translation

Task Based Language Teaching (TBLT)

Audiolingual

Cooperative Learning (CL)

Presentation Practice Production (PPP)

Other

Communicative Language Teaching (CLT)

16. I am aware of any theoretical approach or theory about the incorporation of technology for language teaching and learning

Strongly agree-agree-disagree-strongly disagree

17. I consider the use of technology in my language class as part of my teaching style

Strongly agree-agree- disagree-strongly disagree

18. I am capable of incorporating technological resources into the course syllabus for my language class

Strongly agree-agree-disagree-strongly disagree

19. I am aware of strategies to facilitate online teaching (i.e. moderation on a discussion forum) to develop language skills

Strongly agree-agree- disagree-strongly disagree

20. I do not use any criteria to select technological resources using technology in class

Strongly agree-agree-disagree-strongly disagree

21. I am able to identify pedagogical strategies (i.e. use of keypals to enhance writing skills) to use technological resources effectively to foster language skills

Strongly agree-agree-disagree-strongly disagree

22. I use language learning strategies to make the most of the online materials I use in the L2 class so the students can benefit from them

Strongly agree-agree- disagree-strongly disagree

23. I am creative when I design tasks using technological resources with my learners

Strongly agree-agree- disagree-strongly disagree

24. I am able to make effective decisions regarding the task design (i.e. specific activity) using technological resources.

Strongly agree-agree- disagree-strongly disagree

25. I am able to make effective decisions regarding lesson planning (i.e. specific class) using technological resources.

Strongly agree-agree-disagree-strongly disagree

26. I am able to train my students to make effective use of technological resources for their language learning process.

Strongly agree-agree- disagree-strongly disagree

27. I am able to motivate my colleagues to incorporate technology in their teaching practices

Strongly agree-agree- disagree-strongly disagree

Section IV: Pedagogical/technological needs in CALL.

28. I need technological support to incorporate technology in my language classroom.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

29. I need pedagogical support to incorporate technology in my language classroom.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

30. Teacher training in technology use for language teaching purposes is relevant for teachers' professional development.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

31. I have received formal training about how to use technology in the L2 classroom

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

32. Teachers should be encouraged by their educational institution to incorporate technological resources for language teaching.

Strongly agree-agree- Neither agree nor disagree-disagree-strongly disagree

SECTION V: Online teacher training and development course for CALL

33. During/after the online teacher training course I have reviewed my prior knowledge about language teaching

Strongly agree-agree- disagree-strongly disagree

34. I have acquired CALL skills and knowledge on how to use online teaching with my learners

Strongly agree-agree- disagree-strongly disagree

35. During/after the online course I am creative when designing technology-mediated activities for my learners

Strongly agree-agree-disagree-strongly disagree

36. During/after the online course I am able to make effective decisions to choose technological resources appropriately (i.e software, webpage, authoring tool)

Strongly agree-agree- disagree-strongly disagree

37. During/after the online teacher training course I am able to train my students to make effective use of technological resources for L2 learning

Strongly agree-agree- disagree-strongly disagree

38. Reflection helped me to improve my pedagogical CALL skills and knowledge for online language teaching

Strongly agree-agree-disagree-strongly disagree

39. Reflection helped me to improve my technological CALL skills and knowledge for online language teaching

Strongly agree-agree- disagree-strongly disagree

40. I am aware about the teacher role in online teaching

Strongly agree-agree-disagree-strongly disagree

41. I have discussed what I have learned in the online course with my own colleagues in my teaching context

Strongly agree-agree- disagree-strongly disagree

42. I am able to transfer my acquired knowledge and skills to my colleagues, so they can also innovate in their classes.

Strongly agree-agree-disagree-strongly disagree

43. Which of the following resources from the online teacher training course did you use the most to develop your competence about using online resources for language teaching and learning? Mark all that apply.

Videos

Audio files

Academic papers

Links to webpages

Power point presentations

Other

Appendix D: Pre-and Post-Course Questionnaire Results

Pre-course questionnaire results

'The use of technology is a complement for language teaching and learning'

		Frequency	Percent	Valid Percent
Valid	strongly agree	8	100.0	100.0

'The use of technological resources in the L2 class is a distraction for learners'

		Frequency	Percent	Valid Percent
Valid	disagree	5	62.5	62.5
	strongly disagree	3	37.5	37.5
	Total	8	100.0	100.0

'The use of technological resources in the L2 class is challenging for language teachers.'

		Frequency	Percent	Valid Percent
Valid	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

'The incorporation of technological resources in my L2 class depends on my level of confidence about technology for teaching'

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	6	75.0	75.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

'I am confident using technological resources for language teaching and learning'

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	37.5	37.5
	agree	5	62.5	62.5
	Total	8	100.0	100.0

'I use technological resources for language teaching on a regular basis'

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	37.5	37.5
	agree	3	37.5	37.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

Would a lack of computer skills discourage you to use technological resources for language teaching?

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	1	12.5	12.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

*In general terms, do you consider yourself a: **Digital native/Digital Immigrant***

		Frequency	Percent	Valid Percent
Valid	digital native	5	62.5	62.5
	digital immigrant	3	37.5	37.5
	Total	8	100.0	100.0

I understand how different technological resources (i.e. authoring tools) can be used in language teaching to foster language skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	4	50.0	50.0
	disagree	3	37.5	37.5
	Total	8	100.0	100.0

I know what technological resources to choose for my learners when using technology in my class

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	6	75.0	75.0
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

*I am able to **adapt** technological resources (i.e. webpages, blogs) to implement activities my for my language learners to foster language skills (speaking/listening/reading/writing).*

		Frequency	Percent	Valid Percent
Valid	agree	6	75.0	75.0
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am able to **produce** technological resources (i.e. webpages, blogs) for my language learners to foster language skills (speaking/listening/reading/writing).

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	3	37.5	37.5
	disagree	2	25.0	25.0
	strongly agree	1	12.5	12.5
	Total	8	100.0	100.0

I am able to assess my students using technological resources (i.e. online tests)

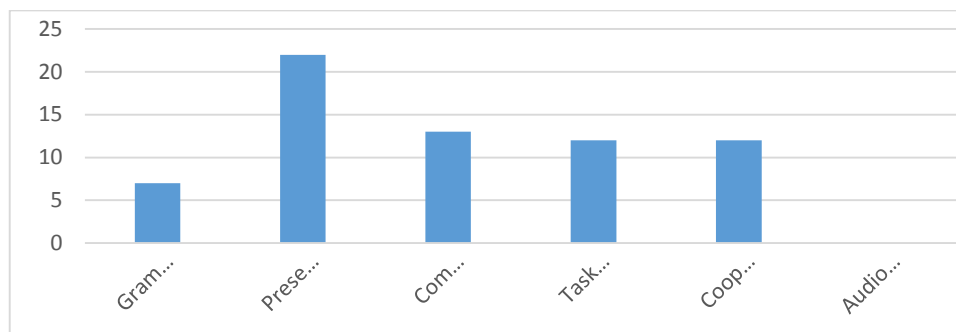
		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	2	25.0	25.0
	disagree	4	50.0	50.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

I can deal with basic technical problems (i.e. browser incompatibility, downloading issues) when using technological resources in class.

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	5	62.5	62.5
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Section III: Pedagogical Skills and practices

What language learning approaches do you use in your L2 class? Mark more than one if applicable.



I am aware of any theoretical approach or theory about the incorporation of technology for language teaching and learning

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I consider the use of technology in my language class as part of my teaching style

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	3	37.5	37.5
	disagree	4	50.0	50.0
	Total	8	100.0	100.0

I am capable of incorporating technological resources into the course syllabus for my language class

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	5	62.5	62.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I am aware of strategies to facilitate online teaching (i.e. moderation on a discussion forum) to develop language skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	3	37.5	37.5
	disagree	4	50.0	50.0
	Total	8	100.0	100.0

I do not use any criteria to select technological resources using technology in class

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am able to identify pedagogical strategies (i.e. use of 'keypals' to enhance writing skills) to use technological resources effectively to foster language skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

*I use language learning **strategies** to make the most of the online materials I use in the L2 class so the students can benefit from them*

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	4	50.0	50.0
	disagree	3	37.5	37.5
	Total	8	100.0	100.0

I am creative when I design tasks using technological resources with my learners

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	4	50.0	50.0
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am able to make effective decisions regarding the task design (i.e. specific activity) using technological resources.

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am able to make effective decisions regarding lesson planning (i.e. specific class) using technological resources.

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	5	62.5	62.5
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am able to train my students to make effective use of technological resources for their language learning process.

		Frequency	Percent	Valid Percent
Valid	strongly agree	1	12.5	12.5
	agree	4	50.0	50.0
	disagree	3	37.5	37.5
	Total	8	100.0	100.0

I am able to motivate my colleagues to incorporate technology in their teaching practices

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	37.5	37.5
	agree	2	25.0	25.0
	disagree	3	37.5	37.5
	Total	8	100.0	100.0

Section IV: Pedagogical/technological needs in CALL.

I need technological support to incorporate technology in my language classroom.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	1	12.5	12.5
	disagree	2	25.0	25.0
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

I need pedagogical support to incorporate technology in my language classroom.

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	37.5	37.5
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	strongly disagree	1	12.5	12.5
	Total	8	100.0	100.0

Language Teacher training in technology is relevant for teachers' professional development.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	4	50.0	50.0
	Total	8	100.0	100.0

I have received formal training about how to use technology in the L2 classroom

		Frequency	Percent	Valid Percent
Valid	agree	1	12.5	12.5
	disagree	4	50.0	50.0
	strongly disagree	3	37.5	37.5
	Total	8	100.0	100.0

Teachers should be encouraged by their educational institution to incorporate technological resources for language teaching.

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Post-course questionnaire results

SECTION I: Attitudes towards Technology for Language Teaching and Learning

The use of technology is a complement for language teaching and learning

		Frequency	Percent	Valid Percent
Valid	strongly agree	8	100.0	100.0

The use of technological resources in the L2 class is challenging for language teachers

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	5	62.5	62.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

The use of technological resources in the L2 class is a distraction for learners

		Frequency	Percent	Valid Percent
Valid	disagree	6	75.0	75.0
	strongly disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am confident using technological resources for language teaching and learning

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	6	75.0	75.0
	Total	8	100.0	100.0

The incorporation of technological resources in my L2 class depends on my level of confidence about technology for teaching.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	2	25.0	25.0
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

Section II: Technological skills for language teaching.

I use technological resources for language teaching on a regular basis

		Frequency	Percent	Valid Percent
Valid	strongly agree	7	87.5	87.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

Would a lack of computer skills discourage you to use technological resources for language teaching?

		Frequency	Percent	Valid Percent
Valid	strongly agree	7	87.5	87.5
	agree	1	12.5	12.5
	Total	8	100.0	100.0

In general terms, you consider yourself a: Digital native/Digital Immigrant

		Frequency	Percent	Valid Percent
Valid	digital native teacher	3	37.5	37.5
	digital immigrant teacher	5	62.5	62.5
	Total	8	100.0	100.0

I understand how different technological resources (i.e authoring tools) can be used in language teaching to foster language skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

I know what technological resources to choose for my learners when using technology in my class

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

*I am able to **adapt** technological resources (i.e. webpages, blogs) to implement activities my for my language learners to foster language skills (speaking/listening/reading/writing).*

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	2	25.0	25.0
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

*I am able to **produce** technological resources (i.e. webpages, blogs) for my language learners to foster language skills (speaking/listening/reading/writing).*

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	2	25.0	25.0
	disagree	2	25.0	25.0
	Total	8	100.0	100.0

I am able to assess my students using technological resources (i.e. online tests)

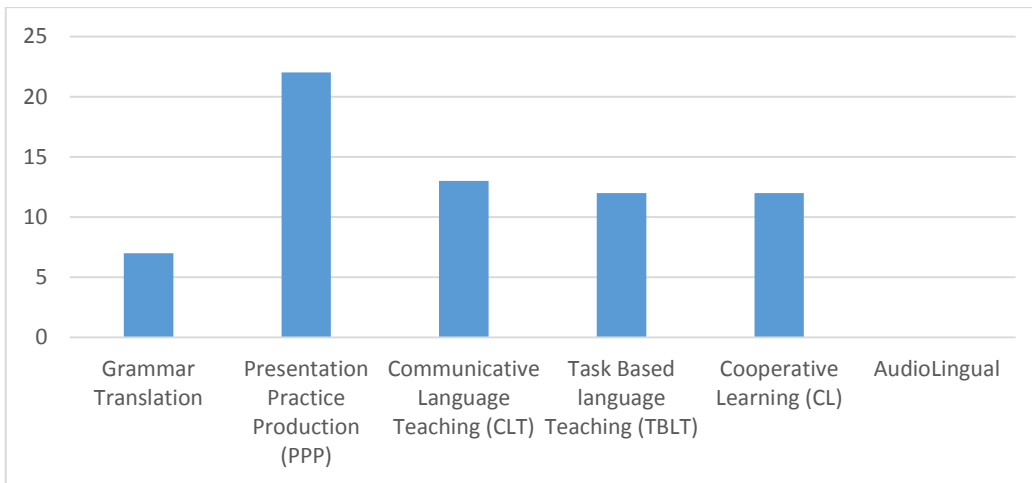
		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I can deal with basic technical problems (i.e. browser incompatibility, downloading issues) when using technological resources in class.

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	37.5	37.5
	agree	5	62.5	62.5
	Total	8	100.0	100.0

Section III: Pedagogical Skills and practices

What language learning approaches do you use in your L2 class? mark more than one if applicable.



I am aware of any theoretical approach or theory about the incorporation of technology for language teaching and learning

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

I consider the use of technology in my language class as part of my teaching style

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

I am capable of incorporating technological resources into the course syllabus for my language class

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

I am aware of strategies to facilitate online teaching (i.e. moderation on a discussion forum) to develop language skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	1	12.5	12.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I do not use any criteria to select technological resources using technology in class

		Frequency	Percent	Valid Percent
Valid	strongly agree	3	62.5	62.5
	agree	2	25.0	25.0
	disagree	3	12.5	12.5
	Total	8	100.0	100.0

I am able to identify pedagogical strategies (i.e. use of keypals to enhance writing skills) to use technological resources effectively to foster language skills

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

*I use language learning **strategies** to make the most of the online materials I use in the L2 class so the students can benefit from them*

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	2	25.0	25.0
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I am creative when I design tasks using technological resources with my learners

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

I am able to make effective decisions regarding the task design (i.e. specific activity) using technological resources.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	4	50.0	50.0
	Total	8	100.0	100.0

I am able to make effective decisions regarding lesson planning (i.e. specific class) using technological resources.

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

I am able to train my students to make effective use of technological resources for their language learning process.

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I am able to motivate my colleagues to incorporate technology in their teaching practices

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Section IV: Pedagogical/technological needs in CALL.

I need technological support to incorporate technology in my language classroom.

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	2	25.0	25.0
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I need pedagogical support to incorporate technology in my language classroom.

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Teacher training in technology use for language teaching purposes is relevant for teachers' professional development.

		Frequency	Percent	Valid Percent
Valid	Strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

I have received formal training about how to use technology in the L2 classroom

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

Teachers should be encouraged by their educational institution to incorporate technological resources for language teaching.

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

SECTION V: Online teacher training and development course for CALL

During/after the online teacher training course I have reviewed my prior knowledge about language teaching

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

I have acquired CALL skills and knowledge on how to use online teaching with my learners

		Frequency	Percent	Valid Percent
Valid	strongly agree	7	87.5	87.5
	agree	1	12.5	12.5
	Total	8	100.0	100.0

During/after the online course I am creative when designing technology-mediated activities for my learners

		Frequency	Percent	Valid Percent
Valid	strongly agree	7	87.5	87.5
	agree	1	12.5	12.5
	Total	8	100.0	100.0

During/after the online course I am able to make effective decisions to choose technological resources appropriately (i.e software, webpage, authoring tool)

		Frequency	Percent	Valid Percent
Valid	strongly agree	6	75.0	75.0
	agree	2	25.0	25.0
	Total	8	100.0	100.0

During/after the online teacher training course I am able to train my students to make effective use of technological resources for L2 learning

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

*Reflection helped me to improve **my pedagogical CALL skills and knowledge** for online language teaching*

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

Reflection helped me to improve my **technological CALL skills and knowledge** for online language teaching

		Frequency	Percent	Valid Percent
Valid	strongly agree	2	25.0	25.0
	agree	6	75.0	75.0
	Total	8	100.0	100.0

I am aware about the teacher role in online teaching

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	3	37.5	37.5
	Total	8	100.0	100.0

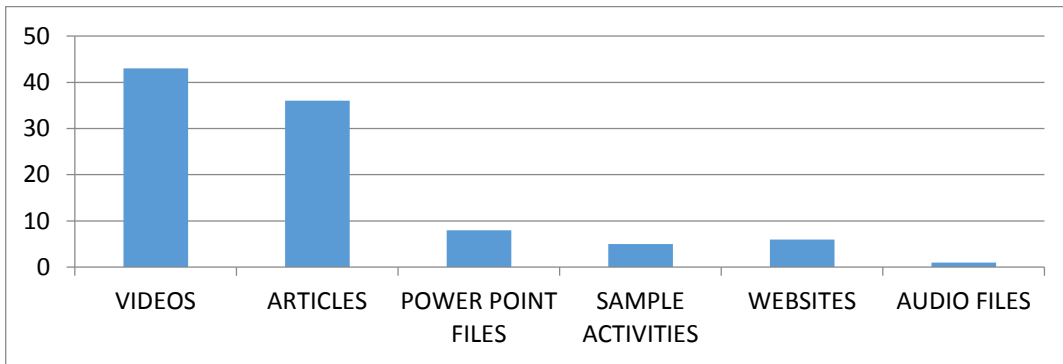
I have discussed what I have learned in the online course with my own colleagues in my teaching context

		Frequency	Percent	Valid Percent
Valid	strongly agree	4	50.0	50.0
	agree	3	37.5	37.5
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

I am able to transfer my acquired knowledge and skills to my colleagues, so they can also innovate in their classes.

		Frequency	Percent	Valid Percent
Valid	strongly agree	5	62.5	62.5
	agree	2	25.0	25.0
	disagree	1	12.5	12.5
	Total	8	100.0	100.0

Which of the following resources from the online teacher training course did you use the most to develop your competence about using online resources for language teaching and learning? Mark all that apply.



Appendix E: Course Description and Syllabus

WELCOME TEACHERS 😊

We are delighted to have you involved in this research project about the skills that language teachers need in order to use technological resources effectively with learners, and we look forward to starting with the course! Below you will find a description and useful information about the process and the online training course. Nevertheless, should you have any observation/comment, please, do not hesitate to contact me at s.morales-rios@newcastle.ac.uk

PRE-TRAINING ACTIVITIES:

Objective: In order to understand the developmental processes which L2 teachers undergo when using technology in the language class, we have elaborated a set of instruments which will allow us to know more about you as a teacher in relation to your technical and pedagogical skills, as well as your professional needs when using technology with language learners.

1. *Online Questionnaire* (SurveyMonkey): General information from all the teacher participants⁵ about their profile, background, knowledge and needs about teaching and teaching with technology.
2. *Online Interview* (via Skype, 45 min.): Individual discussion about the teacher participant's background, views, knowledge, expertise and skills with reference to technology and technology for language learning and teaching.

ONLINE TRAINING COURSE: 'Transformative learning': The developmental processes of L2 teachers as effective users of online resources for language learning and teaching.

Start date: Week of May 13th, 2013

Objective: The course is intended to raise awareness and support autonomous teacher education in technology and, especially, the teacher participants' professional training and development in the use of technology with language learners. Information gathered will help to analyze the teacher participants' developmental processes in this cycle of training and reflective practice.

Description: The teacher participants will be exposed to training through an online platform that will provide basic theory as well as practical information about technology in language learning. The training will be an opportunity for the teacher participants to perform tasks, foster their collaborative work and reflect as an individual, and as part of an online community.

The teacher participants will be enrolled in the course by the researcher and will be provided with an **introductory tutorial and guidelines** about the procedures of the course prior to start. During the course, the contents will be uploaded into the online platform (**ONE each week**) where the teacher participants should revise the theoretical principles and models, and then complete the activities required in the discussion forum and their individual blogs. Therefore, the teacher participants are

⁵ The researcher (Ms. Morales) will send the teacher participants a link for survey completion.

expected to work in their own time at their own pace. However, they will have to make sure to finish the activities each week before any new topic is posted.

Syllabus

- Week 1 (May, 13th) : *Electronic Literacy*
 - i. The Digital Native era.
 - ii. Electronic Literacy definition.
 - iii. Teacher's use of Electronic Literacy in the language classroom.
- Week 2: *Computer Assisted Language Learning (CALL)* principles and methods
 - i. Definition and framework
 - ii. Authoring tools.
 - iii. E-learning and Blended-learning.
- Week 3: *Learning Styles and strategies*
 - i. Definition.
 - ii. Description.
 - iii. Use in technology for language learning.
- Week 4 *Computer Mediated Communication (CMC)*
 - i. Definition.
 - ii. Useful tools.
 - iii. Use for language learning and teaching.
- Week 5: *Mobile Learning*
 - i. Definition.
 - ii. Devices available.
 - iii. Use for language learning and teaching.
- Week 6 : *Teaching Culture through CALL*

- i. Definition.
 - ii. Pedagogical projects.
 - iii. Teaching culture and technology.
- Week 7: (July, 1st): *Networking and Community building for learning and development.*
 - i. Sense of community.
 - ii. Social networks and virtual communities.
 - iii. Pedagogical use for language learning.
- Week 8: *online teaching and learning.*
 - i. Description
 - ii. Ideas for teaching

Appendix F: Consent Form

Informed Consent Form



Details of project

Type of project: PhD (doctoral) research project.

Name: *'Transformative Learning': The developmental processes of L2 teachers as effective users of online resources for language learning and teaching.*

Researcher's contact details: Ms. Sandra Morales: s.morales-rios@newcastle.ac.uk

I, the undersigned, confirm that (please tick box as appropriate):

1.	I have read and understood the information about the project, as provided in the Information Sheet dated __April, 3 rd 2013__.	<input checked="" type="checkbox"/>
2.	I have been given the opportunity to ask questions about the project and my participation.	<input checked="" type="checkbox"/>
3.	I voluntarily agree to participate in the project.	<input checked="" type="checkbox"/>
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.	<input checked="" type="checkbox"/>
5.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymisation of data, etc.) to me.	<input checked="" type="checkbox"/>
6.	If applicable, separate terms of consent for interviews, audio, video or other forms of data collection have been explained and provided to me.	<input checked="" type="checkbox"/>
7.	The use of the data in research, publications, sharing and archiving has been explained to me.	<input checked="" type="checkbox"/>
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	<input checked="" type="checkbox"/>
9.	Select only one of the following:	<input checked="" type="checkbox"/>
	<ul style="list-style-type: none"> • I would like my name used and understand what I have said or written as part of this study will be used in reports, publications and other research outputs so that anything I have contributed to this project can be recognised. • I do not want my name used in this project. 	<input type="checkbox"/>
10.	I, along with the Researcher, agree to sign and date this informed consent form.	<input checked="" type="checkbox"/>

Participant:

Name of Participant

Signature

10/05/2013
Date

Researcher:

Sandra Morales
Name of Researcher

137309912/109172624
Signature

10/05/2013
Date

Appendix G: End-of-Course Letter of Participation

Hereby I confirm that Mrs. [redacted] volunteered as a participant in the doctoral research project entitled; *'Transformative learning': The developmental processes of L2 teachers as effective users of online resources for language learning and teaching*, sponsored by the IPhD Programme in Educational and Applied Linguistics, School of Education, Communication and Language Sciences in Newcastle University, UK.

This project consisted of an 8 week (May 13th [redacted] 2013) online teacher training course which included *theory, practice and reflection on topics regarding the use of technological resources with English language learners*. The online training course syllabus comprised the following contents:

- Electronic Literacy
- Computer Assisted Language Learning (CALL)
- Learning Styles
- Computer Mediated Communication (CMC)
- Mobile Learning
- Task Based Language Teaching and CALL
- Teaching culture through CALL
- Networking and community building through CALL
- Online teaching and learning

Should you have any comments or questions, please, do not hesitate to contact me (Responsible doctoral researcher). Many thanks.

Kind regards,



Sandra Morales
PhD Researcher

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Communication &
Language Sciences

