EXPLORING THE USE OF METACOGNITIVE STRATEGIES IN THE TECHNOLOGY-ENHANCED CLASSROOM: THE BEGINNER LANGUAGE LEARNER EXPERIENCE

A Thesis submitted by

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ABSTRACT

This action research study was initiated to establish new knowledge about the effects of metacognitive awareness raising amongst early adult foreign language learners. The study explores their use of metacognitive strategies in technology-enhanced classrooms at the first year college level Spanish in Canada. As part of the regular course syllabus, eight participants received explicit instruction in class on strategic learning, as well as on the use of technological tools (*iLrn, Moodle, YouTube, Collaborate)*. The first cycle of the study established rapport between the practitioner-researcher and the learners, providing preparation and support for learning Spanish, employing strategic actions and using digital resources. Analysis of the interactions and reflections on selected collaborative multimodal tasks in cycles two, three and four identified how early foreign language learners process information for a deeper understanding of themselves as language learners and develop autonomous learning strategies. The data collection instruments employed over the four cycles of action research included pre- and post-treatment questionnaires, audio transcripts of participant task interactions, participant post-task self-reflections, practitioner-researcher observations and reflections, and selected interviews. The study established that even at the early stages of their foreign language processing early adult foreign language learners benefit from metacognitive awareness-raising instruction and teacher support. Findings showed that learners used a targeted repertoire of strategies to manage their learning in the technology-enhanced language classroom. There was an observed increase in their self-efficacy and autonomous behaviours. Understanding the learners' perceptions and experiences was central to the pedagogical knowledge that was gained

by the teacher-researcher as a means of informing teaching practice to enhance the beginner language learner experience. The action research design and findings emphasize the importance of the role of the language teacher to be a digitally literate, metacognitively-aware task designer and support guide for the learners. The study has demonstrated that adult early foreign language learners in a contemporary technology-enhanced language classroom benefitted from a holistic approach to developing cognitive and metacognitive strategies in teaching and learning.

Certification of Thesis

This Thesis is entirely the work of Charlotte Jones except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor: Associate Professor Ann Dashwood

Associate Supervisor: Associate Professor Jeong-Bae Son

Student and supervisors signatures of endorsement are held at the University.

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Table of Contents

List of Figures

List of Tables

Glossary and Acronyms

Terms and acronyms are listed here first, and are used extensively through the thesis.

ACMC – Asynchronous Computer-Mediated Communication

AR – Action Research

BALLI –Beliefs About Language Learning Inventory questionnaire (originally designed by Horwitz 1987 and used by Bernat, Carter, & Hall, 2009)

BL - Blended Learning – For this study, defined as the "thoughtful fusion of face-to-face and online learning experiences." (Garrison & Vaughan, 2008, p. 5)

CALL – Computer-Assisted Language Learning

CBAR – Classroom-Based Action Research

CMC – Computer-Mediated Communication

Collaborative learning - This term applies here to learning which occurs in learner-learner interactions that lead to the co-construction of knowledge and processing of language in task-based contexts.

EFL – English as a Foreign Language

ESL – English as a Second Language

Languaging – "the process of making meaning and shaping knowledge and experience through language. Languaging organizes and controls (mediates) mental processes during the performance of cognitively complex tasks." (Swain, Kinnear & Steinman, 2015, p. 149).
In this study languaging is used to refer to **collaborative dialogue** (building knowledge with others) and **private speech** (building knowledge with self), two examples of languaging taken from Swain, et al).

L2 – Second Language – refers to the target language being learned

Learner autonomy – refers to the ability of learners to manage their own learning, to reflect critically on how and what they learn, and to take independent action to achieve their learning goals.

LRE – Language-Related Episodes are learner interactions in collaborative work in which learners are consciously paying attention to accuracy in form, pronunciation, vocabulary or spelling during tasks.

MALQ – Metacognitive Awareness Listening Questionnaire (Vandergrift, Goh, Mareschal & Tafaghodtari, 2006)

MARQ – Metacognitive Awareness-Raising Questions

Metacognition – Metacognition refers to the ability to reflect on what is known cognitively, to evaluate whether that knowledge requires making changes in managing the learning, and to apply strategies for that purpose. Metacognition is the collective term for metacognitive awareness, metacognitive knowledge, and metacognitive strategies (Anderson, 2008; Wenden, 1999, 2002; Flavell, 1979).

Multimodal – The two-pronged operational definition in this study refers to the multiple modes of **learning resources** (textual, visual, aural, digital and social) and **contexts** (face-to-face and CALL)

SCMC – Synchronous Computer-Mediated Communication

Self-efficacy – The definition of self-efficacy stems from the theory articulated by Bandura (1977) "based on the principal assumption that psychological procedures, whatever their form, serve as means of creating and strengthening expectations of personal efficacy." (p.193). As a conceptual system, the strength of a person's belief in their effectiveness will influence their level of effort and coping capacity in achieving a particular goal (Bandura, 1977, 1982). This study follows the principle that perceived self-efficacy is a "judgment of capability" (Bandura, 2006, p.308). The higher the level of perceived self-efficacy, the more effort a person is likely to make to attain a goal.

SLA – Second Language Acquisition

TBLL – Task-Based Language Learning

TBLT – Task-Based Language Teaching

TELL – Technology-Enhanced Language Learning

TPAR – Teacher-Practitioner-Action-Researcher

ZPD – Zone of Proximal Development is the Vygotskian definition for the learning space in which a learner acquires knowledge and achieves learning objectives through social interactions with, and by the support of, a more knowledgeable learner in the learning community (Vygotsky, 1978). Along with this definition, this study also refers to Swain, Kinnear, & Steinman's (2015) definition of ZPD as the "interactions during which, through mediation, an individual achieves more than she could have achieved if she had been working alone" (p. 150). In that sense, the definition of the ZPD refers to both space and action.

CHAPTER 1 INTRODUCTION

Exploring beginner language learning experience and metacognitive awareness raising amongst postsecondary Spanish language learners in a technology-enhanced classroom has received limited attention to date. While substantial research has been conducted on language learning strategies in face-to-face environments at the intermediate and advanced levels in technology-mediated environments (Blanco, Pino & Rodriguez 2010; Gao & Zhang 2011; Yanguas 2010), less is known about the effects of strategic instruction among beginner learners of a foreign language who access learning resources in a variety of environments, both in person and online. An understanding of the strategic processes and experiences of beginner language learners in technology-mediated environments is considered foundational knowledge for providing direction for instruction in facilitating metacognitive strategies instruction. For beginner tertiary European language learners, it is not known how strategic they are in their language learning.

This study explores the learning experiences of beginner Spanish language learners and actions they take in managing their own learning. The study analyses observed and reported effects of metacognitive strategy instruction in terms of actions the learners take, and strategies they use to complete collaborative multimodal tasks in technology-enhanced language learning (TELL) environments. It compares results from previous studies on metacognition among beginner foreign language learners utilizing multimodal resources and contexts in higher education.

While the effects of using cognitive strategies were being compared, it was also acknowledged that beginner foreign language learners may have been experiencing the affective

filters of anxiety and stress with a negative impact on their self-efficacy and therefore on their ability to process language effectively. Therefore, it was anticipated that at the same time as developing strategies to manage their learning to accomplish language-learning tasks, a supportive social environment was provided to observe levels of confidence and self-efficacy of the tertiary Spanish language learners. Further, the role played by the teacher-practitioner-researcher in facilitating the strategic learning process provided knowledge of the impact of strategic teaching practices.

1.1 Background to the study

As language educator-researcher, I had observed that learners in the first year Spanish language classroom exhibited higher levels of anxiety about their learning than in other classes and subjects taught in their first language. They often expressed confusion, including difficulties they experienced in focusing on tasks, and they shared feelings of frustration with what they perceived as their lack of ability to learn more quickly and to be more accurate in processing language. Although it is understood that negative affective factors may be at play among adult language learners (Dörnyei, 2001, 2005, 2009), this researcher's observation was that concerns seemed to arise from the learners' perceived lack of control and limited understanding of the processes involved in their language learning. As a result of observing that students became anxious and that the stress appeared to reduce their self-efficacy as language learners, this study was needed to report the impact of learning strategies and extent of their application on levels of self-efficacy and strategic behaviour of adult students to manage their own learning.

In Spanish language teaching at postsecondary college level in Canada, new foreign language textbooks have been designed to follow current established standards in language

learning and teaching. The proficiency guidelines set out in ACTFL (American Council on the Teaching of Foreign Languages) and the CEFR (Common European Framework of Reference for Languages) are similar in their aims to provide tools for describing language abilities across languages. The ACTFL guidelines provide a framework for language assessment and a national US standard for proficiency testing. The CEFR provides a tool with descriptors of language ability which not only provide "transparency and clear reference points for assessment purposes, but also increasingly inform curriculum reform and pedagogy" (CEFR, 2018, p. 25). Learning materials aligned with these guidelines promote an action-oriented task-based approach (Piccardo, 2014). Those learning materials are being supplemented by software language learning programs with full audio and visual capacities which contribute to establishing dynamic learning environments in both face-to-face and computer-mediated contexts. Furthermore, the increasing number of online open educational resources and social media has opened up a range of possibilities for creating, motivating and stimulating a diversity of language learning contexts. There is a need for language learners at the postsecondary level to cultivate their ability to utilize digital technology with mixed modes of learning resources and contexts in order to be successful in the contemporary foreign language classroom. While learners are familiar with, and competent in, using a number of technological tools in their daily lives for personal purposes, the researcher's teaching experience has revealed that students have limited knowledge or experience in using technology to facilitate their learning of a foreign language.

As a practitioner-researcher, I have observed that the first-year college language course curriculum is demanding to the point that it exceeds the cognitive load and technological competency that beginner learners can manage, contributing to students' reduced motivation

and lower self-efficacy. Therefore, the impetus for the study arose from the idea that if beginner language learners acquired the metacognitive awareness and strategies, and technological competencies to become more effective and efficient in processing language learning at the early stages of their language development, they may increase their self-efficacy and become more autonomous language learners.

Contemporary research of instruction and use of metacognitive strategies in technology-enhanced classrooms in higher education in Canada is under-explored, particularly in beginner foreign language courses. Furthermore, an understanding of the strategic processes and experiences of beginner language learners in technology-enhanced environments may provide future directions for strategies instruction in computer-assisted language learning (CALL) at the beginner learner level. In turn there may be implications for changes to the language support written into the first year foreign language college syllabus. Deeper understanding of studies in these areas has revealed theoretical support for my observations, thereby enabling me to frame the conceptual framework of this study.

1.2 Focus and aims of the study

The aim of the study was to deeply examine the effects of metacognitive strategies instruction and awareness-raising on beginner language learners as they completed technology-enhanced learning tasks. A fundamental part of the teaching and research process was to get as close as possible to the learner experience in order to better understand it and to take steps for personal learning to become more effective. For that purpose, an action research approach was chosen to allow me as practitioner-researcher to become both observer and participant in the experiential research. Classroom-based action research projects seek to centralise the learner's

experience and the learner's voice. By reflecting on the findings in each cycle, the action-researcher-teacher utilises resources that allow more informed decisions to be made about changes in the language classroom. In turn there may be implications for change in language education in the broader context (Convery, 2014; Somekh & Zeichner, 2009). It is often the teacher-response to the way in which learning is taking place that impacts the learner. In this study the unique perspective of an insider was employed to get as close to the learner experience as possible. The collaborative nature of learning has become a critical component of Canadian education but has yet to impact the college foreign language curriculum and its learning and teaching relationship.

In second language education, two epistemological positions are currently understood to be conducive to second language acquisition: task-based language learning and sociocultural theory. It is in the interaction, collaboration, co-construction of knowledge and reflection that learners acquire the skills and communicative competencies necessary to use the target language effectively. This action-oriented approach aligns with the learning and teaching principles of the CEFR which presents this vision of the learner as a "social agent" who is actively engaged with the social world and "exerts agency in the learning process." (CEFR, 2018, p. 26). In alignment with the view of the learner as actively engaging in the learning process to become more autonomous, this study focused on learner-learner interactions on a variety of tasks carried out through collaborative dialogues, in which learners built their Spanish language skills with the support of their peers and the instructor. In order to track strategic development during this process, learners reflected upon their experiences by responding to specific questions that were designed to stimulate metacognitive awareness.

An added cognitive challenge to the learners' language processing took the form of carrying out tasks in a multimodal environment, in both face-to-face and socio-digital contexts, for which the students had limited prior experience of using technology for the purposes of language processing and learning. Added to that challenge was the potential negative impact of anxiety that adult beginner language learners often experience. Therefore, an additional focus of the study was to provide the learners with the necessary preparation and support to acquire technological competency, and increase strategies awareness as a means of managing their own learning in an anxiety-reducing environment. Learner preparation and support in the preliminary stages of the study was an essential component of the procedure. Rapport established between learners and researcher in the classroom guided the willingness of the learners to actively engage in the tasks.

As the research sought to understand the reality of the learner experience, a qualitative approach was taken. The approach provided rich data on the learners' perceptions and experience expressed through their own words and actions within the learning contexts and from the direct observations made by the instructor. It was from those observations and perspectives that the research questions were formulated.

1.3 Research questions

The research questions were designed to gain an understanding of the strategic processes and experiences of adult beginner language learners engaged in a technology-enhanced classroom by using an Action Research approach to teaching for learning. The results produced outcomes that provide implications for enhancing the learner experience, thereby making the

language learning more effective. The exploratory nature of the study was guided by the following research questions:

1. What metacognitive strategies do adult beginner foreign language learners use in a technology-enhanced environment to complete learning tasks in Spanish?

2. How do learners apply instruction in metacognitive strategies to technology-enhanced learning tasks?

3. What are the effects of teaching metacognitive strategies on the beliefs, attitudes and level of confidence of beginner learners of Spanish as a foreign language?

4. What is the impact of the action research on strategic language teaching practices?

The questions were addressed through an analysis of data collected from questionnaires, audio transcripts of participants' interactions, post-task reflections, interviews, and the researcher's recorded observations of the actions of the beginner language learner participants during the collaborative tasks in each of three Action Research cycles.

1.4 Overview of the thesis

Chapter 1 introduces the study and explains the researcher's impetus for initiating the research. It also provides the background to the study, its focus and aims, and the guiding research questions. Language educator-researcher observations were that higher levels of anxiety and stress amongst first year college beginner learners of Spanish had the effect of reducing self-efficacy, which in turn negatively affected their progress in learning the language. These observations led to the development of the research study to identify the effects of the teaching and the students' use of metacognitive strategies on the effectiveness of their foreign language learning as adult beginners in TELL environments.

New learning materials such as language learning software and open educational resources (OERs) were used in order to be aligned with current established standards of second language learning and acquisition. The pedagogically sound integration of technology to facilitate and promote learners' language processing and development was an integral part of the research design.

Chapter 2 provides a detailed review of the literature relevant to the study which informed every aspect of its design, data collection instruments and data analysis. The four key components of this study and focus of the studies reviewed are first metacognition, secondly sociocultural theory and a social constructivist approaches to education, thirdly multimodal and technology-enhanced language learning, and fourthly classroom-based Action Research designed by the teacher-practitioner. Trends in research of the four key areas reveal gaps in our knowledge in those domains and need for a critical assessment of the relevant studies. The chapter concludes with a visual representation of the study's conceptual framework which has the learner experience at its core with layers of overlapping components of the research design and process.

Chapter 3 includes the research questions drawn from the research paradigm and approach, data collection instruments and data analysis procedures which informed the methodology. Figures and tables illustrate the procedure and link the data collection instruments and analysis to the research questions. Participant profiles based on information gathered in the pre-treatment questionnaire formed the basis for the design of the first cycles of the action research. The role of the teacher-practitioner as action-researcher and the role of the research participants as active knowledge contributors are defined, as they formed an integral part of the

methodology. In addition, unanticipated challenges to the research design and ethical considerations for the study are presented.

Chapter 4 provides a detailed description of the results. Numerous data collection instruments were utilized over four action research cycles, and the findings are presented for each of the action research cycles according to each data collection instrument. Figures and tables illustrate findings from the pre-treatment questionnaire, post-task reflections and post-treatment questionnaire. Both qualitative and quantitative results are reported with participant responses coded according to both *process* and *In vivo* coding protocols (Saldaña, 2013).

Chapter 5 discusses the results reported in chapter four, thereby extending previous research and knowledge gained through an interpretation of the findings. The discussion focuses on four main areas arising from the research questions: effects of metacognitive strategy instruction on the use of strategies by learners in the technology-enhanced language classroom, the role of learner beliefs and attitudes on self-efficacy, the development of learner autonomy, and the strategies that adult beginner foreign language learners use. In addition, the critical role played by the teacher-practitioner-action-researcher as both agent and facilitator of change, and the participants' contributions towards enhancing and advancing new learning together lead towards the development of a practice-based theory for adult beginner language learners.

Chapter 6 concludes the thesis with thoughts of the study's contribution to the contemporary body of knowledge regarding adult beginner foreign language learners. There are inherent limitations in this study. By nature action research is a small scale specialized exploratory study of an observed phenomenon. Therefore, results are limited to the specific context of the beginner language learning experience amongst first year college learners of

Spanish. Implications of this study are discussed suggesting changes to the first-year college foreign language syllabi and for the promotion of classroom-based practitioner research in multimodal learning environments. Directions for further research are proposed for future research and practice.

CHAPTER 2 LITERATURE REVIEW

2.1 Overview

Although providing somewhat contentious claims, several studies (e.g. Vandergrift & Tafaghodtari, 2010; Lam, 2009; Anderson, 2008; Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006; Pintrich, 2002, 2004; and O'Malley & Chamot, 1990) have in the past shown that learners who become more metacognitively aware, strategic and self-regulating in their learning tend to become more effective as language learners. Research is limited however in the domain of the role of metacognition among beginner second language learners in higher education who are accessing their learning resources in technology-enhanced contexts. Evidence has been limited to exploring the beginner foreign language learner experience along one specific perspective such as assessment, yet action learners take moment-to-moment to complete learning tasks in CALL environments is relatively under explored (Thompson, 2012). This chapter sets out the operational definitions of metacognition for the study, and a review of previous studies on metacognitive strategies instruction in multimodal environments revealing that our knowledge is still limited in the three skill areas of listening, reading and speaking. Learner beliefs and attitudes, and their effects on self-efficacy form an integral component of metacognitive awareness and therefore the research in these areas is reviewed in the metacognition section. In particular, studies of the negative impact of the affective filters of anxiety and stress, which reduce self-efficacy and levels of confidence demonstrate that more is yet to be understood about the influence of emotional factors on the language learning process amongst adult learners.

Computer-assisted language learning (CALL) provides the context and resources for the study through technology-enhanced language learning (TELL) tasks which follow concepts founded on sociocultural theory in language learning, social constructivist approaches to teaching and learning, and task-based language teaching (TBLT) and task-based language learning (TBLL). Studies in which these concepts have been applied are reviewed and demonstrate areas that still need to be addressed. With such emphasis on the engagement of the learner with others and within the TELL environment, a review of research on learner preparation and learner support further demonstrates that our knowledge is limited in the area of adult beginner language learners. Furthermore, research is limited on the impact of the practitioner-teacher in the classroom in preparing and supporting learners at this level.

Classroom-based action research (CBAR) is teacher-designed and managed (Convery, 2014, p. 104). Models and methodology of an Action Research (AR) approach relevant to a language learning context were considered by the researcher to provide the appropriate paradigm. The historical foundations of AR are included to support the argument for its use as a valuable, evolving and credible research approach. Further, a review of ideas expressed on the critical role played by the Teacher-Practitioner-Action-Researcher (TPAR) as an agent for change, generator of new knowledge and developer of practice-based theory framed the actions of the researcher in this study.

As stated in the overview, four key components impact language learning that remain less than clearly demonstrated: metacognition, sociocultural theory and a social constructivist approach, multimodal and computer-assisted language learning, and classroom-based Action

Research designed by the teacher-practitioner. Previous studies in each of these areas are critically assessed here.

2.2 Metacognition

It is generally claimed that learners who become metacognitively aware and act upon that awareness through self-regulating strategies tend to learn better (Pintrich, 2002, 2004 and O'Malley & Chamot, 1990). Studies on language learner development have shown that learning strategies can be employed to aid the learning process (Chamot, 2008; Griffiths, 2008; Wenden, 1999, 2002; Oxford, 1997; and O'Malley & Chamot, 1990). Furthermore, studies incorporating metacognition and language learning have demonstrated the positive effects of metacognitive strategies instruction on second language acquisition (SLA) (Vandergrift & Tafaghodtari, 2010); Lam, 2009; Anderson, 2008; Vandergrift, Goh, Mareschal & Tafaghodtari, 2006; and Allen, 2003). Utilising computer-assisted language learning (CALL) practices, learners who employ strategies to regulate their own learning become more autonomous and are more effective learners according to Figura & Jarvis (2007); Reinders & Lázaro (2007) and Thomas & Reinders (2010). Therefore, technology-enhanced approaches to learning may also be appropriate for adult early foreign language learners by acquiring strategies to manage their learning and thereby enhance their language processing abilities.

2.2.1 Operational definitions. The following operational definitions of metacognitive aspects of adult and higher education language learning are based on research from Anderson (2008); Wenden (1999, 2002) and Flavell (1979).

Metacognition is defined as "knowledge about cognition" which results in "cognitive monitoring and regulation" (Flavell, 1979, p. 907), or put another way, as the "ability to reflect on what is known" (Anderson, 2008, p. 99). Metacognition results in "critical but healthy reflection and evaluation of thinking that may result in making specific changes in how the learning is managed and the strategies chosen for this purpose" (Anderson, 2008, p. 99)

Metacognitive awareness is a state of mindfulness that allows the learner to reflect upon his/her learning and make decisions about what steps to take to help the learning process.

Metacognitive knowledge is the knowledge learners have about themselves as learners and how they manage their learning (Wenden, 1999, 2002). According to Flavell, it is the "knowledge or beliefs about what factors or variables act and interact to affect the course and outcome of cognitive enterprises" (1979, p. 907).

Metacognitive strategies are both the actions and skills that competent learners use to help themselves become more successful in their learning and gain autonomy as learners. The actions are *preparing* and *planning* for learning, *selecting* and using strategies, *monitoring* learning, *orchestrating,* and *evaluating* the learning (Anderson, 2008). In turn, these actions provide learners with the skills to manage, direct, regulate and guide their learning (Wenden, 1999, 2002).

As learners develop metacognitive awareness they become knowledgeable about themselves as learners and can take action to plan, select, monitor, orchestrate and evaluate the metacognitive strategies they employ to help their learning. Therefore, it is through that five stage interactive process that learners achieve their learning objectives (Anderson, 2008).

The self-regulating model presented by Oxford (2011, 2017) states that metacognitive strategies are one part of the categorization of "metastrategies" that perform "executive functions" (2017, pp.233-234) and which are separated into cognitive, social and affective aspects. Furthermore, she argues that the term "metacognitive knowledge" is too restrictive and should be replaced with the term "metaknowledge" (p. 234) which includes the social, affective and motivational domains. In fact, when assisting learners to develop the metacognitive strategies they need for processing language and building confidence, all domains may be engaged. Cohen (2014) states that the cognitive and metacognitive are so closely interacting in a given context that "metacognitive planning goes on at one split second and the cognitive strategy of the searching for the appropriate term the next" (p. 25). That means that as metacognitive skills may develop, cognitive processes and general learning strategies will play a role in that development. As Dörnyei & Ryan (2015) acknowledge that showing learners how to enhance their learning through learning strategies training may be beneficial for the learner. That said, the success of metacognitive strategies instruction will depend on the contextual and internal capacity of the learner for change (Dörnyei & Ryan, 2015).

2.2.2 Metacognitive strategies instruction. There is limited evidence of the effects of metacognitive instruction in multimodal syllabi at the beginner foreign language study college level (Andrés-Martínez, 2012). There is however substantial research on language learning strategies in material-based classrooms and online language learning environments at the intermediate and advanced levels of foreign language study (Thompson, 2012; Gao & Zhang, 2011; Yanguas, 2010 and Blanco, Pino & Rodriguez, 2010). Less is known about strategic learning

or the impact of strategic instruction among beginner learners of a foreign language who access learning activities electronically (Scida & Saury, 2006).

At the same time, there is significant evidence-based support for explicit instruction in the use of metacognitive strategies and these studies are critically examined in the following section in this chapter (; McNeil, 2016; Bacon & MacKinnon, 2014; Tormey, 2014; Cross, 2009, 2011, 2014; Dabarera, Renandya & Zhang, 2014; Siegel, 2013; Alm, 2013; Thompson, 2012; Chamot, 2005; 2010; Graham, 2006 and Nakatani, 2005).

Metacognition has been claimed to be the single characteristic key to success in online learning. Bacon and McKinnon (2014) developed a flexible framework for metacognitive modelling and development and argued against the assumption that in higher education, metacognition develops naturally and emerges over time so that students generally become metacognitive learners on their own. They pointed out that metacognitive skills-training benefits and supports learners to become more autonomous as their metacognitive development increases. This position correlates to the studies listed above in which some form of metacognitive awareness-raising or training was included in the learners' experience and led to increased benefit in their language learning development. Such a position supports the argument for strategies-instruction with specific focus on the learner experience designed to contribute to their agency in their language learning development. Ultimately, metacognitively aware learners are guided by personally-set goals and task-related strategies, and they monitor their behaviour and self-reflect on their effectiveness (Zimmerman, 2002).

Explicit attention to metacognitive self-monitoring strategies among college students in an intermediate level Spanish language course have demonstrated that study strategies and

performance monitoring can help language learners strengthen their metacognitive skills. In college language courses "small-scale metacognitive interventions" to further student learning were shown to both aid student learning and to be beneficial in conducting classroom-based research (Thompson, 2012, pp.447-448). Yet, Thompson's study was designed to assess and improve exam performance only and did not examine the effects, if any, that metacognitive strategy training had on the language processing actions of his participants. Using small scale interventions is beneficial when conducting classroom-based research as it is within those small-scale interventions that the macroskills can be developed.

Metacognitive strategy instruction has been employed in podcasts for developing listening skills. The metacognitive instruction was embedded in the listening lessons and connected to the material as follows: "initial suggestions on text usage formed the basis of, and were elaborated into, a form of pedagogical cycle, an integrated experiential activity for metacognitive instruction involving a structured task sequence of predicting, monitoring, problem identification, and evaluating" (Cross, 2014, p. 16). The student kept a journal recording her strategies and reflections on her development of listening skills, and in this single case study, Cross gave extended instruction to the learner through weekly interviews over a nine week period to ensure that the metacognition was consistent and recurring. In an earlier small-scale study, Cross (2011) demonstrated that metacognitive instruction helped less-skilled listeners in an advanced level EFL class. In each case, findings demonstrated that by making metacognitive instruction part of the pedagogical cycle a learner was able to become more strategic and autonomous in a process integrated with the language learning. However, Cross's studies were

not conducted with early stage adult foreign language learners, therefore it is not known if the process has the same effects at the beginner level.

In learning through listening, Vandergrift et al. (2006) developed a self-assessment instrument of listening, which measured learners' metacognitive awareness and applicabilty both to computer-mediated and material contexts. They claimed that "listening tasks that guide students through the process of listening , by engaging them in the use of prediction, monitoring, evaluation and problem-solving can help learners develop the metacognitive knowledge critical to the development of self-regulated listening" (p. 437). Their research confirmed a meaningful relationship between metacognition and listening comprehension success. By drawing the learners' attention to their actions during the process of completing a listening task and reflecting upon it, they became more autonomous. That is, the learners were active agents and knowledge builders in their own language development and they contributed to the researcher's understanding of learner behaviour in specific environments. What was not addressed by Cross (2011) or Vandergrift et al. (2006) was the ongoing role played by the practitioner researcher in the development of the learners' metacognitive skills. Therefore, it is not known which factors may have been at play in the learners' development of metacognitive awareness. If learners are reflecting upon their learning in each of these studies, one might ask, with that knowledge about the learner, what steps are then taken to address any issues, concerns or gaps in the instruction before the next task is evaluated. Therefore, the practitioner-researcher conducting research over time in the language classroom does have the opportunity to observe, reflect, evaluate and take actions that provide added benefit to the learner, an area of research yet to be fully explored for the early stage language learner.

In other areas of skill development such as in reading, a positive relationship with statistically significant gains in reading comprehension and metacognitive strategy instruction have been found in studies such as by Dabarera et al (2014). As Chamot (2005) pointed out when referring to O'Malley and Chamot's (1990) study, explicit learning strategy instruction appeared to be effective when embedded within the language syllabus to form part of its learning outcomes.

In some cases, learner metacognition has affected learning outcomes. Zhang (2008, p. 102) showed in a study of second language readers in university degree studies that over 98% of the participant Chinese learners of English were willing to learn more about strategies so that they could read better. The experimental group who received the training improved their reading performance. Zhang concluded that strategy-based reading instruction helped change the experimental group's perceived reading behaviour, as well as improving their reading comprehension. In this case, the development of metacognitive strategies was related to learner beliefs which are understood to determine the value of applying strategies instruction. In other words, if a learner believes that the strategies will have a positive effect on their ability to achieve the learning objectives, they are more likely to engage in using them. The study was not conducted with early language learners nor is it known what created the motivation to engage or what role the teacher-practitioner played in creating the willingness to engage.

In each of the previous studies on the relationship between learners, metacognition instruction and skill areas of reading and listening, indications were that metacognitively aware learners were more successful in the development of those language skills. Listening and reading are two of the macro skills identified in second language acquisition, and they are necessary and

foundational for the development of the oral skills. In terms of the development of metacognitive awareness, acquiring a repertoire of strategic actions to support their communication and interactions in a meaningful manner also becomes an integral part of the learner's ability to acquire the target language.

Studies on oral skills testing have found that students who received metacognitive strategy training significantly improved their oral test scores as compared to students who did not have any training (Nakatani, 2005). In a later study focused on communication strategies and not metacognition, Nakatani (2010) found that learners with higher proficiencies showed clear awareness of using strategies thereby providing further evidence of metacognition as a foundation for autonomous learning. Not evident in either study was if the learners had received any previous training at the early stages of their language development. By focusing on the outcome of test scores of the learners and learner self-reports only, it is not known what precise language processing actions learners took to successfully complete their tasks.

One study which examined the effects of metacognitive strategy instruction (MSI) for oral language development in ESL discussion groups found that MSI had a positive impact on the oral language ability of the treatment group of 20 high school students who received explicit language instruction (Lam, 2009). Included in her study were three social-affective strategies, namely, asking for help, giving help and positive self-talk. Lam's study followed Macaro's rationale (2006) for adding social and affective strategies into the realm of metacognitive strategies. That is, one cannot isolate metacognition from the emotions, beliefs, social behaviours and contexts of the learners. In that sense, it may indicate that a more holistic approach that encompasses the whole

learner experience leads to greater depth of understanding and knowledge, for both the learner and the practitioner.

Contrary to the strategy-training argument is the assertion that metacognitive strategy use occurs naturally and simply by providing learners with the necessary meditational tools and opportunities to develop strategies themselves through socially interactive and self-reflective activities (Huang, 2010). The intermediate level language learners in Huang's study were likely previously to have built an established repertoire of learning strategies and skills in language processing that the adult beginner learner does not necessarily possess. In her small-scale study to raise L2 learners' awareness of speaking strategies, Huang noted how different types of reflective practice enabled learners to develop metacognitive awareness. Studies have not yet shown the success of an approach for beginner learners such as embedding questions throughout the syllabus to see how students respond, followed by monitoring of the responses by the practitioner so that subsequent actions may be taken to enhance the level of metacognitive awareness leading to more strategic choices by the early learners.

A review of Spanish language teaching research studies between 2000 and 2008 conducted in online environments did not yield any analyses of the use or effects of metacognitive strategic instruction in multimodal environments for beginner learners (Anton, 2010). In fact, there is limited research on the use of metacognitive strategies instruction among beginner learners of Spanish found in the traditional –face-to-face classroom other than one specific strategy awareness-raising programme (Blanco, Pino, & Rodriguez, 2010). The knowledge gaps in this area indicate the need to study the effects of metacognitive strategy

instruction and use amongst beginner learners who use digital, textual, aural, visual and social resources to complete tasks.

Metacognition in technology-mediated environments with dedicated software has had the effect of enabling students to analyze their learning needs and goals, to keep a record of their learning and to reflect on their ongoing learning process (Reinders & Lázaro, 2007). In that study, technology enabled students to develop their metacognitive knowledge and awareness as they learned. Factors that have an impact on the effectiveness of technology use in synchronous computer-mediated communication (SCMC) include task design and the types of strategies that learners employ to complete them (Ko, 2012).

The positive effects of person-to-person metacognitive strategy instruction leading to autonomous learning behaviours in face-to-face and intermediate to advanced level language learning contexts have been outlined. Questions yet remain regarding the role of metacognitive strategies instruction or learners' use of strategies at the beginner level in multimodal foreign language learning environments. It is important therefore to acknowledge that metacognitive awareness-raising training requires pedagogically sound tools.

2.2.3 Pedagogical tools. Teachers must be aware of how to create the learning situation for optimal development of language skills for the early learner. The metacognitively-aware teacher is able to teach the strategies that will aid in that development and improve the learning experience of her developing metacognitively-aware language learners. (Anderson, 2008, p. 105). Initiating awareness-raising activities using a variety of pedagogical tools to gain insight into the learner's perceptions and understanding of their language development can provide valuable information for the teacher to inform subsequent teaching interventions.

Metacognitive reflection questions and responses have been embedded in tasks in various ways by researchers, for example in technology-mediated environments, by the use of learner journals, electronic or written reflections on different learning tasks completed using metacognitive prompts from the teacher. Surveys or questionnaires have been used to raise metacognitive awareness, for example the Metacognitive Awareness Listening Questionnaire (MALQ) developed by Vandergrift et al. (2006). Learner self-evaluation videos have been used as a tool to evaluate progress and growth in language development. Think-aloud protocols are useful to understand the mental processes that learners engage in while undertaking a task and these can be recorded as learners articulate their thinking and help each other in the language-learning task (Anderson 2008, p. 106). In-class discussion of learning strategies prior to tasks and group sharing of strategies add support for learners who may need help in initiating the process of awareness-raising, reflection and strategy use.

Dörnyei (2005, 2009) pointed out the link between learner beliefs and strategy use whereby learners decided which strategies to use based on how meaningful they were to them. Therefore, it is essential in the field to gain some understanding of learners' beliefs and knowledge before a teacher initiates actions so that the necessary preparation and support can be provided prior to the challenge.

2.2.4 Learner beliefs and self-efficacy. There is an accepted position that each learner brings his/her beliefs, attitudes and knowledge to any learning context and that the instructor's pedagogical approach facilitates the learner's development. A strong association between self-efficacy and student learning outcomes in higher Education revealed from a meta-analysis of 241 recently published Studies, that self-efficacy was the strongest correlate with university GPA

(Bartimote-Aufflick, Bridgeman, Walker, Sharma & Smith, 2016, p. 1924). Their review pointed to three key messages on the valuable role of the variables of metacognition, self-regulation, motivation and strategy use as "vehicles" for improving, evaluating and studying self-efficacy:

> "(A) self-efficacy is strongly associated with student achievement, as well as self-regulation, motivation and strategy use (B) teachers can intervene to raise student self-efficacy, and (C) the evaluation and study of self-efficacy in university settings can be improved by increased attention to theory as well as design and analysis issues" (Bartimote-Aufflick et al., 2016, p. 1922). Under (A) above, metacognition was also found to be "highly correlated with self-efficacy across multiple studies in the review set" (Bartimote-Aufflick et al, 2016, p. 1923).

The findings under key message (B) indicated "reasonable evidence" (Bartimote-Aufflick et al.,2016, p. 1930) of university students improving their self-efficacy over a period of time, most notably by participating in a particular type of learning activity or by completing a course. Therefore, the pedagogical features of an intervention such as metacognitive strategies instruction that is intended to increase learner belief and self-efficacy to build learner autonomy must be guided by models of task design that provide optimal learning potential. While Bartimote-Aufflick et al. (2016) analysed numerous studies across many disciplines, there were no studies of self-efficacy and achievement in language learning included in their review. Indeed, there is limited research on learner beliefs and self-efficacy in language learning at the tertiary level, particularly for early foreign language learners.

Zhang's (2008) study of a group of university ESL students in Singapore found that the learners believed that metacognitive strategies instruction would help improve their reading

comprehension and so they engaged in the process with beneficial results. That is, the learners believed that they become better learners becoming more metacognitively strategic. Learners' beliefs about foreign language learning have implications for classroom instruction and interaction with and between learners and positive correlations have been cited between self-efficacy beliefs and the range of strategies used by learners (Graham, 2006).

Self-efficacy is defined as a learner's judgement about his/her capability to accomplish a task successfully (Bandura 1977, 1982, 2006). A learner's self-efficacy has a direct link to the effectiveness of the metacognitive strategies they use and their ability to complete assigned language tasks. The quality of the self-regulating skills that students employ depends in part on several underlying beliefs the students hold about themselves (Pajares, 2002). Furthermore, learner beliefs develop and change through interactions within learning contexts such as both face-to-face and electronic observation of individual learners while they carry out language learning tasks (Navarro & Thornton, 2011). As learners gain confidence and feel more comfortable in the learning context, they feel less anxiety which allows them to focus more on their own learning. On the other hand, the close relationship between beliefs and emotions such as anxiety, frustration and low self-efficacy in the foreign language experience may result in learners believing themselves to be inferior to idealized language models and viewing the classroom as a judgemental environment (Aragão, 2011). To address the negative affective factors that may be at play with adult beginner language learners, Dörnyei (2005, 2009) claims it is important to create a learning context which is open and free of judgement. In such an environment, learners have an opportunity to build up their self-efficacy and actively apply metacognitive strategies for their learning to be more effective.

That said, even after creating nurturing learning contexts to build language skills using process-oriented approaches, individual learner psychology still plays a role in the level of skill development and confidence personal language ability. To what extent the individual learner variables may affect the development of self-efficacy amongst beginner language learners has not yet been fully explored. Even with increased ability, increased self-efficacy cannot simply be assumed (Siegel, 2013). Therefore, it is only through further study and evidence-based results that knowledge may be expanded on these variables.

Asynchronous computer voice conferencing has been shown to have an influence on reducing learners' anxiety when speaking in a second language. One such study demonstrated that without the time pressure of the classroom, asynchronous CALL slowed the pace of the interactions, which thereby helped learners feel more comfortable and greatly reduced the levels of anxiety the learners experienced in the classroom setting (Poza, 2011). As Poza found in the study on college age learners of intermediate Spanish, reducing the anxiety in the classroom through careful task design and a supportive learning environment for the learners had beneficial effects and allowed learners to feel more open to strategies so that they felt empowered to control their own learning.

2.2.5 Self-regulation and learner autonomy. Conceptually and pedagogically, metacognition in language education and task-based language teaching in multimodal learning environments are foundational to the development of learner autonomy. Autonomous learner characteristics include taking charge of their own learning (Holec, 1981), developing a capacity for critical reflection (Little, 1991), independently directing, monitoring and evaluating their own learning, using the target language, and practising regular self-assessment by reflection on the

process of learning (Little, 2007). These learner characteristics also define the metacognitive awareness, knowledge, strategies and strategic action that the metacognitively aware learner displays as defined operationally and reviewed earlier in this chapter. That is, the review indicated that important aspects of the metacognitive awareness-raising process are the critical reflection on one's own performance, planning and preparing for learning, and monitoring of language development, all of which are also key components in the development of self-regulation and learner autonomy as defined by Holec and Little above.

While Collentine's (2009) study on synchronous CMC did not focus on self-regulation, her research indicated that it does play an important role in multimodal learning. In their study on an undergraduate course in learner autonomy which was to promote the use of CALL in EFL using a multimodal model with explicit face-to-face metacognitive strategy instruction and using a self-access centre, Smith and Craig (2013) found that the technology benefitted learners in developing self-management skills. In higher education, Bartimote-Aufflick et al (2016) found that several of the teacher-researcher interventions for developing self-efficacy allowed for ways of learning with technology that could not be achieved via independent learning, reading or in the face-to-face classroom tasks. Furthermore, they suggested that a useful guide for optimal student learning and promotion of self-efficacy may be found in the self-regulation learning model proposed by Pintrich (2002, 2004) and Zimmerman (2002) as reviewed earlier in this chapter related to metacognition. Within that self-regulating model for learning lies a social constructivist pedagogical approach, reviewed later in this chapter, which by definition provides opportunities for interacting, collaborating and scaffolding through tasks in which learners engage with one another to build their knowledge and capacity under the facilitation, monitoring

and guidance of the teacher. In this way, the optimal learning environment for developing self-management skills and self-efficacy follows an established model previously proposed and tested by Pintrich and Zimmerman, and which Bartimote-Aufflick et al (2016) found to benefit teacher-researcher interventions in both technology-mediated environments and in face-to-face tasks. What has not yet been tested in this model is its impact upon early stage foreign language learners at the college level.

With the advance of technology-mediated language learning environments, there is a shift in the emphasis from individual learner to connected learner (Crabbe, Elgort, & Gu, 2013). The socially mediated learning opportunities that are afforded by digital technologies imply a new role for the learner to manage. Crabbe, Elgort and Gu (2013) claimed that taking charge of one's learning in rapidly changing learning environments requires an increased ability for learners to "manage personal motivation, identify and set goals, create realistic expectations and assess progress" (p. 194). In other words, students require metacognitive foundations for autonomous learning to occur.

Lewis (2013) argued for a more complex view of learner autonomy, based on the idea that new social contexts involve a much wider range of competencies beyond the solitary learner pursuing purely personal learning goals (p. 198). In synchronous or asynchronous interactions, prosocial behaviours are expected in collective learning environments, whether in person-to-person classrooms or online learning environments. In view of the multimodality of language learning contexts today, the argument for viewing learning autonomy as a set of prosocial behaviours in addition to self-management has validity. Yet in the beginner foreign language learning setting for adult learners, there is limited evidence to date to support this view.

2.3 Technology-enhanced language learning classrooms

Today it is widely acknowledged that learning technologies have become an integral part of language learning education, and their impact is significant in the field of CALL/TELL research and pedagogical directions (González-Lloret & Ortega, 2014; Steel & Levy, 2013; Thomas, Reinders & Warschauer, 2013). While technology can be a valuable tool in today's language learning environments, it can also be challenging. As Laurillard (2008) has noted, most technological tools were not created for learning: the IPOD was developed as an optimal solution for people who wanted to listen to music, not for people wanting to learn. If the technology-supported pedagogy is not informed by an understanding of theory, research and practice from SLA, then the language learning process will not necessarily be activated. Furthermore, Laurillard (2008) explains that the best use of learning technology begins with an understanding of the educational problem and the use of analysis to target solutions that educators require from technology. The use of technology for learning and for the achievement of better learning outcomes requires the practitioner carefully to construct a learning environment that is conducive to an enhanced learning experience for the learner.

While today's language learner may be more technologically competent in almost every aspect of daily life, students are not necessarily competent in learning, or employing strategies to aid learning in technology-mediated language learning environments (Hubbard, 2013). In the second language classroom, multiple modes of delivery and action may include person-to-person, mobile-assisted learning and the collaborative use of learning technologies in a variety of TELL environments. In these multimodal contexts, language learners have to acquire not only language skills but also an awareness and ability to employ a variety of tools to further their own

learning and develop their digital literacy (Son, Park, & Park, 2017; Blake, 2016; Hubbard, 2013). Digital literacy is defined here as "the ability to use digital technologies at an adequate level for creation, communication, collaboration, and information search and evaluation in a digital society. It involves the development of knowledge and skills for using digital devices and tools for specific purposes" (Son, 2015, para. 1). Son's definition may act as a guide not only for determining what tools will be beneficial for the language learner but also how one may increase the technological competency of early language learners by focusing on specific outcomes in specific contexts. Such an approach can be carried out with attention to evaluating the CALL materials following Jamieson and Chapelle's 2010 criteria for CALL evaluation which emphasize the "language learning potential, meaning focus, learner fit, authenticity, positive impact and practicality" (p. 358). In the context of the foreign language learning classroom in higher education, the interweaving of learning and technology then becomes both reflective of the learner experience in the real world and effective for language learning strategies and digital language learning development.

In a broader educational context, earlier studies in technology use in higher education institutions across the United Kingdom found that an "overwhelming feature" was that technologies "appeared to be integral to learning for all the students, irrespective of their background, prior IT expertise, learning preferences or subject discipline studies"(Conole 2008, p. 126). Furthermore, the learning was found to be more "task-oriented and experiential". Conole's statements concur with Laurillard's (2008) "conversational framework" (pp.141-142) for supporting the learning process which focuses on the learner in the act of learning and operates

through both discursive and experiential levels. More recently, Webster and Son (2015, p.92) noted in their study of technology-use by teachers of English in higher education in Korea, that as "teaching and learning are future-oriented endeavors" , it seems "imperative" "to re-examine the relationship of technology to education". They found that the teacher background, beliefs, and classroom practices were not centered on what worked best, given the learner's experience with technology or even followed the teachers' own understanding of ways of learning in the "real, technology-laden world" (p. 92). Through their case study, Webster and Son (2015) demonstrated that even while teachers may have the training and education in employing technology and innovations to engage language learners to develop language and digital literacy skills, they continue to struggle to integrate technology into classroom practice. As Chun, Smith and Kern (2016) pointed out, teachers must pay attention to technology because today it shapes how people use language in particular instances in "interaction with a range of factors" (p. 65). Furthermore, factors outside of the learner experience and abilities may limit the task design and level of engagement, thereby limiting the learning process and the preparation of the learner for engagement with the real world today and for tomorrow. In the preceding studies discussed, the learner is at the centre of the task design and their interactions, collaborations, experimentations while reflection guides the learning process and experience. The implications for the multimodal classroom of today are that learning spaces need to become nurturing contexts in which to "capture the heart of the learner voices" (Conole, 2008, p. 126) for understanding and enhancing learning experiences so that the learner develops the skills necessary for real world applications.

2.3.1 Sociocultural theoretical framework and CALL. From a sociocultural theoretical perspective emphasizing the social nature of language learning through learner interactions in collaborative contexts, affordances become available for making meaning and promoting SLA. Such an approach using multimodal resources and contexts provides a rich environment for social interactions and collaborative tasks to take place.

Decisions that the language instructor makes about what technology to use, for what purpose, and in what way must be based on prior knowledge and understanding of the language learning benefit to the learner (Garrett, 2009). Research points to the importance of an interface between SLA theory and technology focused on how to optimize target language learning (Chapelle, 2007, 2009; Fischer, 2007), and how contemporary CALL benefits from more focus on "analysing the sociocultural context of learners and instruction involved in the process of language learning" (Thomas, Reinders, & Warschauer, 2013, p. 6)

In the CALL environment, interaction is integrated with a sociocultural approach in that the focus is on language development in a social context with learning activities centered on social interaction, collaboration and co-construction of knowledge through task-based activities guided by an understanding of the language learning process (Blake, 2013; Senior, 2010; Chapelle, 2007, 2009). As Lai and Li (2011) point out, a sociocultural approach offers "opportunities for scaffolding and collaborative dialogues which are the essence of learning" (p. 500). Furthermore, they suggest that technology-enhanced task-based language learning in a sociocultural context builds other essential skills such as collaboration skills, communication competency and digital literacy. Their claims are substantiated when one considers that the direction and contexts of postsecondary language education today indicates a growing emphasis

on preparing learners for real world experiences. It is therefore necessary to acknowledge the changing nature of the needs of language learners who have integrated technology into their daily lives.

Based on concepts introduced by Vygotsky, sociocultural theory is particularly important in learning and teaching languages. According to Swain, Kinnear and Steinman (2015), Vygotsky's zone of proximal development (ZPD) is the action, not the place, through which learners construct new language through socially mediated interactions, collaboration, private speech and the "interrelatedness of cognition and emotion" (p. xv). In the context of SLA, ZPD is the developmental process through which learners are able to communicate with the support of their peers, the teacher or others (Lantolf, 1994; Oxford, 1997). It is through this interaction that the process of internalizing or acquiring language is accomplished. What has not been shown by the study by Swain, et al. (2015) is how collaborative dialogue and private-speech not only increase metalinguistic awareness and language acquisition but also how the languaging that takes place contributes to increased metacognitive awareness. Languaging involves the use of L1 or L2 in a process of making meaning which leads to appropriate use of the target language in order to accomplish a communicative task. In other words, the management of the learning process is interwoven within the ZPD itself. The use of either L1 or L2 is at the centre of the theory of plurilingualism which allows for the flexibility of the learner to draw upon the resources in either language in this social action-oriented approach to language learning (Piccardo, 2017). Much of the computer-mediated communication (CMC) research necessarily falls into the domain of sociocultural learning. Several studies (for example Blake, 2013; Senior, 2010; Chapelle, 2007, 2009; and Fischer, 2007) demonstrate that interactive and collaborative

synchronous and asynchronous communicative tasks play an important role in language development. Yet, in the area of adult beginner language learners in the postsecondary context, the development of metacognitive awareness as part of the sociocultural process for constructing and building language skills has not been fully explored in CMC.

2.3.2 Social constructivist pedagogical approach. Closely linked to sociocultural theory as the framework for CALL is a pedagogical approach founded on the idea that learners are social beings who require language in order to communicate which they accomplish by actively co-constructing their knowledge. In higher education, a constructivist framework focuses not on meaning being imposed or transmitted by direct instruction, but by students' learning activities (Biggs, 1999). In this approach, the focus is on the learner taking action in an "acquisition rich" environment (Ellis, 1999, p. 211) while the teacher takes on the role of facilitator, guide, monitor and source of assistance for the target language.

This "learner-shaped pedagogy" (Hoven, 2006) in the CALL environment is carried out by considering first how activities and tasks facilitate learning, based on an understanding of learner needs and benefits for the language learning process (Golonka, Bowles, Frank, Richardson & Freynik, 2014; Egbert, Huff, McNeil, Preuss & Sellen, 2009; Garrett, 2009; and Hoven, 2006). The implications for the teacher with this changing role to facilitator is that she must have the knowledge and skills to use the technological resources effectively in order to increase the potential for success in the learners (Warschauer & Healey, 1998). In addition to the teacher possessing the knowledge and skills for working in CALL, it is important for the teacher to be cognizant of the learners' existing knowledge before designing multimodal tasks.

Wiebe and Kabata's (2010) study of learners in a Japanese language program examined the effects of educational technology on attitudes of both instructors and students. They found that there was a gap between learners' and teachers' understanding in using CALL materials. Their results indicated that "instructors do not always have a good understanding of their students' use of IT (instructional technology) nor do students necessarily understand their instructors' goal for using technology enhanced materials in their class" (p. 224). They also indicated that instructors were unable to determine what kind of online learning activities students were engaged in while logged on, and that, while instructors encouraged the use of online learning, they did not clearly state what the goals and pedagogical purposes were behind the assigned tasks.

Furthermore, there was no indication in the Wiebe and Kabata (2010) study that a pre-treatment assessment of beliefs, attitudes and technological competencies was conducted in order to determine a process that would address the needs and language learning goals of the learners. The limited interactions between instructors and students may have had a negative effect on student perceptions of the usefulness of CALL for language learning. Open and clear communication and interaction between the teacher and student has to be a priority. Clarity in the purpose and process for designing interactive tasks to be carried out in online language learning environments and clearly defined goals may lead to effective use of the technology (Garrett, 2009; Scida & Saury, 2006).

2.3.4 Tasks in TELL. Numerous studies conducted using task-based approaches in multimodal language learning environments (e.g., Cross, 2011, 2014; McNeil, 2014; Alm, 2013; Ko, 2012; Nissen & Tea, 2012; Poza, 2011; Collentine, 2009, 2010; Müller-Hartman, Schocker &

Ditfurth, 2010; and Scida & Saury, 2006) have demonstrated the importance of clarity and purpose in the task itself. Thomas and Reinders (2010) pointed to the "centrality" of CALL tasks in the process of language learning and teaching and the growing importance of task-based approaches in language education globally.

Defining "task" for the purposes of language learning provides a clear foundation upon which meaningful interactions may take place and purposeful tasks may be designed. To that end, one useful operational definition of "task" is offered by Van den Branden (2006) who defined task as "an *activity* in which a person *engages* in order to *obtain* an objective and which necessitates the *use* of language" (p. 4, italics added). In this succinct manner, Van den Branden identified action, engagement, purpose and communication as key elements for the language learning process in task-based language learning (TBLL) and task-based language teaching (TBLT). A further six criteria for a definition of "task" were established by Ellis (2003), providing the best guide from the CALL perspective and this researcher sees its value as a guide for the teacher designing tasks in multimodal environments:

1. *plan for learner activity*
2. *primary focus on making meaning*
3. *engage with real-world authentic language use*
4. *focus on any or all of the four language skills*
5. *engage learners in cognitive skills in order to accomplish them*
6. *have a defined communication-based learning outcome*

(Ellis 2003, pp.9-10)

TBLL promotes engagement of the learner as a social act. Its theoretical underpinnings can be found in the social constructivist model which combines output and interaction hypotheses with sociocultural theory. As stated earlier, at the core of the TBLL model is the fundamental idea that learners are social beings who require language for communication and

that this social communication occurs through interaction. Accordingly, tasks may be viewed as a pedagogical tool that will have different contexts of use (Samuda & Bygate, 2008). Ellis's criteria also follow these theoretical underpinnings with their focus on purposeful and meaningful interaction, real-world authentic language, to the development of language competencies through the use of cognitive skills in processing language to attain specific goals. In terms of the processing of language that occurs in task-based learning and teaching, learners follow a cycle of interaction, collaboration, co-construction and reflection, engaging socially in the activity, working with peers as they co-construct knowledge and reflect on what they have created through the process. Conceptually, this view of the learner as a "social agent" who engages with others through these interactive cycles of authentic language tasks is foundational to the guidelines set out in the CEFR (Council of Europe, 2001, 2008).

While an emphasis in studies was placed on the social interaction and collaborative nature of TBLL and TBLT in CMC which stimulates language development, Doughty and Long (2003) noted that establishing a supportive psycholinguistic environment is necessary to the implementation of synchronous computer-mediated communication (SCMC) tasks. The methodological principles established by Doughty and Long (2003) for stimulating L2 language development in SCMC guided the tasks in which learners were engaged as units of analysis which promoted "learning by doing" (p. 52). This action provided rich input for learners through negotiations of meaning, while at the same time respecting individual "learner syllabuses" (p. 52). Their study focused on optimal psycholinguistic environments in CALL, specifically in distance learning. They did not address issues of strategic learning or metacognitive processing as part of

that optimal environment. The extent to which the supportive psycholinguistic environment they promoted is relevant to early Spanish language learners at College has yet to be tested.

"Online pedagogy" is a concept Colpaert (2006) developed in which task design is pedagogy-driven by specific characteristics such as learning environments, contexts, situations, learner characteristics, and pedagogical goals. That concept concurs with interpretations by Conole (2008) and Laurillard (2008) of using technology for learning. Colpaert (2006, p. 494) emphasised that pedagogy-driven design procedures for online teaching are hypothetical in nature and should be validated in the real world such that "teachers should become designers" and contribute to CALL research "provided that they work in a research-based research-oriented approach". While he did not specifically address issues of strategies or awareness-raising, Colpaert recognised that using online learning materials suits a task-based approach in either collaborative or autonomous contexts. At the beginner level, while authentic real-world tasks may be used in a task-based approach, the interactions that relate to language-oriented communication should be mediated acknowledging that dedicated systems such as "language courseware can play a vital role in experiential, socio-constructivist, task-based and collaborative language learning" (Colpaert, 2006, p. 488). At the same time, he suggested that in non-dedicated systems such as *YouTube*, the internet and social media in CMC which are not designed for language learning, do not offer the guidance, feedback and tracking that a language courseware system offers. Yet, if the teacher has a level of digital literacy as well as depth of knowledge in language learning and teaching, she would be capable of designing tasks that promote the development of the language competency. As a result, both non-dedicated and dedicated systems may be effective for learner-fit and compatibility, depending upon the

learning objectives. While the structure of dedicated systems provides additional learner support or opportunities for further training than in less structured settings, the effects over time are not yet known amongst early stage adult foreign language learners engaged in multimodal learning environments.

If learners are to approach their learning in a deep manner, they must be engaged in discourse and collaborative tasks (Garrison & Vaughan, 2008). The characteristics defined by Colpaert form an educational framework designed for higher engagement leading to a deeper approach in learning, an approach which, as Biggs (1999) observed is necessary for conceptual change to take place rather than simply the acquisition of information. The functions of TBLL are based on communication, interaction and collaboration by definition and are central to setting the learning outcomes for adult beginner foreign language learners, an area that has not yet been fully explored in terms of TBLL and TBLT in multimodal learning environments. One must emphasize the importance of task type on task performance (Collentine 2010), and the need for an understanding of task-based approaches before designing courses in e-learning contexts (Nissen & Tea, 2012). In addition, there is a need for a better understanding of how all the factors of learners, situations, and contexts influence task-based language teaching in CMC, and how those factors operate in real pedagogical contexts (Müller-Hartman et al, 2010). In terms of CALL research into what learners actually do, Levy (2015) reminds us that research is limited in this area. It is necessary as "it is in the unpacking of what students actually do moment by moment in CALL tasks and activities that best illustrate the strengths of qualitative methods in enhancing our understanding of mediated learning and thereby driving productive research agendas"(p. 554). Levy acknowledged that further learner-centered qualitative research was necessary and

relevant to expand and enhance our understanding of learners in technology mediated learning environments.

Whereas Gass, Mackey and Ross-Feldman (2011) found that the quality of the interaction may not be context-dependent but more task-dependent, the role of choice and design of task type may have a more positive effect in supporting SLA than the interaction alone. They examined the impact of setting, classroom and laboratory, on the interactions of learners of Spanish as a foreign language in third semester university courses. While they were able to raise awareness on the effects of setting on the interactional processes through a variety of tasks performed in both the classroom and laboratory setting, they had not considered other factors such as classroom contexts in terms of participants and their social relationships. Nor did they focus on aspects of group dynamics such as "who initiates interactional modifications" (p. 210). Since managing the learning was not part of the focus of the Gass, et al. (2011) study, there is no information on how the interaction processing was directed. What is missing from their study is evidence of the "moment by moment" learner actions to which Levy (2015) referred, as well as the actions, observations and reflections of the researcher including the decisions made by the researcher and participants to modify tasks for optimal interactions.

There are many challenges in working in online environments and addressing the need to select contexts and tasks that promote SLA. In a study on synchronous voice-based computer-mediated communication (SVCMC), Bueno-Alastuey (2013) found that the effect of dyads along with the effective integration of voice-based technologies can improve communicative competence. That study found that the kind of partner significantly affected the quantity and type of language related episodes (LRE) which occurred. While Bueno-Alastuey demonstrated

that SVCMC is beneficial for SLA because of the high quantity of interactional feedback, the study did not show how or if learners employed metacognitive strategies to manage that language development. Her findings on the influence of group dynamics are a relevant and important consideration for any research conducted in the context of collaborative tasks. Further to this challenge, another study found that the biggest drawback to successful completion of the tasks for lower and upper intermediate Spanish learners of English were the technical glitches of delayed connection time and sound problems (Bueno-Alastuey, 2011). The influence of technological challenges on the interactions and language development of the learners was found to be a significant factor yet evidence was not presented on whether these obstacles were overcome or rectified to provide more opportunities for the learners to achieve successful interactions. Therefore, it was not yet known what effects over a period of time occur if steps are taken throughout a study to develop optimal learning contexts.

2.3.5 Learner preparation. While learners may be technologically competent in using electronic devices in their everyday life, they do not automatically transfer that knowledge into language learning focused tasks in online environments. Researchers (Heiser, Stickler & Furnborough, 2013; Hubbard, 2013; Lai & Morrison, 2013) called for learner training to play a more prominent role in CALL research as evidence was lacking with respect to learner needs and learner proficiencies, yet to date there has been limited research at the postsecondary level for beginner foreign language learners. If studies on learners' abilities in language development in technology-enhanced learning environments are to provide credible and trustworthy evidence, then optimal learning contexts for that development to occur would include teacher competency, as well as training for the learner in using learning technologies.

One study carried out by Tanaka-Ellis (2010) with Australian secondary school learners of Japanese performing two collaborative CALL tasks demonstrated the need for teacher and learner training. Tanaka-Ellis reported limited learner success due to lack of explicitness and frequency in task instructions, limited technical skills of the learners and lack of teacher motivation and expertise in CALL. Therefore, the study did not meet expectations with the learner web tasks mainly incomplete. Tanaka-Ellis cited task attributes, learner attributes and teacher attributes as contributing to a problem of assumed autonomy of the learners. In addition, the tasks were an add-on component, not included in the assessment of the subject. Yet, she did not first use a questionnaire to find out how learners felt and what they knew at the beginning of the study. A questionnaire tool could have provided the researcher information to prepare the learners for working in online environments and training in the types of tasks that formed part of the study.

Lai and Morrison's (2013) study on the need to develop an agenda for learner preparation in technology-enhanced language learning environments indicated that learners needed certain skills, strategies and attitudes for effective use of technology. Fostering the prerequisite knowledge skills and attitudes was considered a crucial component of any TELL environment. In addition, Fischer (2012) as cited in Hubbard (2013) argued that the challenge in learner training "entails not only guiding learners to make good pedagogical decisions to facilitate their learning, but also instructing them how to use technological resources in support of those pedagogical decisions" (p. 28). In order to prepare learners, teachers need to recognize, validate and verify students' current uses of technology, as well as find out perceived levels of confidence in using technological tools that are part of the learning program so that they can provide additional

scaffolding and training as needed (Hubbard, 2013). To accomplish this level of learner preparation, the teacher must also possess the knowledge and skills necessary to offer such support and training. That is, "technology itself is not the agent of change", but teachers are (Kirkwood & Price, 2013, p. 336). What the research has not shown however are actions the teacher takes, through interactions with the learner, to monitor, evaluate and reflect upon the development of the learners' technological competency in a pedagogically sound way to promote language learning. As researchers such as Baralt and Morcillo Gómez (2017), Compton (2009), Hubbard (2013) pointed out, in many cases, the increased uses of online language learning have not been matched by an increase in language teacher training in TBLL in TELL beyond technical and software specific skills. In some cases, the decisions the teacher makes do not depend on the training she has received, but rather on her background, classroom practices and beliefs about TELL (Webster & Son, 2015). Those decisions will have an impact on the level of learner preparation and support the teacher provides.

2.3.6 Learner support. Ongoing support for the learner functions to establish a relationship between their understanding of the CALL tasks and the learning objectives communicated to them by the instructor. One of the issues in Wiebe and Kabata's (2010) study on the gap between learners' and teachers' understandings of the use of CALL materials was the lack of regular reminders to the learners of the goals and pedagogical purpose behind the tasks in CALL. Studies by Reinders & Hubbard (2013) and Chenoweth, Ushioda & Murday (2006) showed the need for instructor guidance and ongoing support in order to promote learner success in the CALL environment. In the contexts of in-class time and online, such guidance provided beneficial results.

Reinders and Hubbard (2013) endorsed the position that almost all existing studies demonstrated the need for extensive preparation, ongoing guidance, and follow-up support so that learners were able to make full use of the resources. In addition, they called for the need for learner training in raising metacognitive awareness to develop the skills necessary to manage and direct learning in CALL environments. While preparation, guidance and support contribute to enriching the learner experience in CALL, the learning objective is to develop the metacognitive skills, knowledge and strategies that allow the learner to become self-regulating and autonomous.

Emphasis has been placed on the need to view the language learner as an active agent who co-constructs knowledge through social interaction with peers, teachers and others (CEFR, 2001; CEFR Companion Volume, 2018). Previous research (Hubbard, 2013; Reinders & Hubbard, 2013; Lai & Morrison, 2013 and Compton, 2009) demonstrates that learner support and the learner's perceived experience of support in online environments benefit the effectiveness of his/her language learning development. Kehrwald (2007) emphasized the importance of creating an environment which is safe, fosters feelings of trust, and promotes interpersonal interaction. He demonstrated that a nurturing environment allows learners both to support others and to ask for support from others. In the online environment, he maintained that peer support and access to instructor support play an essential role in facilitating online learning. Kehrwald's use of web-based resources provided additional support in the access to tools which allowed learners to access "content experts" outside of the course itself. He found that as learners gained confidence, they became more autonomous and sought information online outside the course according to their own needs and interests. Although Kehrwald (2007, p. 198) concluded that

"online learning has great potential to produce quality learning experiences which are highly valued by learners", there is a gap between learner needs and learner proficiencies. That is, the increase in online language learning has not been matched by learner training in order to produce the quality learning experience which Kehrwald (2007, p.198) referred to as the "intricacies of good practice in online learning".

The limitations in our knowledge on learner preparation and learner support points to four areas yet to be explored amongst beginner language learners. Firstly, it is to determine the preparation and support process necessary to promote a quality learning experience in technology-enhanced classrooms derived from an understanding of learner needs and their technological proficiencies. Secondly, it is the actions taken by both teacher and learners to produce quality learning experiences over time. Thirdly, it is to determine the effects of the preparation, support and actions upon the development of learners' ability to manage their learning in TELL environments. Finally, it is yet to be known what impact the role and actions of the practitioner-teacher has on teaching practices designed to support language development in TELL.

2.4 Action research

While there are some instances of faculty conducting small-scale research projects with their students, the role of action research has been somewhat limited and sporadic at the higher education level in Canada. Undergraduate educational degree programs and professional development support for teachers in the K-12 sector have emphasized the importance of conducting action research, yet to date there is a dearth of action research studies at college and university level. Traditional research paradigms that involve control groups and quantitative data

to demonstrate empirical statistical information in the sciences, humanities and social sciences are still very prevalent and prolific. Generalizability and validity are two common threads in research conducted at the postsecondary level in most disciplines. The concept of practitioner research carried out in one's own context is not necessarily seen as meeting these traditional standards of validity and generalizability and is rather seen as going against what is viewed as quality in research (Greenwood, 2012). Yet, one can argue that if educational research is intended to bring about conceptual changes that improve and enhance the learner experience and learning, the teacher-practitioner is in a unique position to contribute to that knowledge as both an agent and observer.

In assessing the quality of action research, Elliott (2007) stated that "educational action research is an ethical inquiry into the ways educational aims and values can find practical expression in the activities of teaching and learning" (p. 231). Furthermore, he claimed that action research "reclaims the teaching situation as the sphere of ethically committed action or *praxis*" (Elliott 2007, p. 238). In action research in language education, Mackey and Gass (2005) state "seeks better understanding of how languages are learned and taught, together with a commitment to improving the conditions, efficiency, and ease of learning" (p. 172). Yet there is a dearth of action research conducted at the postsecondary level in Spanish in Canada which explores the language learner experience in this manner.

Also problematic is the quality of presenting action research reports that fulfill assessment requirements of a recognized academic qualification. McMahon & Jefford (2009, p. 361) argued that action research ""should be judged by the three principles of *theoretical and methodological robustness, value-for-use* and the *potential to enable beneficial change*"

Furthermore, they pointed to the importance of completing at least two cycles of (plan, act, observe, reflect) because otherwise there is "insufficient observation of the effects of any change" (p.366). Therefore, in order for teachers to become "potential agents of educationally worthwhile change" (Elliott, 2007, p. 2), rigorous observance of those three principles for quality in action research to be made. While Elliott's assertion was directed towards the teacher and enhancing her practice, there is a parallel benefit for the learner in building his capacity as an autonomous agent. What is not known is precisely how learner benefits may be manifested in the contexts and actions of each action research cycle.

Meskill and Quah (2013) reported on a growing increase in practitioner reports and the importance of classroom-based language research such that teacher-researchers are "building a solid base of empirical work on which others in the field can build" (p. 41). While their study emphasized classroom-based research on the integration of social media tools into classroom pedagogy, they also pointed to the need for further research in this area in order to expand and build upon the existing knowledge base. According to Meskill and Quah (2013), classroom-based action research that is foregrounded on two areas of inquiry for language learning in online environments such as socio/affective aspects and pedagogical concerns provide a contribution to the knowledge. Furthermore, they emphasized that clarity of focus and intent in these areas are key in developing an action research intervention. These types of inquiry action research focus on eliciting either learners' reactions and reflection (socio/affective) or on the tasks, strategies and discourse of language educators (pedagogical concerns). Our understanding and contributions to this type of knowledge amongst early stage language learners are yet to be fully explored.

2.4.1 Historical background of action research. In order to fully understand the complexities and the evolution of the iterative process associated with action research, it is informing to trace its history to present-day contexts. While aspects of the Action Research paradigm such as its cyclical nature and iterative process have not varied greatly over time, other variations such as critical reflective practice in education leading to beneficial change in learning and teaching in local contexts have become more prevalent over time as opposed to the development of generalizable hypotheses.

As a research paradigm, action research traces its roots and early development to work begun in the 1940s led by Kurt Lewin, accredited as the "father of action research" (Burns, 2005). Lewin saw action research as a spiral of steps in circles of planning, action and fact-finding about the results of the action (Lewin, 1948 cited in Burns, 2005). Action takes place among participants in the process of planned interventions where strategies, processes or activities are developed within the research context, and those interventions occur in response to a perceived problem or question. That is, there is a recognized gap between the ideal and the reality which the researcher in that social context perceives as in need of change. Lewin's theory divided the work into stages of reconnaissance, collection of data, analysis, development of hypotheses to inform action, and then hypotheses were tested in action and changes were evaluated (Lewin, 1988 cited in Noffke & Somekh, 2005). Variations of that original model have been proposed, the best known by Kemmis & McTaggart (1988) who proposed four essential movements which evolved through a "reiterative, self-reflective spiral or loop" (Burns, 2005, p. 59), (the repetition of which would depend on the scope, purposes and outcomes of the research) and which are summarized by Burns (2005, p. 59) as follows:

- *Plan* (forward looking and critically informed in terms of recognition of constraints and the potential for more effective action);
- *Action (*deliberate and controlled, but critically informed recognizing practice as ideas-inaction which are mediated by material, social and political efforts towards improvement);
- *Observation* (responsive and also forward-looking in that it documents the action, its effects and its context of situation by using 'open-eyed' and 'open-minded' observation plans, categories and measurements);
- *Reflection* – both evaluative and descriptive, makes sense of the processes, problems, issue and constraints of action, develops perspectives and comprehension of the issues and circumstances in which it arises.

(Based on Kemmis & McTaggart, 1988; Burns, 1999 and 2005)

Early critics of the model have argued that it over-represents action research as a fixed series of predictable steps, that it is too systematic and overlooks spontaneous and creative episodes (Elliott, 1991; McNiff, 1988 cited in McNiff, 2002). Yet, the framework does not prescribe the context or contents of each of the cycles and therefore allows for flexibility particularly regarding unanticipated actions by both the practitioner-researcher and the learners involved in the study. Since then, McNiff (2002) has contributed to a deeper understanding of action research as practitioner-based research and self-reflective practice through a process of asking critical questions about one's own practice in one's own context. Critical reflective practice is an essential component of action research and will, alongside observation, aid the practitioner-

researcher in determining the next actions to be taken. Yet, Burns (2005) makes the point that action research in practice is not fixed, but "messy" and that

> "the processes experienced by action researchers are best viewed as necessarily adaptive to the educational situations and circumstances of the participants and to the particular social, cultural and political exigencies that motivate and surround them" (p. 59).

Therefore, while the framework has defined stages in the action research, it is not meant to be prescriptive in either the contexts or content and does allow for spontaneous, unanticipated and creative actions taken by either or both the researcher and the participants.

The Burns (2005) interpretation recognizes the difficulty of one fixed definition for action research, and makes the point that much action research is not intended to be generalized (Mackey & Gass, 2005). For example, the number of participants is generally smaller than in larger-scale quantitative or qualitative inquiries. Furthermore, action research does not typically use control groups and does not follow the traditional sense of validity or reliability of more established research paradigms. A key distinction of action research from other forms of research is that the main focus and use of the findings are to deliberately change, modify and improve situations or contexts rather than on issues of proving or disproving hypotheses. Therefore, applications of the research are made from a localized rather than generalized standpoint (Burns, 2005). Then, in the context of a classroom-based action research, the quality of the action research is not measured by its generalizability but rather by the actions taken by all participants that effect change that is beneficial. If the intent of an intervention is to improve the learning experience of all participants and not to prove a particular hypothesis, one could argue that practitioner action researchers are more likely to achieve reliable and trustworthy

outcomes in their data analysis provided that the study has maintained both academic integrity and rigorous and transparent procedures for data collection. There is an argument to be made for how strong, practice-based evidence through action research as both a practice and research approach can impact and effect change.

Convery (2014) pointed to developments at the international level in classroom-based action research (CBAR) that include the growth of "learner voice" projects that aim to "emancipate learners as full contributors towards more informed classroom decision-making." (p.8). Furthermore, CBAR "supports and encourages teachers to engage in classroom inquiry as a vehicle for lasting change, and that the research design and infrastructure must be teacher-initiated" (p. 10). This view lies in direct contrast to traditional research in postsecondary disciplines which demands that distance from the participants is necessary in order to maintain objectivity. By contrast, action research "mixes discourses, erodes boundaries between action and knowledge-generation" that allows it to make "a unique contribution" to educational reform (Somekh & Zeichner, 2009, p. 6).

2.4.2 Teacher-Practitioner-Action-Researcher (TPAR). An analogy from Cain (2011) is appropriate for describing classroom-based action research projects that a practitioner-researcher may undertake. He states that "teaching is not a swimming lesson in which teachers conduct lessons from the edge of the pool, but a canoeing lesson: teachers' and students' canoes are in the sea, already moving, the wash from one canoe affecting the movements of the others, all moved by the sea's currents, and there are no edges to cling to." (p. 8). Interpretation of the analogy alludes to the fact that in the context of the classroom, all actions will have an effect on everyone present, and it is for the practitioner to act as both guide and model to aid learners in

developing the skills they need. The analogy captures the interactive nature of the classroom and the impact that each individual, learner and practitioner alike, has on the entire experience of all.

In this context, the learning process must operate on two levels, one discursive and the other experiential (Laurillard, 2008). Interactions amongst learners and between learners and the practitioner influence the actions of the individual learner working within a learning environment constructed by the practitioner. In this experiential level, learners adapt their actions in trying to achieve the task objective based on their developing ideas and conceptual understanding. These same levels of the learning process apply to the practitioner who, through a process of action and reflection, selects the task environment for learners and then reflects on their performance at the experiential level). Therefore, the actions of both learner and practitioner are intricately interwoven, and it is this "two level conversation" (Laurillard, 2008 p. 141) between the practitioner and the learner that provides the framework for learning to take place, building the capacity of the learner while at the same time expanding and deepening the knowledge of the practitioner.

As a result, the teacher-practitioner-action researcher (TPAR) becomes an "implementer of change" (Sullivan, Glenn, Riche & McDonagh, 2016, p. 112) and develops the ability to bring about improvements and develop theories in and on practice through critical reflection and action (Sullivan et al). In that sense, action research for the TPAR becomes a "practice-changing practice" (Kemmis, 2009, p. 464). That is, the aim of the practitioner is to act in such a way so that the *outcomes and longer-term consequences* (Kemmis, 2009, p. 470) of the practice will be for the best. It could be argued that it is limited by being wholly self-directed research in which

the TPAR makes the decisions about what is to be explored and what changes will be made. Yet it is the voices and actions of the learners that provide the guiding source for making decisions, and therefore, a contrary argument is that a reciprocal relationship does in fact exist and that all are affected by the practice, and all will live with the consequences.

In higher education, TPAR have both the professional responsibility to take actions that are intended to be beneficial for the learner, as well as the ethical responsibility of a researcher to do no harm, in this case, to the learner. Therefore, inclusion of learner voices and support for learner actions become essential components of any TPAR study. This approach provides multiple ways of learning and knowledge building, with even possibly unintended findings in the data that may be valuable for the practitioner researcher in terms of their contribution to enhanced practice and therefore of benefit to the learners (Sullivan et al, 2016). Acknowledging unexpected outcomes and putting them under scrutiny add to the rigour and robustness of the research process and therefore add value to the trustworthiness and credibility of the results. (Sullivan et al, 2016, p. 120)

Emerging themes in recent literature on Action Research (AR) in higher education focus on student engagement and a growing imperative to utilize technology to support learning (Gibbs, Cartney, Wilkinson, Parkinson, Cunningham, James-Reynolds, Zoubir, Brown, Barter, Sumner, MacDonald, Dayananda, & Pitt, 2016). Their review of the literature on the use of action research in higher education stems from UK government policy which places renewed focus on the learner and teaching at the heart of higher education policy (Gibbs et al, 2016, p. 2). Therefore, the teacher-practitioner-action researcher has an opportunity to contribute to these themes through informed practice and to demonstrate their capacity for creating their own

theories from that practice. As indicated earlier in this chapter, the interwoven experience between practitioner and learner and interactions amongst learners provide a unique framework for the learning to take place (Laurilliard, 2008). With such focus on learner experience and projects focusing on "learner voices" (Convery, 2014) in the environment, a practitioner may implement change with the aim of benefitting both learner and by extension, the professional practice (Sullivan, Glenn, Riche, & McDonagh, 2016). This process supports their argument that "you, as a teacher researcher, are better placed to give a true and accurate account of your research, from an insider perspective, than is an external researcher interpreting your research solely from a non-participant vantage point" (Sullivan et al. 2016, p. 127).

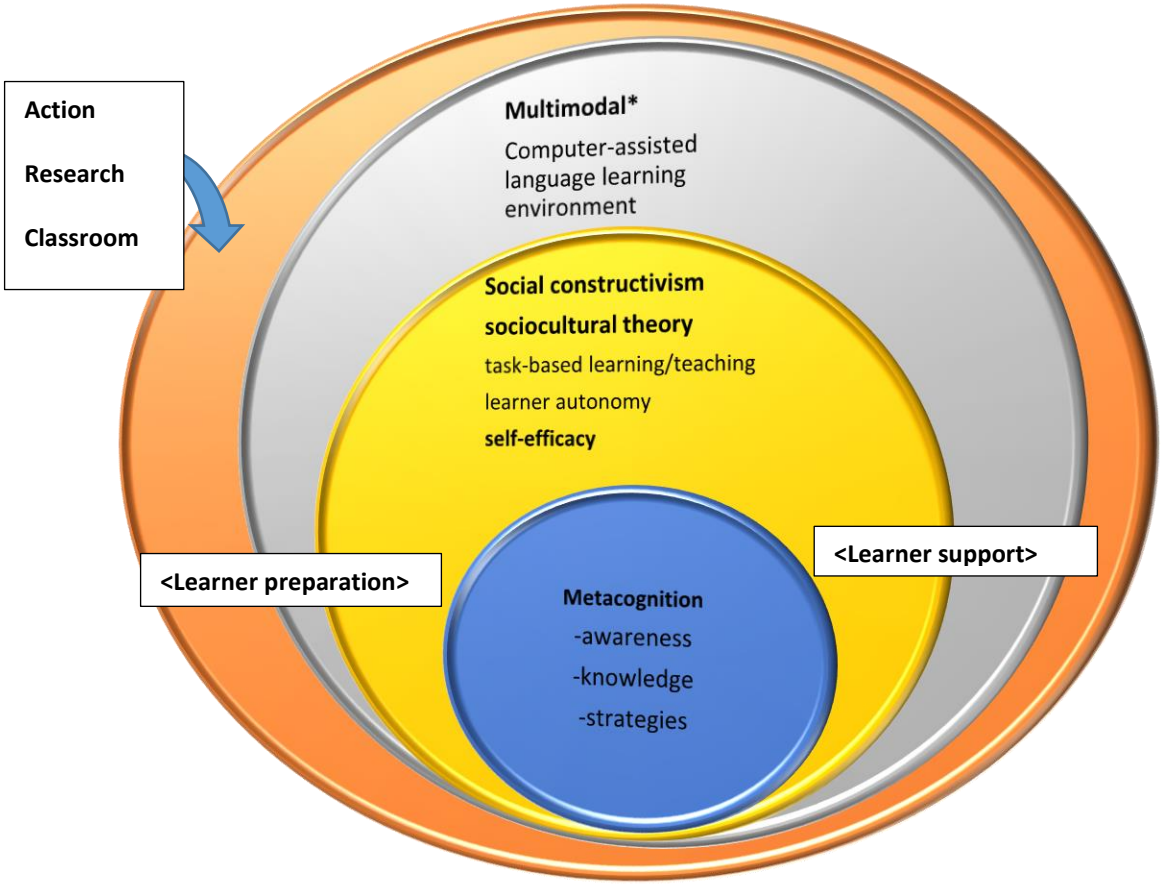
2.5 Conceptual framework of the action research

With the research focus on development and potential change in a natural social situation, in this case, the language classroom, the researcher is adhering to concepts set out by Somekh (2006) which are agency, change and generation of actionable knowledge (p.11). By agency the researcher refers to Somekh's definition as the "capacity of a self to take actions that will have an impact on a social situation" (p.15). This capacity develops for the learner and practitioner together through shared experience that shapes and guides the course of action taken. That action determines the extent to which the other two concepts of change and generation of actionable knowledge are applied to benefit the participants.

Burns (2005) asked action researchers to question if action research has a role in the production of knowledge for the field or is mainly for the practitioner's personal and professional development. If the purpose of the action research is to gain insights into the learning experience in order to enhance it, the contribution to knowledge lies in the potential benefits for future

learners. In a study on metacognition and the development of learner autonomy in technology-mediated language learning environment for adult beginner foreign language learners at the college level, the insights gained will directly benefit the learner experience while also expanding the knowledge of the practitioner.

The conceptual framework of the action research in this study is based on the key aspects summarized in the literature review as illustrated in Figure 2.1.



*textual, digital, aural, visual, social modes

Figure 2.1. Conceptual framework of overlapping components of the study.

2.6 Chapter Summary

Contemporary and earlier studies have led to a need to ask questions about the specifics of explicit strategies instruction and the possible links to metacognition, the development of learner autonomy and self-efficacy in technology-enhanced language learning classrooms for beginner learners of a foreign language. The gaps in the literature point to a need to gain a deeper understanding of the beginner language learner experience, the use of metacognitive strategies at that early level of development and the effects of strategies on lowering inhibitions, thereby building confidence and self-efficacy and helping these early learners to become more autonomous.

Learners come to the classroom with a set of beliefs, values and attitudes, which determine the extent to which they engage in the learning context. Therefore, it is important to create an open, nurturing learning context so that feelings of anxiety, confusion and frustration are reduced as they may have a negative effect on the learning that takes place. By increasing the level of self-efficacy in the learner, there is a greater potential for success in the learning context. Studies indicate that learners who have high self-efficacy and employ metacognitive strategies according to their needs become more effective and efficient language learners.

The theoretical framework which informs the TELL tasks and resources in the study is based on sociocultural theory which states that learners are social beings who acquire language through interaction with others. This interpretation is supported by a review of the literature from Lai and Li (2011) and Swain, Kinnear, and Steinman (2015). It is through interaction that the process of language acquisition or internalization of language is accomplished. Researchers have suggested that Vygotskian sociocultural theory concepts of learner and peer support or

scaffolding in the development zone of proximal development (ZPD) is closely linked to language learning in CALL environments as learners become increasingly more connected to one another. The social constructivist pedagogical approach also takes the view that learners are social beings who interact, collaborate and actively co-construct knowledge through a series of tasks that are relevant and meaningful to their learning experience. At the first year university Spanish level, little research has been conducted in this area which leaves the field with a limited understanding of the beginner language learner experience.

Task-based language learning (TBLL) can be summarized by the key elements of action, engagement, purpose and communication through the language learning process. It is underpinned by both sociocultural theory and the social constructivist approach, and in this way, task designs are informed by an understanding of what types of tasks will be beneficial for language acquisition to take place in multimodal environments. Tasks follow patterns of interaction, collaboration, co-construction and reflection. Again, while considerable research has been conducted in both material and CALL environments, less is known about the actions and experiences of the learner at the beginner level in higher education.

To ensure the potential for learner success, both learner preparation and learner support play crucial roles in CALL environments. Teachers cannot make assumptions about the competency of learners based on their use of technology in daily life and need to become informed about the abilities of their learners before designing tasks in learning contexts in which they may not be comfortable. Learner training and the teacher's knowledge and skills in CALL tasks better prepare learners for success in their learning. Throughout the learning process, and in particular in online environments, learner support needs to be ongoing and consistent.

Furthermore, without first taking into account the learners' proficiencies and competencies, conclusions cannot be made about their use of strategies.

Metacognitively, strategic language learners are more effective in their learning and employ strategies that will help the learning process and lead them to become autonomous learners. Learners become metacognitively aware through metacognitive strategies instruction which focuses on raising awareness of the components of metacognition: metacognitive awareness (state of mindfulness), metacognitive knowledge (learner understands how she learns), and metacognitive strategies (both the actions and skills which establish learner autonomy). The five stages of metacognitive strategies action are planning, selecting, monitoring, orchestrating and evaluating. Numerous studies indicate the value of explicit metacognitive strategy instruction as it improves and enhances the learners' experience even with challenging tasks. Furthermore, by employing a more holistic approach in a research context, richer and deeper knowledge of the learner and the learner experience becomes possible and forms a basis for enhancing the learning experience overall.

Finally, in order to gain a deeper understanding of how early language learners learn languages, the teacher-practitioner-action researcher (TPAR) explored her own classroom so that improvements or changes could be implemented to enhance the language learning experience. However, the very practical issue of improving learner experience is connected to the expectation that the action research model produces knowledge that contributes to, and expands the body of knowledge on metacognition and language learning in technology-enhanced classrooms amongst early foreign language learners. The conceptual framework of the action research in Figure 2.1 depicts the components and aspects of the study. The key aspects and issues

summarized here are directly linked to the research questions, methodology and data collection instruments that form the basis of the study and are elaborated in the Methodology Chapter 3 that follows.

CHAPTER 3 METHODOLOGY

3.1 Overview

Action research applications and the role of the education practitioner were reviewed in the previous chapter. This chapter describes the theoretical base for the research paradigm and methodological choices adopted in this exploratory study. Guiding those methodological choices were the research questions which centered on the learning experiences of seven first-year college students of Spanish as a foreign language. Using primarily a qualitative approach to data collection with some quantitative data collected on prior language learning experience and attitudes, the study followed a naturalistic model as participants engaged in collaborative tasks in multimodal learning contexts in a TELL classroom setting. A variety of data collection instruments designed to provide insights into their development of metacognitive strategies and knowledge were also chosen to ensure robust and rigorous research procedures in order to provide reliable and credible results. In order to understand the learners' developmental processes involved in the key concepts of metacognition and learner autonomy in multimodal language learning environments, the research was grounded in the reality and experience of the learners, thereby rendering trustworthy the qualitative approach adopted. Data collection instruments included pre- and post-treatments questionnaires, a selection of learning tasks and awareness-raising self-reflection post-task activities in both face-to-face and TELL environments, teacher-researcher observations and reflections and participant interviews.

The action research cycles AR1, AR2, AR3, and AR4 focused on the experiences of first year college learners of Spanish as a foreign language, and the data collected and analyzed

focused on their perceptions and actions before, during and after specific tasks. Participant profiles based on information gathered in the pre- questionnaire were used to design the action research cycles as an integral part of the research design. Data included spoken and written reflections of learners, transcripts of the participants' interactions during tasks, and the teacher-researcher's written observations, and reflections. Any effects of explicit metacognitive strategic instruction on learners' perceptions of their ability and their demonstrated ability to manage and complete tasks in multimodal learning environments were explored through analysis of the data collected in each action research cycle.

3.2 Research design

The research questions outlined in Chapter 1 provide an understanding of the strategic processes and experiences of adult beginner language learners working in multimodal environments. As an explorative study, each Research Question (RQ) included a sub-category of related questions which guided the researcher's recorded observations of the beginner language learner participants' actions. Transcripts were made of the audio recordings of the students' interactions during the research tasks. Metacognitive awareness, knowledge and strategies were targeted components of the learning context. Table 3.1 provides an overview of the three-stage design of the action research conducted to address the research questions.

Table 3.1 Overview of the three-stage design of the research

Stage 1. Pre-treatment questionnaire **– provided baseline information for design of Action Research**

Stage 2. Action Research (AR) Cycles (AR1, AR2, AR3, AR4)				
Action Research (AR) Cycles	**Description**	**Cognitive** (see Table 3.5 for task descriptions)	**Metacognitive** (see Table 3.5 for metacognitive prompts)	**Researcher Observation/reflection**
AR 1	***Setting:*** **computer-equipped classroom** ***Preparation and planning:*** ***Learner training*** **based on results of pre-treatment questionnaire** ***Participant action:*** **- Practice Spanish L2 tasks in-class** **- Reflect upon and answer guided questions on strategies use**	**A. Use of technology – *iLrn* software linked to course textbook** **Two orientation sessions conducted outside class during first two weeks of semester – one-on-one instruction for three participants in researcher office** **B. In-class instruction using *iLrn* for Spanish L2 learning – repeated at regular intervals during semester** **C. Participant completion of in-class tasks using *iLrn* for Spanish as L2**	**A. Individual reflection and group sharing on guided questions in class on use (or not) of strategies for language learning.** **B. Verbal reminders on strategies by teacher/researcher in-class pre-task** **C. online embedded metacognitive prompts post-task for participant reflection**	**- to increase level of preparedness of learners for Spanish L2 online tasks in AR2** **- to instruct students on use of metacognitive strategies (preparation and planning) for learning tasks in Spanish L2** **- to identify and implement appropriate tasks for Spanish L2 for action research cycle AR2** **- to create metacognitive awareness for completing tasks in Spanish L2 contexts**
AR 2	**Setting:**	**1. "Mi familia"** **-*iLrn* software program**	**A. In-class discussion of processing and challenges**	**- to observe process of task completion**

	computer-equipped classroom *Participant action:* Completion of two online tasks in Spanish L2 implemented according to participant and researcher response in AR1 Note: unable to complete both tasks due to technology breakdown	- COERLL – University of Texas site -individual/group jigsaw -asynchronous communication 2. "Una fiesta de sorpresa" -*iLRN* VoiceBoard -dyads -social interaction – text chat and synchronous communication	B. Online embedded metacognitive prompt post-task in *iLrn* for participant reflection	- to observe use (or not) of metacognitive strategies - to observe response to use of technology - to record researcher and participant reflection - to use data gathered from researcher and participant reflection from AR2 to inform AR3
AR 3	Setting: Computer-equipped Classroom Practice in-class activities using the iPads: linked to data gathered in AR1 and AR2 for continued learner support and preparation Online task 3: Knowledge gained from technology	1. Entrevista – "la rutina diaria" - iLRN software program - social interaction -synchronous communication -iPad Voice Record Pro app 2. "Fuimos a cenar" - *iLrn* and iPad Voice Record Pro	Online embedded metacognitive prompt post-task in *iLrn* for participant reflection	- to provide appropriate learning tools for online tasks in Spanish L2 – response to data gathered from AR2 - to observe and record participant interactions during tasks - to observe and record use (or not) of metacognitive strategies (preparing, planning, selecting)

	breakdown at computer stations in AR2 led to the use of iPads in AR3 for voice recording ***Participant action:*** **Complete interactive task in Spanish L2 and reflect upon strategies use**	**- Triads** **- Social interaction** **- synchronous communication**		**during task completion** **- to observe and record participant response to use of iPad technology** **- to use data gathered from researcher and participant reflection from AR3 to inform AR4**
AR 4	**Setting:** **Computer-equipped lab** **Online task 4:** **Builds on participant knowledge gained in AR3 regarding learner needs for support and preparation time for Spanish L2 online task completion** ***Participant action:*** **Complete interactive task in Spanish L2 and reflect upon strategies use.**	**Part 1: in-class online** **- YouTube – listen/view** **"Amazonas Colombia"** **- in-class activity –f2f information gap** **- synchronous communication** **Part 2 - Online task:** **"Survivor!Amazonas"** **- *Blackboard Collaborate*** **- Triads** **- Group social interaction, problem solving** **- synchronous communication**	**Online embedded metacognitive prompt post-task in *iLrn* for participant reflection**	**- to observe and record participant interactions** **- to observe and record use (or not) of metacognitive strategies (preparing, planning, selecting, monitoring) during task completion** **- to use data gathered from researcher and participant reflection from AR4 to inform future** **design of online Spanish L2 learning tasks**

Stage 3. Post-Treatment:

- **Post-Treatment Questionnaire**
- **Selected post-treatment interviews**

Expansion of the research questions into sub-questions is reflective of the nature of the study which sought to expose the critical learning processes involved in the combined learning experience of face-to-face, person-to-person and online language learning. These sub-questions provided deeper and more precise knowledge about the learners' behaviours and the impact of their actions on their sociolinguistic and metacognitive development. Results are reported in Chapter 4 in the Findings Summary.

The research design met the purpose of the action research exploratory study on the development of metacognition by applying a social constructivist approach in multimodal contexts. The overlapping components of the action research represented in the conceptual framework in Figure 2.1 framed the research questions thereby the manner of collecting and analysing the data as outlined in Table 3.2.

Table 3.2 provides an overview of the three main research questions and the sequence of the data collection instruments as they related to each of the research questions presented in this chapter. The instruments were used to inform the initial and subsequent series of experiences and reflections and to determine observable changes for analysis in terms of learning experience and teaching practice. Further expansion of these research questions into sub-categories as shown in Table 3.2a resulted in a deeper exploration of the learner experience within the themes of the main research questions.

Table 3.2 Overview of research questions linked to data collection and analysis

Research questions (RQ)	Instrument for data collection	Qualitative Analysis	Quantitative Analysis
RQ1: What metacognitive strategies do adult beginner foreign language learners use in technology-enhanced environment to complete learning tasks in Spanish?	Pre-treatment questionnaire	Open-ended responses	Closed questions Likert scale responses converted to percentage
	Recorded audio transcripts of task interactions in technology-enhanced (e-book, videoconferencing, *iLrn*, face-to-face social, and iPads) environments	Themes identified and categorized using *process* coding method	Not quantified
	Participant recorded reflections	Themes identified and categorized using *process* coding method	Graphic representation of coded data converted to percentages
	Researcher observations and reflections	Comparison with participant reflections Themes identified	Not quantified
	Selected semi-structured participant interviews post-treatment	*InVivo* coding, participants' own responses analyzed for themes	Not quantified
RQ2: How do learners apply instruction in metacognitive strategies to technology-enhanced learning tasks?	Recorded audio transcripts of task interactions in multimodal environment	Themes identified and categorized using *process* coding method	Not quantified
	Participant recorded reflections	Themes identified and categorized using process coding method	Graphic representation of coded data converted to percentages
	Researcher observations and reflections	Comparison with participant reflections Themes identified	Not quantified

RQ3: What are the ~~affective~~ effects of teaching metacognitive strategies on the beliefs, attitudes and level of confidence of beginner learners of Spanish as a foreign language?	Pre-treatment questionnaire Post-treatment questionnaire	Comparative analysis between pre-treatment responses and post-treatment responses	Data converted to percentages from individual responses to questions on Likert-type scale
	Post-treatment questionnaire	Individual responses to strategies used and level of confidence reported	Data converted to percentages from individual responses to questions on Likert-type scale
	Participant self-observations, reflections	Related themes identified and coded	Not quantified
	Researcher observations and reflections	Content of participant reflections, task interactions analyzed for related themes	Not quantified
	Selected semi-structured participant interview	*InVivo* coding, participants' own responses analyzed for themes	Not quantified
RQ4: What is the impact of the action research on strategic language teaching practices?	Researcher observations, reflections and actions during the action research	anecdotal	Not quantified

Table 3.2a details the sub-questions underpinning each main research question.

Table 3.2a Sub-category expansion of Research Questions (RQ)

RQ1	a. How do they decide which strategies to use? b. What role does task type play in their choice? c. What role do preferred individual learning styles play in strategy choices? d. Do the learners' strategies change over allocated class time in the semester? If so, how and over what time period?

RQ2	a. Is there a relationship between the strategies used online and specific in-class awareness-raising tasks? b. How do learners identify those strategies in online post-task reflections? c. What preferred strategies emerge that are different from face-to-face interactions?
RQ3	a. What is the relationship between self-awareness and self-efficacy? b. Do affective filters become less active? c. Do learners use more strategies if they feel more confident or less confident? d. What behaviours indicate developing learner autonomy?
RQ4	a. What is the influence of the role of the practitioner-researcher? b. How does action research affect teacher strategies development? c. Is there an argument for holistic approaches to classroom-based research in technology-enhanced language classrooms?

3.3 Research paradigm

The concept of doing research ***with*** rather than ***on*** people is the core component of the paradigm of action research which focuses on practical solutions to issues as they arise in a particular context (Bradbury & Reason, 2003). In this study, the practitioner-researcher had identified an area of concern among the learners and devised a plan of action to address that concern through action research conducted in the classroom with an aim to observe learner experience and to reflect on the effectiveness of the teacher-researcher's professional practice. Iterative cycles of planning, action, observation and reflection were applied (Burns, 2011; Bradbury-Huang, 2010; and Bradbury & Reason, 2003) collecting data for analysis in each action research cycle as shown in Figure 3.1:

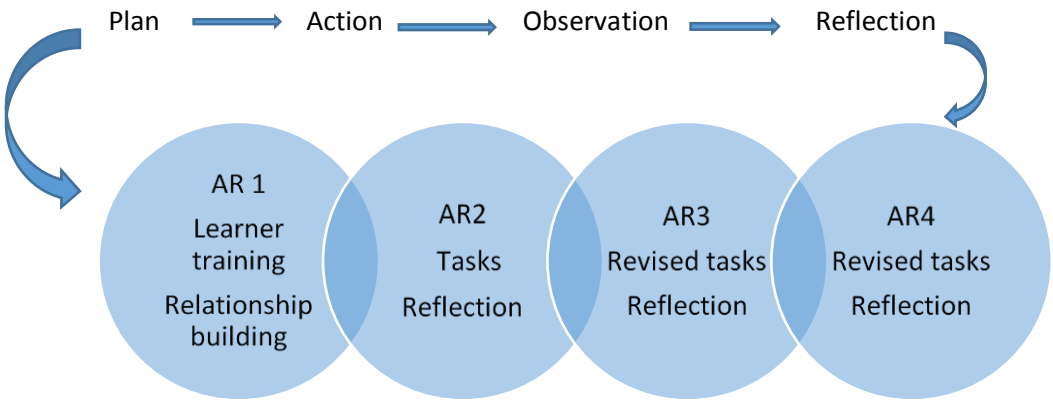


Figure 3.1 **Action Research Cycles.**

The overlapping of the action research cycles portrays a relationship between and across all cycles. That is, what was learned in AR1 was applied to reinforce, improve or change actions in AR2, and so on. In that sense, AR4's revised tasks and reflections are based upon, and reflect, the knowledge gained through actions, observations and reflections in AR1, AR2 and AR3.

Table 3.3 details the data collected and analysed in each of the action research cycles.

Table 3.3 Outline of the Action Research data collection and analysis process

Action Research(AR) Cycles	Data collected	Data analysis	
AR1 1. Pre-treatment questionnaire 2. Learner support, training 3. Relationship building	Pre-treatment questionnaire Researcher observations and reflections	**Quantitative** Likert scale percentages of reported levels of technological competence and confidence	**Qualitative** Participant profiles observations and reflections guided processes of learner preparation

AR2 1. In-class and online instruction 2. Tasks in TELL environments 3. Post-task reflections	Task interactions – recorded Participants' post-task reflections Researcher observations and reflections	**Quantitative** Coded themes charted and reported as percentages of number of participant responses	**Qualitative** Themes coded Anecdotal reporting of observations and reflections guided processes of adaptation of task
AR3 1. in-class and online instruction 2. Tasks in multimodal environments 3. Post-task reflections	Task interactions – recorded Participants' post-task reflections questionnaire Researcher observations and reflections	**Quantitative** Coded themes charted and reported as percentages of number of participant responses	**Qualitative** Themes coded Anecdotal reporting of observations and reflections guided processes of adaptation of task
AR4 1. Tasks in multimodal environment 2. Post-task reflections 3. Post-treatment questionnaire	Task interactions – recorded Participants' post-task reflections	**Quantitative** Coded themes charted and reported as percentages of number of participant responses	**Qualitative** Themes coded Anecdotal reporting of observations and reflections guided processes of adaptation of task

4. Selected interviews	Researcher observations and reflections	Analysis of selected participant interviews was done as anecdotal reporting based on responses related to research questions and emergent themes analyzed in previous cycles

As shown in Table 3.3, AR1 focused on first gathering information on the learners themselves with the pre-treatment questionnaire to guide the necessary training and support, as well as to build rapport between teacher-researcher and learner participants before they engaged in the tasks to be analyzed in the subsequent cycles AR2, AR3 and AR4. It was in AR2, AR3 and AR4 that task interactions were audio-recorded and written post-task reflections of learner participants were analyzed. In addition, data collected on researcher observations and reflections in each of the four cycles guided the actions taken in a subsequent AR cycle and are reported separately.

Bradbury and Reason (2003) recognized issues associated with generalising from action research, so they called for new standards of validity, reliability and trustworthiness to be applied. Classroom-based action research upholds standards for empirical study by its use of a variety of data collection instruments and close observation and engagement with participants. That is, practitioner-participant-researchers as "insiders" to a situation, are involved and have access to a type and level of knowledge and understanding, not accessible to traditional researchers who are viewed as "outsiders" (Somekh, 2006). If one accepts that one cannot establish truths which are generalized across contexts, it is not a disadvantage to have a methodology which always generates contextualized knowledge. Bradbury-Huang (2010) added

to this argument claiming that the "new stock of knowledge becomes available to all with the possibility that the transferability of knowledge may grow" (p.105), so that while action research may lack generalizability by a conventional definition, more local knowledge is gained which can be shared through various peer review mechanisms. Therefore, in an action research interpretive paradigm, standards of credibility and plausibility replace the traditional concepts of validity (Lincoln & Guba, 1985).

The special characteristics of qualitative study are highly personal, experiential and interpretive and therefore mainly subjective in epistemological position. The subjective position is central to a standard of research which assumes that "one's truth" is socially constructed and represents a view of "reality" according to particular contexts and participants (Johnson & Christensen, 2008; Somekh, Burman, Delamont, Meyer, Payne & Thorpe, 2005). This view of reality as being socially constructed is a central component to the action research paradigm adopted in this study. This action research took an "explicitly interventionist and subjective approach" (Burns, 2005) in that it was centrally located in the social context of the language classroom. Participants-learners were actively engaged in planning, acting, observing and reflecting upon activities to become more autonomous, and the practitioner-researcher interactions with participants and self-reflections aimed to capture an understanding of the participants' learning processes, as well as improving professional practice. Therefore, researcher objectivity, as it is conventionally applied to quantitative and qualitative research was not appropriate for this context in which participants were involved both centrally and actively (Burns, 2011).

The qualitative data collected resulting from the central involvement of participants provided a deeper and broader view of the learners' behaviours in context (Johnson & Christensen, 2008) in that it represented their lived experiences, the meanings they made of those experiences, and how their experiences could be enriched by "mining" that meaning (Seidman, 2013, p. 18). An emic approach was adopted for understanding the socially-constructed reality of the participants by observing their experiences in action and embedding findings in them (Denzin & Lincoln, 2011). As it is mainly subjective in its epistemological position, the approach is highly personal, experiential and interpretive. This position is in contrast to a quantitative or etic approach which is abstract and does not report participant experiences directly (Denzin & Lincoln, 2011).

Furthermore, a qualitative approach was used given that the "research issue was complex and needed "to be explored rather than measured" (Burns, 2011, p. 421). To develop an in-depth understanding of the second language learner experience in multimodal contexts, the focus was on practical issues situated in a particular setting and studied by applying both a pragmatic and at the same interpretive approach rather than seeking cause-effect explanations (Stake, 2010). Table 3.2 reflects this approach and response to the research questions from the data collection instruments used, and the types of analyses carried out. Recorded learners' perceptions and learning experiences informed each following cyclical process of teaching and learning, as well as providing the action researcher with information to guide their learning, exponentially. As both practitioner and participant, the researcher planned to gain an "insider's perspective" while acting as the instrument of data collection on both learners' experience and the researcher's

teaching practices (Johnson & Christenson, 2008). The role of the researcher and the process of data collection is described later in this chapter.

The data collection method employed through pre- and post-treatment questionnaires outlined in Table 3.2 and Table 3.3 contained both quantitative and qualitative information elicited from the participants' perceptions of their technological competency, their beliefs and attitudes towards language learning. By means of interviews, the participants elaborated any changes in their confidence in learning Spanish. The interactive tasks were audio-recorded, and participants wrote post-task reflections in response to metacognitive-awareness prompts embedded in the online environment. The range of instruments used focused on participant experience, self-report and authentic recordings of interactions, which in turn provided rich qualitative data that gave a holistic view of their actions, experience and reflections.

The quantitative component by questionnaires of baseline information on the participants is provided in Chapter 4.

In acknowledging that many truths or realities are possible depending upon the individual and the context in which the research takes place, this study acknowledged that both the learner and the researcher bring perspectives that are equally true for each of them. Trustworthiness and reliability in this action research were achieved by adhering to the methodological principles of action research through an iterative process, employing a variety of data collection instruments, recording the authentic experience of the learner and interpreting the data as knowledge that is actionable in both local and broader contexts (Somekh, 2006).

The research reflected the collaborative and systematic nature of the action research process where all the participants, including the practitioner-researcher, worked together to co-

construct knowledge that leads to meaningful change. Some of the criticisms of action research suggest that the low control of the research environment and the strong personal involvement by participants can render the findings as overly subjective and anecdotal (Burns, 2005). In this study, careful steps were taken to avoid those issues and to ensure reliable and credible evidence by employing a variety of data collection instruments before, during and after treatment, not simply observations and reflections of the teacher-practitioner-action-researcher observations. Furthermore, the exploratory nature of the research questions and design point to the intent of the researcher to gain knowledge rather than to prove an existing hypothesis. It can be argued here that the teacher in the classroom will have a deeper understanding and access to the learner's perspective through the rapport that is established between them. An external researcher with no relationship to the context or participants does not necessarily acquire an accurate representation of what may take place on an everyday basis. A key principle of doing action research is iteration, and it is the iterations of cycles which contribute to meeting standards of trustworthiness and reducing the level of subjectivity in the data collected. As data collection builds on evidence from previous cycles and the data are collected through a variety of techniques over time, there is more opportunity to check and re-check the evidence to confirm that what the researcher has observed or heard is correct (Stake, 2010).

In the present study, the practitioner-researcher was studying her own context. Bias was minimized by employing a number of data collection instruments that provided opportunity for triangulation by conducting the study over a four-month period and through a continued process of data collection. Another key principle in action research is the high level of reflexivity and sensitivity to the role of the researcher's self in mediating the whole research process (Somekh,

2006). Throughout the study, the researcher maintained a record not only of observations and reflections on the participants' actions but also on her perspective and role in those actions. The aim of the action research was to provide as complete and accurate reporting of the evidence as possible in order to make informed decisions about how to enhance the learners' experience and improve language-teaching practices. In turn, the knowledge gained has implications for change in curriculum and pedagogy in first year foreign language university courses.

3.4 Setting and participants

As classroom-based action research taking place in a regular language class, the study adhered to the theory of qualitative research in which naturalistic inquiry and observation take place in the natural location of the activity being studied, in this case, the classroom (Angrosino, Rosenberg, 2011). The classroom activities were conducted in person-to-person, face-to-face and online contexts *(iLrn* language learning software, *Collaborate* videoconferencing tool, *YouTube* and the Internet) and using multiple resources for learning (textual, social, digital, aural, visual). For example, the learners received instruction and practice in a person-to-person setting and carried out the tasks in the technology-mediated environments described.

The participants were students of Spanish as a foreign language in the first and second semesters of a first-year university-credit language course. All participants were beginner language learners receiving instruction in metacognitive learning strategies, using Internet language learning resources designed by the practitioner-researcher, a videoconferencing tool, and the *iLrn* language courseware system as part of regular classroom activity and in orientation sessions.

3.4.1 Participant profiles. Information gathered from responses to the pre-treatment questionnaires formed the basis for individual profiles for each of the participants. Their prior knowledge and experience revealed through their responses in the pre-treatment questionnaire provided valuable information to the researcher for planning and implementing the interactive tasks and online learning assignments. The eight participants were students ranging in age from 18 to 50 plus in a first year university credit Spanish language course for beginners. Five participants in the age group 18-24 were pursuing an undergraduate degree in Arts, and the three in the age group 50 and over were taking the course for personal reasons. Each participant profile is based on a summary of their responses to the pre-treatment questionnaire, which guided the design and implementation of the action research.

Bev

Bev was a first year college student in the 18-24 age group pursuing an undergraduate degree in Arts. She had no prior experience studying Spanish, but had studied French in middle school in grades five to eight. This is common in Canada where French is one of the two official languages. Bev had used a number of technological tools in her earlier education and had a high level of confidence in all tools listed on the questionnaire. Her beliefs and attitudes towards language learning demonstrated preferences for engaging with native speakers, using audio and video materials such as videos of speakers of Spanish, podcasts and music recordings, but she had strongly disagreed that it was necessary to learn about the cultures of the people who speak Spanish. She did not enjoy learning with a partner or partners yet had volunteered to participate in this study knowing that it was interactive in nature. Bev emphasized that listening to native

speakers was important for using technology in the language classroom, and she used the strategy of translation and communicating on Facebook with friends who post in Spanish.

Ingrid

Ingrid was a first year college student in the 18-24 age group pursuing an undergraduate degree in Arts. She had studied French in public school but had only used Internet sites in her previous language study. In spite of this limited use of technology, Ingrid felt very confident about using a video-conferencing tool and language learning software. Ingrid thought the reasons for using technology in language learning classrooms was because it allowed for more interactive learning, better way to give feedback, was more time efficient and could accomplish more. She did employ strategies such as relating words to English and putting together rhymes to remember meanings. Ingrid's beliefs and attitude towards language learning demonstrated a positive attitude and a willingness and belief in her ability to learn a foreign language.

Kyle

Kyle was a male first year college student in the 18-24 age group pursuing an undergraduate degree in Arts. Kyle was the only participant who was bilingual. He was bilingual in English and German from birth with some study of French in public school. In his previous language study he had used a computer, e-language labs, the Internet, and voice recording. Kyle felt he had a reasonably high degree of confidence using technological tools, expressing that they were useful in the language classroom for developing a proper accent and allowed for more information to be spread over a shorter amount of time. The strategies he employed involved the Internet, textbook and online text resources but he did not say how he used them. He had a

highly positive attitude and strong sense of self-efficacy in terms of his beliefs and attitudes towards language learning.

Laura

Laura was a first year college student in the 18-24 age group pursuing an undergraduate degree in Arts. Laura had studied French in public school. She had used the Internet, computers, language learning software and podcasts in her previous language study. She felt highly confident in using all technological tools listed with the exception of the video-conferencing tool, which she had never used. Laura thought that using technology in language learning classrooms allowed for different types of learning and that using it made the experience easier. Laura identified several interactive strategies that she used to help her with learning Spanish such as listening to music, podcasts, chatting with her brother who spoke the language well and emphasized the importance of languages as communication. She demonstrated a positive attitude towards language learning and a belief in her ability to learn a foreign language, but felt it was not okay to guess if she did not know a word in Spanish.

Sarah

Sarah was a first year college student in the 18-24 age group pursuing an undergraduate degree in Arts. Sarah was the only participant who had never studied another language. She indicated a high level of confidence in using a variety of technological tools with the exception of voice recording. Sarah became a participant shortly after I had introduced the class to the online learning system and Moodle. Sarah stated that using technology in language learning classrooms provided easy access to many more resources, immediate feedback, and allowed for interactive

learning techniques and games. She was very enthusiastic about learning Spanish and identified several strategies she used to help her learning. She had put three Spanish applications on her mobile phone, watched movies in Spanish and listened to lots of music in Spanish, all of which she stated allowed for fun and personal learning. Sarah had a positive attitude and strong belief in her ability to learn a foreign language even though she had never studied one before.

Carol

Carol was a first year college student in the over 50 age group pursuing an undergraduate degree in Business Administration. She was taking the course for personal interest reasons as an elective in her program. She had no prior experience studying Spanish, but she had studied French in public school. As stated earlier, this is common in the Canadian public school system. Carol had never used technological tools for any previous language study and had only used printed textbooks. She felt very confident using a computer, e-books and the Internet but was not very confident in using video-conferencing tools, voice recording, or language learning software. Carol had a positive attitude and a high level of self-efficacy in her beliefs about her ability towards language learning. She did not use any strategies for learning Spanish, but she felt that a reason for using technology in the language-learning classroom was that you could practice what you are learning and have more time to practice.

Dawn

Dawn was a retired psychology professor taking the beginner Spanish language course for reasons of personal interest. She was in the over 50 age group. As with other participants, Dawn had studied French in school, but she had never used technological tools for language learning.

She felt somewhat confident using a computer and the Internet, but had no experience using e-books, e-labs, Moodle, video-conferencing tools, voice recording or language learning software. Yet, Dawn had a positive response to using technology in language learning classes in that she felt there was more active engagement of the student and speedier feedback. Strategies that Dawn used to help her learn Spanish were rote practice, read aloud and checking oral with written work, her strongest area.

Eva

Eva was a retired administrator taking the beginner Spanish course because she was planning on travelling extensively in South America (personal communication). She was in the over 50 age group. As with many other participants, she had taken French in school but had never used any technological tool for her previous language study. Eva felt very confident using a computer and the Internet but not confident using e-labs, Moodle, video-conferencing tools, voice recording, or language learning software. She demonstrated a mostly positive attitude towards language learning and a belief in her ability to learn a foreign language. Her strategies were to discern patterns in the material covered and then relate the words to English or to mental images. She thought the reasons for using technology in the classroom were to practice oral language, reinforce concepts learned in class and to review.

3.5 Role of the researcher

The role of practitioner-researcher encompassed active and interactive engagement with the participants, the tasks and the contexts (Genat, 2009, p. 103). The multimodal nature of the learning contexts required that the researcher be actively monitoring participants' actions and

negotiating challenges in the TELL contexts available. The action researcher had clearly defined roles: as an active participant in the research process, as a resource person and as a facilitator (Stringer, 2014). As a practitioner, she needed to create conditions that supported the participants' language development and well-being in the TELL environment. Therefore, being present for consultation and being responsive to the participants' queries in a timely and clear manner became an essential aspect of the researcher's role. The researcher established a rapport which encouraged participants to focus on the specific research tasks and engage in reflecting on their own experience. As has been stated earlier in this chapter, participants and researcher worked together towards the common goal of improving and enhancing the language learning experience of adult beginner foreign language learners, as well as improving teaching practices in the technology-enhanced language classroom.

Orientation workshops were conducted outside of class times, over a two-week period and in-class practice activities in the *iLrn* environment during AR1 and throughout the study. In addition, the researcher made a commitment to the class to answer any questions regarding any aspect of the online tasks within 24 hours. Challenges that learners experienced while completing activities both in-class and in TELL were noted, followed by guidance and feedback for future actions. In this way, the students learned that they could count on the researcher as a reliable source of support and information. That foundation enabled the practitioner-researcher to develop a relationship based on trust and support aimed at reducing anxiety amongst the learners.

Person-to-person in-class practice tasks using the *iLrn* software and exploring its various tools for language learning followed the in-class practice activities and orientation on the use of

open educational resources (OERs) so that students could work directly with me using the materials. In so doing, the researcher was able to make clarifications as necessary through immediate feedback. In addition to the technological support, notes on "language learning strategies" and the concept of the "good language learner" were posted on the Moodle course page and were also discussed during regular classroom time as shown in Appendix F. These became part of the in-class training sessions for raising the metacognitive-awareness of the participants to discover strategies to manage their learning.

The in-class training sessions included a PowerPoint presentation of, and discussion on, guidelines for language learning adapted from H.D. Brown (2007). In addition, a verbal class contract with four guiding principles was agreed up. These training instruments are detailed in Appendix G.

The training instruments as well as in-class "metacognitive awareness-raising" questions (Appendix D MARQ - metacognitive awareness-raising questions) and ongoing verbal reminders pre-tasks and throughout the course guided the strategic instruction component of the study. Over the action research cycles it became clear that just as much as their language processing benefited from repetition in a variety of ways, so did the participants' their awareness-raising and strategic development required the same type of repetition on an ongoing basis throughout the course of study.

The researcher-observer recorded actions taken, observations of learner tasks and self-reflections on practice were maintained during the study, and after the activities and tasks were completed. That information was used for making decisions on subsequent actions.

3.6 Data collection instruments in Action Research Cycles

The action research adopted a mixed methods phenomenological approach to data collection. That is, employing a number of data collection instruments, as shown in Table 3.3 allowed for checking the data through multiple input sources to confirm what had been seen, heard and recorded. The holistic nature of the action research with many interacting components necessitated a less traditional approach. The mixed methods approach that does not follow traditional frameworks and is presented by Riazi (2016) as a potential "innovative" approach to research in applied linguistics. In that way, triangulation was achieved, allowing for increased confidence in, and quality of, the evidence as a measure of trustworthiness of the study.

A pre-treatment questionnaire was administered as part of the first action research cycle, and a brief post-treatment questionnaire was formulated based on observations and participant responses during the study. A series of four online recorded interactive learning tasks and self-awareness reflections were performed over a six-week period in two separate cycles over a two semester period. Online tasks had self-awareness metacognitive prompts embedded at the end of each task requiring participants to reflect upon their learning experience. One semi-structured interview was conducted at the end of the study, and responses from a selection of participants were analysed. The participant selection was based upon responses which could best be analyzed as they related to the research questions. The researcher was attentive to both the language processing and performance as well as interactions in L1 which facilitated completion of the tasks. Throughout the study, the researcher kept a record of observations and reflections

on the task interaction recordings, individual actions while on-task and perceived effectiveness of the task itself.

3.6.1 Pre-treatment questionnaire. The pre-treatment questionnaire (Appendix A) was designed to discover baseline information about the participants. As reported in section 3.4.1, participant profiles prepared from the responses to the pre-treatment questionnaire provided useful information regarding the readiness of the participants for the treatment and for language learning in a technology-enhanced classroom.

The pre-treatment questionnaire was administered before any intervention, and the results from it guided the researcher in planning the action research cycles. First, their initial responses gave the researcher the background of the participants necessary to plan the course of treatment through cognitive and metacognitive strategies instruction in the classroom. Out-of-classroom orientation sessions were conducted on the digital technology in the online language learning program and the websites that they accessed for listening and speaking activities. Second, if learners indicated that they were not comfortable with any aspect of the process, the researcher needed to provide support so that they experienced as little discomfort or frustration as possible as that was likely to impact their performance of the tasks and therefore the quality of the data in the study. The research was conducted during regular class time with non-participants present.

The pre-treatment questionnaire design followed Johnson & Christensen's (2008) principles of questionnaire construction in order to create an instrument for data collection that will provide complete and reliable information and fit the research objectives. As Lewin (2005) pointed out, researchers must pay particular attention to every aspect of the wording of the

questionnaire in order to create an instrument that remains both reliable and valid for data collection. The carefully designed questionnaire provided the researcher with reliable demographic data and insights into the attitudes and beliefs of the learners about language learning, as well as their level of comfort and confidence in using technology, before the project commenced.

Previously validated questionnaires were adapted in the design of this study. These included the Horwitz 1987 BALLI (Beliefs and Attitudes Language Learning Inventory) used by Bernat, Carter and Hall (2009), the MALQ (metacognitive awareness listening questionnaire) from Vandergrift et al (2006), the strategy awareness questionnaire from Blanco, Pino and Rodriguez (2010) and the attitudes towards technology use questionnaire from Carr, Crocco, Eyring and Gallego (2011). Lewin suggested cross-checking to try to limit the amount of bias that may occur. Therefore, including both closed and open-ended questions allowed for a more complete view of each participant and cross-checking of beliefs and attitudes. A breakdown of the design of the questionnaire and adaptations made to it from previously published studies is included in Table 3.4.

Table 3.4 - Breakdown of the pre-treatment questionnaire in Appendix A:

Questions	Purpose	Source
1 to 3 4	Prior language learning experience Prior use of technology in language learning	Researcher design Adapted items from "attitudes towards technology" questionnaire from Carr, Crocc, Eyring & Gallego, 2011.
5 and 6	Level of confidence with ICT - Beliefs and attitudes about using technology in learning	Researcher adapted items from "attitudes towards technology" questionnaire from Carr, Crocc, Eyring & Gallego, 2011.

7 and 8	Beliefs and attitudes about language learning Prior knowledge of strategies	Adapted items from BALLI questionnaire (original design by Horwitz 1987) used by Bernat, Carter & Hall, 2009. Adapted items from MALQ from Vandergrift et al, 2006. Adapted item from strategy awareness raising questionnaire from Blanco, Pino & Rodriguez, 2010.
9 to 11	Demographic information	Researcher design

The design of the questionnaire established the background of the participants and their readiness for the treatment both cognitively and metacognitively. In the open-ended questions, participants were able to identify cognitive strategies they used for helping their learning and to give reasons why they thought technology was used in the language classroom. Beliefs and attitudes about the use of technology and language learning itself were determined through both closed and open-ended questions, allowing for a deeper and therefore more reliable understanding of the participant experience.

3.6.2 Post-treatment questionnaire. This instrument (Appendix B) was formulated following findings gained from observations, participant responses during the study, as well as questions related to the beliefs and attitudes of participants towards foreign language learning at the end of the study. This instrument was also used for comparative analysis to the pre-treatment questionnaire which was done to determine if levels of confidence in technology competency had increased or decreased. In addition, post-treatment reflection questions on the questionnaire were used for analysis to determine the presence amongst the participants of changes in reported levels of metacognitive awareness.

3.6.3 Online participant post-task metacognitive reflections. Online self-awareness prompts were embedded at the end of the interactive tasks posted in the online learning environment of *iLrn* (student activities related to the textbook *Hola Amigos, 2nd Canadian Edition,* podcasts and instructor created learning resources which were uploaded or linked to *iLrn)* as well as synchronous computer-mediated communication using the videoconferencing tool *Collaborate*. Upon completion of individual and partnered voice recording in *iLrn* and pair and group interactions in computer-mediated environments, participants reflected upon their actions regarding the use of metacognitive strategies before, during or after the task. In order to get as accurate and complete reporting as possible, participants were able to report in their first language (Cohen, 2011). Face-to-face activity sessions as part of the instruction in metacognitive awareness were followed by practice tasks in the CALL environment. The tasks were performed as part of normal classroom activities and were part of the formative assessment in class participation. There was no grade assigned. Table 3.5 details the online tasks with the accompanying metacognitive prompts in each of the action research cycles.

Table 3.5 Online tasks and embedded metacognitive awareness prompts by action research cycles

AR Cycle 1
Preparation and Planning phase

Learner training:
- Use of technology – *iLrn*
  1. **Two orientation sessions offered outside class during first two weeks**
  2. **In-class instruction on access and features**
  3. **In-class activities using *iLrn***
- Metacognitive instruction
  1. **Individual reflection and group sharing on guided questions in class**
  2. **Ongoing verbal reminders, Moodle, and online metacognitive prompts**

	Mode	Task type	Task description	Metacognitive prompts/reflection
AR Cycle 2 Fall semester Task 1 ---------- Task 2	Online F2f UTexas website **iLrn** ---------- **iLrn** Voiceboard	Jigsaw – group interaction Individual voice recording ---------- Dyad Social interaction	1. Handout: worksheet divided into four sections (A, B, C, D) with corresponding questions about family. 2. Listen and view native speaker family videos at University of Texas site, record answers. Share (in L2) with group members until everyone's worksheet is complete. 3. Each individual then logs in to the ***ILRN*** site (http://hlc.quia.com) to do a voice recording about his/her own family. Submit recording. ---------- You and your partner(s) are organizing a surprise party for a friend. Make a list of the food, drink and other items you need to buy. Use the prompt card. Decide on who you are going to invite and where and when the party will take place. You are on the chat line in VoiceBoard, record your conversation, submit recording	Verbal sharing in class ---------- Did you use any strategies that you can identify to help you complete the task? (for example: planning, preparing, monitoring the task as it went along, checking your plan) What was most difficult?
AR Cycle 3 Winter semester Task 3	iLrn iPad VoiceRecord Pro App	Social interaction	"Fuimos a cenar" In groups of three, tell your classmates about a recent meal at a restaurant. Tell where you went and with whom, what you ordered, and if you had a good time (189C). You are discussing this on your chat line. Record your conversation.	Answer any two of the following questions: 1. How did I plan for this task? 2. Did I ask for help if I wasn't sure? 3. Which strategies did I employ? 4. How effective were the strategies I used?

AR Cycle 4 Task 4a & 4b	YouTube In-class activity	Information gap	AMAZONAS COLOMBIA – EL VIAJE DE TU VIDA: http://www.youtube.com/watch?v=r9Nz7n0_zI4	
	iLrn Blackboard Collaborate	Group Social interaction Problem-solving	SURVIVOR! You and your partners are in Amazonas Colombia and need to last 39 days in the forest. Consider the following questions and together as a group decide what items you will need. 1. ¿Qué van a necesitar para vivir en Amazonas por treinta y nueve días? 2. ¿Qué ropa van a llevar con Uds.? 3. ¿Cuáles son los comestibles que van a llevar? 4. ¿Qué necesitan para dormir? 5. ¿Pueden buscar tres otros artículos en word reference.com que son importantes tener en esta situación?	How did you work out strategies with consideration to the following: 1. Preparation and planning for your learning (task) 2. Selecting and using strategies (how and what did you decide to do) 3. Monitoring your learning (paying attention to what you were doing) 4. Evaluating the task (self-assessment and assessment as a group) --- To answer: I can briefly summarize the metacognitive knowledge and strategies I employed to accomplish the tasks as follows….. They were or were not effective because……

3.6.4 Recorded task interactions. Tasks were taken from two sources, one from the *Hola Amigos* textbook and the other, researcher designed. In both cases, tasks were selected based on their engagement with the target language as appropriate to the learning objectives. The selected tasks for the study were audio recorded in each of the action research cycles 2, 3, and 4. Task samples are included in Appendix H and Appendix I. The recordings were analyzed for

instances of metacognitive processing and strategies over the three cycles and coded for themes related to the metacognitive awareness-raising instruction in class. A comparison of participant reflections and what was observed by the researcher from analyzing the task recordings was conducted to determine what strategies participants could identify that were in fact part of their actions in the task interactions.

3.6.5 Researcher observations and cycle reflections. An essential component of this study was the record-keeping not only of the researcher's observations of the participants' actions and reactions during the tasks, but also of the reflections of the researcher on the study and to consider actions that may have been necessary to change or improve practice. Documentation includes written entries and notes on transcripts of participants through each cycle. In that sense, observations contained both first-person and second-person components (Bradbury & Reason, 2003).

Part of the study required instruction in metacognitive strategies and in accessing and using the electronic classroom. While the initial set-up for the online component was relatively straightforward, the practitioner-researcher provided strategic instruction and practice in the classroom before participants completed the research tasks in *iLrn* in each of the action research cycles. During those sessions, observation of the participants' behaviour and their interactions with each other was made and support was provided as needed. The researcher made these observation notes as part of the professional log notes reporting the process for each task and cycle. As the researcher led the instruction initially, as well as conducted the follow-up observations of the online tasks, an additional role would necessarily become that of observer-as-participant during the observation sessions.

A primary rule in action research was observed in the conduct of this study, namely that the researcher was actively aware of the choices made and their consequences (Bradbury & Reason, 2003). The researcher made every effort to use a grounded practice by maintaining an "open-minded" perspective in making appropriate decisions. As Mackey and Gass (2005) have pointed out, the challenge for the researcher is to provide careful descriptions of activities without unduly influencing the learning process in which the participants are engaged yet at the same time adapting practice accordingly to enhance that very process. The researcher reviewed the transcripts of tasks and made notes on the audio recordings transcripts to capture large amounts of rich data on participants' behaviour and actions. The researcher has retained the data in archived and scanned handwritten and computer-stored document files. Over time and with repeated observations the researcher gained a deeper understanding of participants and their interactions in context (Mackey & Gass, 2005).

The action researcher combined research with reflection on practice in a particular context. Therefore, the development of self-understanding in the researcher was an essential component because her perceptions, perspectives and values influenced the process of interpretation of the research. For this reason, the researcher kept a personal reflexive journal in addition to task observations and transcript notes. Following Somekh (2006), the quality of the action research was not to be affected by the researcher's presence as much as by careful research design and ethical sensitivity and reflexive inquiry into the research process.

3.6.6 Semi-structured participant interviews. Appendix C details the protocol that was observed in the selected semi-structured interviews. Key questions were directly linked to the research questions which explored the effects of the metacognitive strategies instruction, the

strategies used, how collaborative work contributed to their learning and reflecting upon their actions as a means of managing their learning. The recorded semi-structured interview was conducted at the end of the study in a person-to-person setting and consisted of eight open-ended questions which were asked in order to acquire more rich qualitative data from the participants. Responses to key questions were analyzed qualitatively and are reported in the results chapter.

Using semi-structured interviews allowed the researcher to investigate phenomena not directly observable when learners' self-reported perceptions and attitudes were used as data in the qualitative study (Mackey & Gass, 2005). Some of the questions were linked to responses on the questionnaires and subsequent researcher observations of the actions that were taken by the participants. A semi-structured interview approach allowed the interviewer to have a general plan for discussing the topics with structured questions, as well as open-ended questions about their experience. Following semi-structured interview protocols, no specific order had to be followed and the wording of any question listed in the interview protocol could be changed. For that reason, it was particularly suited to the research objectives in the qualitative data as it allowed for the flexibility that individual participants may need. In addition, it was important to provide clarity in the structure by having formulated clear interview protocols, to have made the interviewee as comfortable as possible, to have placed key questions in the middle of the interview, and to "mirror responses by repeating them neutrally" to provide opportunities for reflection and further input (Alber, 2011; Mackey & Gass, 2005). At the same time, if interviewees picked up cues from the researcher related to what they thought the researcher

wanted them to say, the quality of the data is compromised. Examples of this phenomenon are discussed in Chapter 4.

3.7 Data analysis and data reduction procedures

Three important issues in qualitative data analysis are credibility, transferability and dependability (Mackey & Gass, 2005). In order to establish credibility, the data collection occurred over a four-month period so that participants felt comfortable with the researcher and acted naturally. Credibility was further enhanced and ensured the quality of the data through triangulation which was achieved by collecting from numerous instruments employed in a variety of contexts and learning situations over time. In transferability, the research context was integral and it determined the extent to which the findings may be transferable to a similar context. For that reason, it was important to have "thick description" (p. 145), that is, representative examples, information about patterns, and an interpretation of meaning of the findings with respect to previous research. To establish dependability, the researcher fully "characterized" the context and relationships among participants (Mackey & Gass, 2005). Therefore, credibility, transferability and dependability contributed to the triangulation of the data, which further reduced the observer's or interviewer's bias and enhanced the accuracy of the information.

Data analysis procedures were designed to respond to the research questions previously presented in Table 3.2:

1. What metacognitive strategies do adult beginner foreign language learners use in technology-enhanced environment to complete learning tasks in Spanish?

2. How do learners apply instruction in metacognitive strategies to technology-enhanced learning tasks?

3. What are the effects of teaching metacognitive strategies on the beliefs, attitudes and level of confidence of beginner learners of Spanish as foreign language?

4. What is the impact of the action research on strategic language teaching practices?

Using an action research paradigm of mixed methods in this qualitative study, some of the data were collected and analyzed simultaneously. Data collected from the pre-treatment questionnaire was analyzed immediately for language learning attitudes and levels of confidence with technology. This information guided the in-class instruction, initial and ongoing communication with participants during the study and the post-treatment questionnaire construction, researcher observations and reflections and the design of the tasks themselves in multimodal environments.

Recorded interactions, reflections and interviews were transcribed and examined for the purpose of identifying common elements throughout the study and are reported in chapter 4 in Table 4.4. This task was accomplished through an initial open coding process to allow for categories or themes to emerge before more focused coding was attributed manually to the initial data analysis (Harklau, 2011; Leahy, 2008) based on the small sample size. Two coding methods were applied and are detailed in Table 3.2. A process coding method (Saldaña, 2013) was employed in order to identify themes that emerged from an examination of transcripts of recordings, participant reflections and researcher observations. In this method, themes were codified by using gerunds (asking for help, monitoring, collaborating, planning, etc.) to denote participants' metacognitive actions. A second coding method was employed using I*nVivo* coding, in which the participants' own words were used to capture themes related to the research

questions in the reporting of relevant data from participant interviews and post-task reflections (Saldaña, 2013). Therefore, there are two cycles of coding with the aim of discovering emerging themes that were directly related to the research questions. That is, evidence of actions by the participants that could be identified as metacognitive strategic actions. Reporting on the number of themes identified and codes presented are detailed in the Results Chapter 4.

3.8 Challenges to the research design

Initially, voice recordings were to be completed in dyads and triads in the *iLrn* online VoiceBoard or in the Connect/Record supplement. However, during the first cycle of tasks, it became apparent that there were problems within the institution's system when students were unable to do the voice recordings during the class time. The researcher had tested the system and had run a pilot with three students much earlier without any problem. The difficulty seemed to be caused by the numbers of students trying to access the site at the same time. As a result, students accessed all the information online and the researcher used the Voice Record Pro application on iPads which were set up with each participant group. This allowed the researcher to collect the data on the oral interactions. In addition, the final task was completed on Blackboard Collaborate to allow for synchronous communication and text chat, both of which were recorded.

3.9 Ethical considerations

As this action research took place in the practitioner-researcher's classroom with language learners as participants, the primary directive for ethical practice was to "do no harm" (Piper & Simons, 2005, p. 56). Therefore, each of the participants actively involved in the research study provided informed consent. The initial challenge was to establish rapport, which

encouraged participants to feel free, comfortable and able to contribute. In addition, participants were provided a clear framing of the inquiry task so that they felt a sense of purpose, and which allowed for a preparation phase for them to get to know the researcher. In the classroom, every effort was made to create a nurturing learning environment so that participants felt free to express any concerns, frustrations or to ask questions throughout the study. In order to open up the communicative space the action researcher attended to the emotional quality of the interactions (Wicks & Reason, 2009) with the learners.

Pseudonyms were used for any reported data so that participant identities were protected, and rigorous observance of the principles of confidentiality and anonymity were established. Ethical guidelines of both respected institutions, the university in Australia, and a college in Canada were followed. Adhering to the principle of respect for participants, they will be given the opportunity to read the research report so that they may comment upon it or add to it before it is made available to the public (Piper and Simons 2005).

3.10 Chapter Summary

The research design and action research paradigm adopted in the methodology were guided by the research questions presented in Chapter One and their expansion into relevant sub-categories to address the exploratory nature of the study. Each of the components of the study contributed to a more comprehensive understanding of the learners' developmental processes and learning experience with a focus on metacognition and learner autonomy. Data collection instruments were designed to gain insights into the development of metacognitive awareness, knowledge and strategies in iterative cycles which contained learner training, pedagogical tasks and reflections in technology-enhanced and multimodal environments. The

iterative action research (AR) cycles were detailed in the overview of the three stage design of the research in Table 3.1 which demonstrates the aspects of the cognitive tasks, metacognitive prompts, and researcher observations included in AR1, AR2, AR3, AR4. Table 3.2 outlines how the research questions are linked to the data collection instruments and the qualitative and quantitative analyses conducted in direct relation to the research questions. The expansion of those questions into sub-categories in Table 3.2a resulted in deeper exploration of the learner experience within the themes of the main research questions.

A key concept of the action research paradigm was that of doing research **with** rather than **on** people (Bradbury & Reason, 2003). The choice of this approach was particularly suited to a setting in which the researcher is also the practitioner who worked closely with the learners. What gives action research its credibility and trustworthiness is the iterative process in which each cycle of planning, action, observation and reflection informs the next for improvements, the collection of data for analysis in each cycle, and the analysis of the data to reveal the learner experience and the effectiveness of the practitioner-researcher's professional practice.

Learner training and relationship building were the focus of AR1, and these were initiated with a pre-treatment questionnaire as the first data collection instrument designed to determine the technological competency and the beliefs and attitudes about learning Spanish amongst the participants. Data collected from the questionnaire were analyzed both qualitatively and quantitatively. Learner awareness-raising training was carried out by the practitioner-researcher through in-class presentations, discussions and postings on Moodle. Multimodal practice tasks were done in-class and discussed as a whole class group post-task. Researcher reflections led to the design and context of subsequent Spanish learning tasks. As stated in the chapter, this action

research was “explicitly interventionist” (Burns, 2005) in that it was centrally located in the social context of the language classroom.

Through qualitative analysis the data collected provided a deeper and broader view of the learners’ behaviours, and as such, an emic approach was adopted to understand the reality of the participants by observing their experiences in action and embedding findings in them (Denzin & Lincoln, 2011) in subsequent cycles AR2, AR3 and AR4. The quantitative component of the study provided measurable information on the participants’ pre-treatment knowledge and post-treatment experience in the questionnaires. By converting codified themes identified in participant responses to the Likert-type scale questions and participant post-task reflections into percentages, quantitative data added to the knowledge about the participants’ experience.

As classroom-based action research, the language classroom setting adhered to the theory of qualitative research in which naturalistic inquiry and observation take place in the location of the activity studied. The eight participants were students of Spanish as a foreign language in a first year university transfer credit language course who had limited experience with the language prior to taking the course. Five students were in the 18-24 years age group and three were over 50 years of age, gender of seven females and one male.

The role of the researcher encompassed active and interactive engagement with the participants, tasks and contexts. As the action researcher, the practitioner takes on the defined role of active participant in the research process and as a resource facilitator (Stringer, 2014). Within that defined role, creating conditions that would encourage both participants’ language development and well-being in the TELL environment were essential for the study to elicit the

information that would provide insights into the learner experience. Orientation workshops conducted outside of class time over a two-week period for working with the online *iLrn* program, in-class practice activities and training as specified earlier in AR1, technological support and metacognitive-awareness sessions and post-task reflections contributed to the researcher's role of active participant and resource facilitator in the action research.

Data collection instruments were varied and numerous to establish rigour and add credibility to the results found. The pre-treatment questionnaire followed Johnson and Christensen's (2008) principles for questionnaire construction to create an instrument that would give reliable and complete information about the participants which would align with the research objectives. It included adapted questions from previously validated questionnaires. The post-treatment questionnaire was designed after the findings from data collected during the study to compare the perceived level of the participants in their technology competency and beliefs and attitudes towards their language competency. The comparative analysis is reported in the Results Chapter 4. Online metacognitive prompts were embedded in *iLrn* for post-task reflections which were recorded. These reflections followed interactive and collaborative tasks that were employed as data collection instruments and recorded for analysis. The tasks and prompts are detailed in Table 3.5. Semi-structured interviews were designed with key questions linked to the research questions and were recorded in a person-to-person setting with the researcher at the end of the study. The semi-structured design allowed the researcher to use both structured questions as well as open-ended ones about their experience and the learners' self-reported reflections. Finally, the researcher's observations and reflections guided the process from one action research cycle to the next and were an integral part of the study.

Data analysis and data reduction procedures were followed from numerous data sources collected over a four-month period. A variety of collection instruments employed in a variety of contexts and learning situations over time enhanced the credibility and dependability of the data analysis. The procedures followed were designed to respond to the research questions previously presented. A process coding method (Saldaña, 2013) was employed in order to identify themes that emerged from the transcripts of recordings, participant reflections and researcher observations. Themes were codified by using gerunds to denote incidences of participants' metacognitive actions. A second coding method of *InVivo* was used to capture themes related to the research questions using the participants' own words.

Challenges to the research design related to the unreliability of the institution's internet and Wi-Fi connection system for completion of some voice recording tasks. To avoid this, in some cases iPads were used with uploaded applications for voice recording.

Following the primary directive for ethical practice to "do no harm" (Piper & Simons, 2005, p. 56), study participants provided informed consent and were given a clear framing of the inquiry task so that they felt a sense of purpose and valued for their contribution to the research. In the classroom, every effort was made to create a nurturing learning environment so that participants felt free to express concerns or frustrations or ask questions during the study. Participants identities were protected by using pseudonyms and all ethical guidelines of both USQ and Okanagan College were followed.

CHAPTER 4 RESULTS

4.1 Overview

This chapter provides the results of analyzing the data and reviewing the method. In reporting the outcomes from the data collection, a general summary of the action research instruments outlined in Table 3.3 in the previous chapter and as illustrated in Figure 4.1, precede the findings summary that is organized to follow the sequence of the research questions. The summary includes results from relevant subcategories to the research questions that were observed during the study. Following the findings summary, the chapter sequence follows the data collected in each of the Action Research cycles across the three-month period of the study. The results are presented both collectively and individually as they relate to the responses of the three participant groups and members within the groups. Researcher observations, reflections and subsequent actions are included in each of the corresponding Action Research cycles.

Following the conceptual framework of the study, metacognitive awareness, knowledge and strategies were presented by the researcher in her own classroom in a first year Spanish course taught from a social constructivist pedagogical approach. Observations and recordings of the eight participants in the study while they were working on specific online and multimodal tasks in pairs or groups of three or four in each of four action research (AR) cycles are reported in Table 4.4 Individual post-task reflections upon their work are reported through online metacognitive prompts in Table 4.4. Both participant and researcher reflections in each of the AR cycles informed the content of each succeeding cycle. Participant reflections revealed their perceptions regarding their use of metacognitive strategies in carrying out the multimodal tasks in Table 4.4. The reflections were also used to provide the researcher with information to better

assess if there was a need for further learner support and preparation before progressing to more complex blended and online tasks in subsequent action research cycles. Results from the pre-treatment questionnaire, post-treatment questionnaire, participant audio recordings and reflections for each action research cycle, and selected interviews are presented under separate headings. Researcher observations are presented in Table 4.4 under Section 4.7 and are included in the presentation of results for each action research cycle. *Figure* 4.1 provides an overview of the data categories reported in each action research cycle:

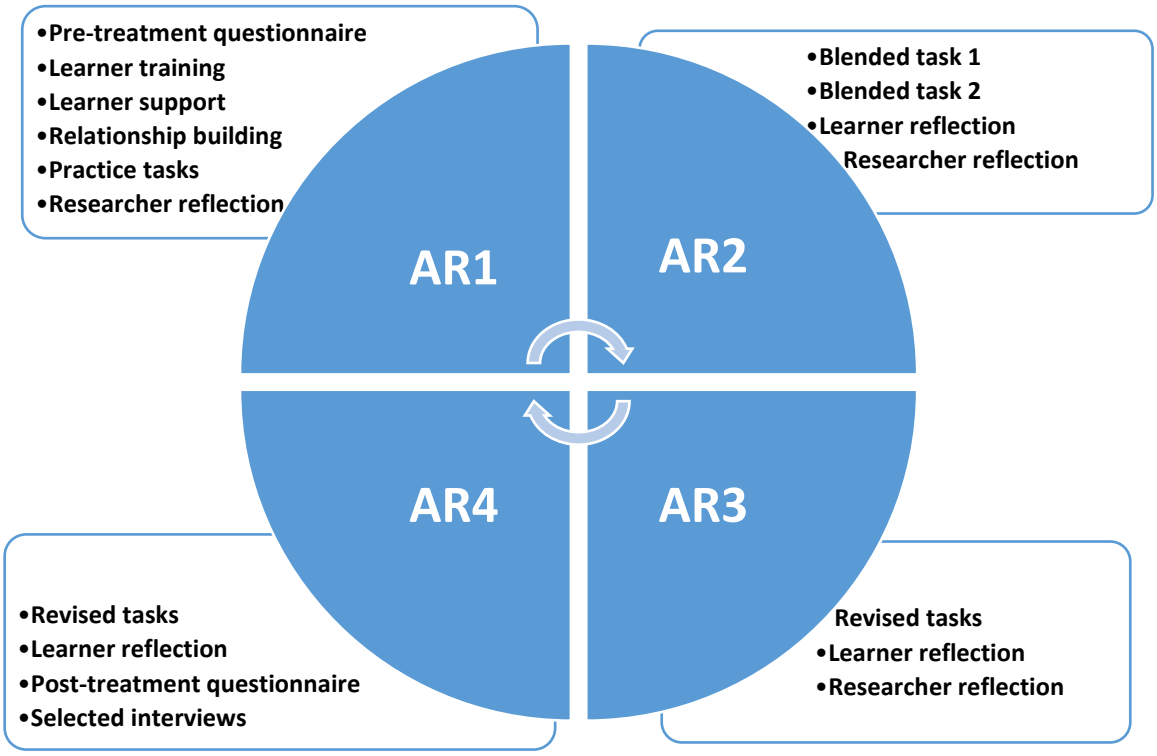


Figure 4.1. Overview of the four Action Research cycles and results reporting in each cycle AR1-AR4.

4.2 Findings Summary

The data consisted of a rich source of information about the specific strategies participants used when working in technology-enhanced environments as beginner adult

language learners of Spanish and the link, or lack thereof, to the strategic instruction received in the classroom. There was evidence of increasing levels of confidence and decreasing levels of anxiety reported in the post-task reflections. These also revealed, in some cases, an increased ability to identify individual strengths and challenges, and self-regulating strategies suggestive of the development of metacognitive awareness and knowledge.

Participant responses from the pre-treatment questionnaire shown in Figure 4.2 and Figure 4.3 and the post-treatment questionnaire shown in Figure 4.4 and Figure 4.5 also demonstrated a perceived increase in self-confidence and competency both in language learning ability and in the use of technology to assist their learning. Recorded transcripts of participant interactions during pair and group tasks provided examples of metacognitive processing through language related episodes (LREs) which over the AR cycles became more focused on the appropriate uses of Spanish and meaning-making in the Spanish dialogues. The research questions were addressed by the use of one or more of the data collection instruments, and a summary of the findings for each of those questions and for their sub-question expansion, is included here with links to the corresponding section in the chapter.

1. What metacognitive strategies do adult beginner foreign language learners use in technology-enhanced environment to complete learning tasks in Spanish?

2. How do learners apply instruction in metacognitive strategies to technology-enhanced learning tasks?

3. What are the effects of teaching metacognitive strategies on the beliefs, attitudes and level of confidence of beginner learners of Spanish as foreign language?

4. What is the impact of the action research on strategic language teaching practices?

4.2.1 What metacognitive strategies do adult beginner foreign language learners use in TELL to complete learning tasks in Spanish? Blended and online tasks were completed by the learners communicating, interacting and collaborating in pairs or groups of three with results reported for each of the action research cycles in Section 4.3, Section 4.4, Section 4.5 and Section 4.6. Table 4.4 illustrates results from the researcher's observations of strategic behaviour for each of the participants.

Analysis of the audio transcripts carried out using process coding in Table 4.4 revealed that learner interactions included examples of *planning* how to approach the task, *deciding* what language forms and vocabulary to use, *monitoring* the grammar and vocabulary for accuracy and for meaning-making. Interactive strategies included *asking for help* from peers and the instructor, followed by *thinking aloud* while listening to others' input to check for either pronunciation of vocabulary or grammatical accuracy. Over the cycles, evidence of a focus on *self-regulation* began to emerge amongst three of the learners through their online *metacognitive reflections* and the recorded collaborative interactions in the blended tasks included in the study, as well as their use of technology (cell phones and laptops) to *access external resources* to aid them in completing the learning tasks.

How do they decide which strategies to use? The participants did not reveal any conscious decision-making about which strategies to use in the tasks, but researcher observations and analysis in Table 4.4 revealed a consistently repeated process over the different tasks of *preparing, planning, monitoring,* and, in some cases, *evaluating* actions they were taking in order to complete the assigned tasks. Samples of the dialogues presented in the corresponding action research cycle revealed self-questioning by interacting with group members and asking

for help. Findings from these group interactions are presented and analyzed in each corresponding Action Research cycle reported in Section 4.3, Section 4.4, Section 4.5, and Section 4.6 this chapter.

What role does task type play in their choices? Data analysis of the transcripts of group interactions in certain tasks suggested that task type impacted group dynamics. For example, analysis of audio transcripts from group two showed few instances of LREs or metacognitive processing, and participants used their first language (L1) and translation to create a dialogue in Spanish with limited interaction among members of the group. On the other hand, analysis of audio transcripts from the other two groups revealed that they were highly attentive to the creative context, with participants interacting, and monitoring their use of Spanish throughout the activity. Presentation of these results are included in the corresponding action research cycles in Section 4.4, Section 4.5, and Section 4.6 later in the chapter. A comparison of the metacognitive reflections shown in Figure 4.4 and Figure 4.5 on each of the blended or CALL tasks demonstrated increased attention to monitoring, self-regulating and seeking resources over the cycles independent of the task type.

What role do individual learning styles play in strategy choices? Effects of learning styles on strategy choices could not be determined from the results of the action research cycles and may require further research that is more focused on this aspect of strategic choices. For example, group two did not produce many LREs, negotiation of meaning or interactions in Spanish during the planning of tasks making findings regarding preferred learning styles and strategy choices impossible to determine. Interview data reported under section 4.10.1 revealed that one participant from this group (Bev) self-identified as a preferred solitary learner, while

another participant in the same group, Dawn, reported in the online metacognitive reflection shown in Table 4.4 that her preferred higher level of engagement made working together difficult in this group. It could be that the differences in learning styles created a group dynamic which had a negative effect on the strategic choices they made.

Do the learners' strategies change over time? If so, how and over what time period? Analysis of the audio transcripts of participant interactions in the tasks revealed that over the three month period of the study there was an increased ability to focus on the task. Two of the three groups had fewer off-task interactions in action research cycles 3 and 4 than during the first action research cycle interactions. Results from the audio transcripts regarding learners' strategies are reported under the corresponding action research cycle sections of this chapter under Section 4.3, Section 4.4, Section 4.5, and Section 4.6.

4.2.2 How do learners apply instruction in metacognitive strategies to technology-enhanced learning tasks? Participants made no overt reference to any in-class or Moodle course pages regarding learning strategies while carrying out tasks and post-task reflections. Whereas researcher observations reported in Section 4.8, revealed that instructor support had an impact on the students while they were completing tasks as presented in Table 4.4. It may be that the instruction had an impact which was not consciously identifiable by the participants.

Is there a relationship between the strategies used in multimodal environment and the in-class awareness-raising tasks? While there were instances with some participants applying strategies in the online environment such as seeking external resources (see Table 4.4), participants did not mention the in-class awareness-raising tasks (as in Appendix D) nor did they reference Moodle postings (from Appendix F). There was no evidence in the participants' actions

in a multimodal environment to demonstrate an awareness of the connection between in-class ***awareness-raising tasks*** and Moodle references.

How do learners identify those strategies in post-task reflections online? In Table 4.4 post-task reflections of the participants showed that they were able to identify key factors for their success in carrying out the tasks, as well as identify the challenges which hindered the interactions. Strategies such as planning for the learning and for task completion, checking with peers and monitoring their Spanish constructions were evident in both the blended environments and in the interactions in *Collaborate* and examples are reported in the corresponding action research cycle sections in Table 4.4. In some cases, challenges were caused by breakdowns in the technology in action research cycle 2 reported in Section 4.4.

What preferred strategies emerged that were different from face-to-face interactions? In the face-to-face environment, most participants did not hesitate to ask for help from the teacher and took time to plan their approach to the assigned task. There were no indications from the researcher observations of a different set of strategies being used online from face-to-face tasks, but there was a greater reliance on electronic supports such as electronic dictionaries accessed through mobile applications or the e-books while working in the *iLrn* environment. Some students relied on access to the printed textbook in both environments while others used their smart phones and electronic books and resources to complete the tasks. Examples from the blended learning environment are given in the results section for each corresponding action research cycle in Section 4.3, Section 4.4, Section 4.5 and Section 4.6.

4.2.3 What are the effects of teaching metacognitive strategies on the beliefs, attitudes and level of confidence of beginner learners of Spanish as a foreign language? Results reported

from the pre-treatment questionnaire in Figure 4.3, Section 4.3 and the post-treatment questionnaire in Figure 4.7, Section 4.6 revealed that most learners began with higher levels of anxiety and decreased levels of confidence than following the Action Research cycle 4. They increase their ability to monitor the learning, manage the demands of the tasks and build self-efficacy.

What is the relationship between self-awareness and self-efficacy? To explore this relationship in participants, the pre- and post-treatment questionnaires and post-task reflections included questions related to perceived levels of competence with technology, confidence and belief in language learning ability. Responses of participants to the pre-treatment questionnaire illustrated in Figure 4.3, and the post-treatment questionnaire illustrated in Figure 4.7 and the post-task reflections shown in Table 4.4, revealed increased levels of confidence in working with technology and in their ability to accomplish the learning tasks. Descriptions and detailed results are reported in the chapter sections for each of the Action Research cycle.

Do affective filters become less active? Audio transcripts revealed that over the three month period of the study and with experience in the multimodal environments, and increased interactions with peers, there was evidence of less focus on feelings of frustration, anxiety or embarrassment and more focus on accomplishing the task. The fact that participants knew they were being recorded appeared to have no negative effect on their focus or their willingness to engage with their peers to complete the tasks according to the analysis of the audio transcripts of interactions in AR3 and AR4 reported under Section 4.5 and Section 4.6 respectively. Furthermore, participant post-task reflections in Table 4.4 for the AR4 cycle focused on strategies used to manage the task with no reporting of challenges or feelings of anxiety.

Do learners use more strategies if they feel more confident or less confident? Results from the beliefs and attitudes and strategies sections of the questionnaires presented in Figure 4.3 and Figure 4.7 and post-task reflections in Table 4.4 revealed that for some participants increased confidence in using the technology and interacting with partners for learning Spanish provided evidence of developing learner autonomy and the use of metacognitive strategies for completing tasks. No comparison was made between the numbers of strategies used in each of the action research cycles, but results presented in Figure 4.4 and Figure 4.5 demonstrated a shift in the types of strategies reported by participants over time.

What behaviours indicate developing learner autonomy? Excerpts from the participant post-task reflections, which are presented in their entirety in Table 4.4 later in this chapter, demonstrate an awareness of learning and their ability to describe how they manage their learning in response to the metacognitive reflective prompts in the iLrn environment through their own words as illustrated below:

- "learned how to manoeuver around others doing the task at hand" Laura (post-task reflection - AR4)
- "being able to talk made it faster and there was less possibility of getting frustrated" Sarah (post-task reflection – AR4)
- "brainstormed" and "collaborated" Ingrid (post-task reflection – AR4)
- "paying attention and staying focused was key to getting our objective complete" Kyle (post-task reflection – AR4)
- "we seeked (original text) out resources that enabled us to find answers to any potential questions we came across" Sarah (post-task reflection – AR3)
- "I learn by doing, not reading." Carol (post-task reflection – AR4)
- "listening to others talk…was helpful" Carol (post-task reflection – AR4)
- "we allowed for a comfortable environment" Laura (post-task reflection – AR3)

In addition, results from the selected interviews reported in Section 4.10 illustrate an increased level of self-awareness and developing autonomy as in this excerpt from Sarah's interview:

Um, I think I found in Spanish that I relied a lot on dictionaries the first semester… and a lot of this semester, but one time I was stuck without a dictionary and I was just, it took a lot longer ***but I realized if I thought about it and figured it out, I had the skills to actually do it*** *which was my …****oh I've just been selling myself short, like I can do this…*** **(bold face mine)**

4.2.4 What is the impact of the action research on strategic language teaching practices?

Analyses of the pre-treatment questionnaire and each subsequent action research cycle had the effect of altering the action researcher-practitioner's task design and the decisions she made regarding learner preparation, support and expectations for learning outcomes. Researcher observations and actions as they relate to the research question are reported later in the chapter and discussed in chapter 5.

4.3 Findings from Action Research Cycle 1 Questionnaire (AR1)

Two areas of participants' perceptions were explored in the administration of the pre-treatment questionnaire shown in **(Appendix A)**: one was to determine their perceived level of competency and confidence using various technologies, and the second, to gather information regarding their attitudes and beliefs about learning Spanish. Results from participant responses in AR1 regarding competency in the use of technology established a baseline at the beginning of the study and provided guidance for the amount of training, support and guidance necessary to facilitate the Spanish language learning in the multimodal environments using *iLrn language learning software and e-language lab, Moodle learning management system and videoconferencing tools.* The questionnaire also contained a data collection instrument to

determine the level of confidence, as well as beliefs and attitudes towards learning Spanish. This information informed the steps taken in AR1 to lead participants into the next cycle AR2. Results from the pre-treatment questionnaire assisted the researcher in determining the amount of training, support and guidance necessary to build self-confidence and acquire the metacognitive strategies which participants could then employ to manage their own learning.

4.3.1 Technological competency (Q5). Analysis of the data collected from the questionnaire measured participants' reported levels of confidence in using a variety of technological tools: computer, e-book, electronic language lab, the Internet, *Moodle*, *Skype*, voice recording, and language learning software. Participant responses are presented graphically in Figure 4.2 below:

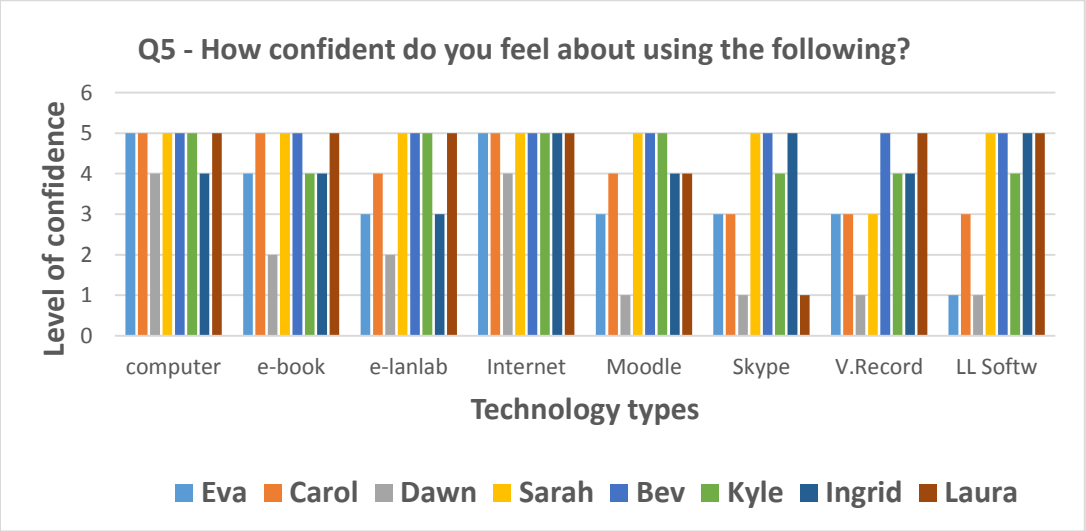


***Figure 4.2*. Responses to question 5(Q5) on levels of perceived technological competence –pre-treatment questionnaire.**

Note: Level of confidence scale: 1 = don't know, 2 = not at all confident, 3 = not very confident, 4 = somewhat confident, 5 = very confident

The response data reported in Figure 4.2 were then quantified by converting them into percentages shown in Table 4.1:

Table 4.1 – pre-treatment questionnaire (Q5) percentage conversions of levels of confidence in using technology from Figure 4.2

	computer	e-book	e-lanlab	Internet	Moodle	Skype	V.Record	LL Softw
Eva	5	4	3	5	3	3	3	1
Carol	5	5	4	5	4	3	3	3
Dawn	4	2	2	4	1	1	1	1
Sarah	5	5	5	5	5	5	3	5
Bev	5	5	5	5	5	5	5	5
Kyle	5	4	5	5	5	4	4	4
Ingrid	4	4	3	5	4	5	4	5
Laura	5	5	5	5	4	1	5	5
Level of Confidence	**100%**	**87.50%**	**62.50%**	**100%**	**75%**	**50%**	**50%**	**62.50%**

Level of confidence scale:
1 = don't know, 2 = not at all confident, 3 = not very confident, 4 = somewhat confident, 5 = very confident

All eight participants reported high levels of confidence (very confident or somewhat confident) in using computers and the Internet, while six participants reported higher levels of confidence (very confident or somewhat confident) in the use of Moodle. Confidence levels dropped significantly in the use of other technological tools used for language learning in multimodal environments. In addition to the graphical information regarding participant experience or confidence using technological tools, other questions on the pre-treatment questionnaire were designed to identify any previous language study and the context in which it had occurred.

Seven participants reported having studied another language previously (French is one of the official language of Canada, and most students would have studied it at various points during their K-12 education). Yet when asked on the pre-treatment questionnaire, "Which, if any, of

these technological tools have you used in your previous language study?", only two participants, Bev and Kyle, reported some previous use of an electronic language lab and voice recording.

Dawn reported low levels of confidence in technology use (not at all confident) for the categories of e-book and electronic language lab, and reported "don't know" for Moodle, Skype, voice recording or language learning software. The pre-treatment questionnaire revealed that her experience had been limited to basic use of a computer and the Internet. This becomes significant when comparing her responses about technological confidence in the post-treatment questionnaire, the reporting of which will be addressed later in this chapter.

Carol, Eva and Sarah reported feeling "not very confident" about voice recording, and both Carol and Eva did not feel confident about using Skype or language learning software.

Participant responses to the pre-treatment questionnaire regarding level of confidence in using a variety of technological tools indicated that ongoing support and training were necessary in order to increase participant competencies so that they could feel comfortable working in multimodal environments for their language learning. The use of the pre-treatment questionnaire demonstrated that while participants were all very confident with using a computer and searching the Internet, there was limited knowledge and experience in using technological tools for language learning.

That said, question 6 (Q6) on the pre-treatment questionnaire in Appendix A asked "What do you think are the reasons for using technology in language learning classes?" Responses recorded in Table 4.2 indicate participants' awareness of the value that mixed modes and online tools provide in terms of enhancing the learning experience through ease of access, being more time efficient, and allowing for more immediate feedback.

Table 4.2 participant responses to Q6 – pre-treatment questionnaire

Eva	-to practice the oral language – i.e. speaking or pronunciation - to reinforce concepts learned in class - to practice using concepts learned in class & review
Laura	Everyone learns in a different way. By using technology in language learning it *makes the experience easier*.
Ingrid	- more *interactive learning* - better way to give *feedback* - more *time efficient* & can get more done
Kyle	to allow one to hear how to properly use an accent in a language and to allow *greater information* to be spread in a *shorter amount of time*
Bev	- native speakers are great for sound - *ease of accessibility* - *own pace* - less paper - distance learning
Carol	practice what you are learning, *more time to practice*
Dawn	to get more active engagement on the part of the student & *speedier feedback*
Sarah	*Easy access* to a lot more resources such as online tools, *interactive* learning techniques and games one individual can utilize at any time (in class or at home) *immediate feedback*.

4.3.2 Beliefs and attitudes towards learning Spanish as a foreign language. Figure 4.3 shown below illustrates the responses from participants to question 7 (Q7) of the pre-treatment questionnaire designed to determine their perceptions about language learning in general and their abilities to learn Spanish as a foreign language specifically related to the course. As stated earlier in this chapter, analysis of the responses was used to aid in the design of the strategic instruction activities in the classroom and in determining the amount of training and support that would be needed initially. Responses were given according to a Likert type scale from 1 to 5 with "strongly disagree" (SD) as 1 and "strongly agree" (SA) as 5:

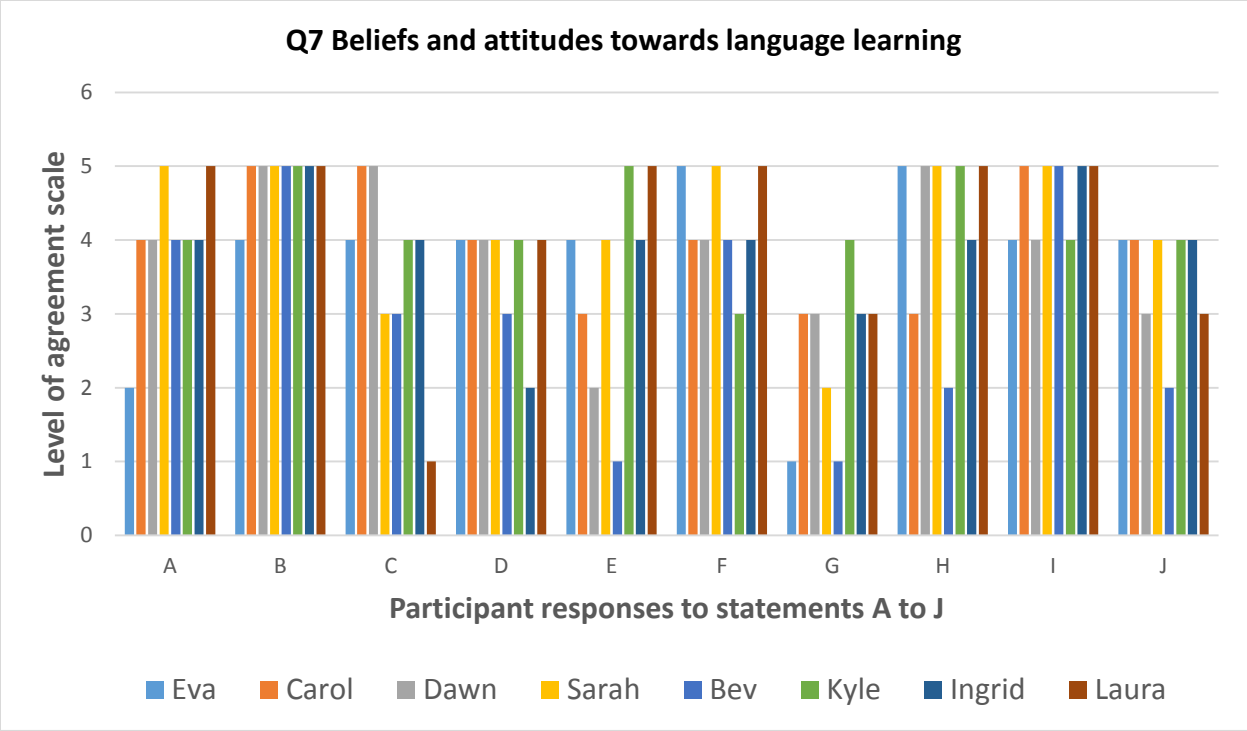


Figure 4.3 **Responses to question 7(Q7) on their perceptions and beliefs in language learning pre-treatment questionnaire**

Level of agreement scale:
1 = (Strongly disagree), 2 = (Disagree), 3 = (Neither agree nor disagree), 4 = (Agree), 5 = (Strongly agree)
Beliefs and attitudes pre-treatment questionnaire Q7 guide to responses:
A. It is important to speak Spanish with an excellent pronunciation
B. I enjoy (or would enjoy) practicing Spanish with native Spanish speakers
C. It is OK to guess if you don't know a word in Spanish
D. I feel shy speaking Spanish with other people
E. It is necessary to learn about Spanish-speaking cultures in order to speak Spanish
F. It is important to practice with audio and video materials such as videos of speakers of Spanish, music recordings and podcasts
G. It is easier to speak than understand a language
H. It is easier to read and write Spanish than to speak and understand it
I. I believe I can learn a foreign language
J. I enjoy learning with partners

Table 4.3 (Q7) pre-treatment questionnaire – percentage conversions on beliefs and attitudes shown in Figure 4.3

	A	B	C	D	E	F	G	H	I	J
Carol	4	5	5	4	3	4	3	3	5	4
Dawn	4	5	5	4	2	4	3	5	4	3
Sarah	5	5	3	4	4	5	2	5	5	4
Bev	4	5	3	3	1	4	1	2	5	2
Kyle	4	5	4	4	5	3	4	5	4	4
Ingrid	4	5	4	2	4	4	3	4	5	4

Laura	5	5	1	4	5	5	3	5	5	3
Carol	4	5	5	4	3	4	3	3	5	4
Dawn	4	5	5	4	2	4	3	5	4	3
Level of Agree	**100%**	**100%**	**62.5%**	**75%**	**50%**	**87.5%**	**12.5%**	**62.5%**	**100%**	**50%**

Level of agreement scale:

1 = (Strongly disagree), 2 = (Disagree), 3 = (Neither agree nor disagree), 4 = (Agree), 5 = (Strongly agree)

A. It is important to speak Spanish with an excellent pronunciation
B. I enjoy (or would enjoy) practicing Spanish with native Spanish speakers
C. It is OK to guess if you don't know a word in Spanish
D. I feel shy speaking Spanish with other people
E. It is necessary to learn about Spanish-speaking cultures in order to speak Spanish
F. It is important to practice with audio and video materials such as videos of speakers of Spanish, music recordings and podcasts
G. It is easier to speak than understand a language

The two most significant points of agreement occurred in response to the statements "I enjoy (or would enjoy) practicing Spanish with native Spanish speakers" and "I believe I can learn a foreign language" in that all eight participants either agreed or strongly agreed with the statements.

On the other hand, only one participant disagreed with the statement "I feel shy speaking Spanish with other people". These data suggest that while participants may state that they have the desire to communicate in Spanish and believe that they can learn to do so, they do not feel confident about attempting to speak at this stage in their Spanish language development. This is further supported by the agreement amongst participants (7/8 or 87.5%) with the statement that "it is important to speak Spanish with an excellent pronunciation". In other words, participants' responses suggest a belief that it is necessary to acquire a certain level of proficiency in the language before interacting in it. Responses to the statements "it is easier to speak than understand a language" (37.5% agree) and "it is easier to read and write Spanish than to speak

and understand it" (75% agree) would support participants' beliefs in the level of difficulty of speaking a language over reading or writing it.

In terms of beliefs about the modes of instruction and practice with the language, almost all participants (7/8 or 87.5%) responded that "it is important to practice with audio and video materials such as videos of speakers of Spanish, music recordings and podcasts". These results lie in contrast to the majority of participants (6/8 or 75%) who responded in section 1 of the questionnaire that they had never studied language using any type of technology. One interpretation of these responses is that there is a desire to use electronic materials for language learning even though almost none of the participants had had experience doing so. This would again indicate the existence of awareness and understanding that other modes of learning and instruction may be useful for their language learning. This interpretation is supported by the responses to Q6 of the pre-treatment questionnaire shown in Table 4.1 in which participants reported several examples of potential benefits for using technology in language learning classes indicating a positive attitude towards, and belief in, multimodal learning.

4.3.3 Learner training and learner support. The classroom-based action research paradigm upon which the research design is based had two purposes, one to enhance the learner experience and the other to inform professional practice. Results from the pre-treatment questionnaire regarding levels of technological competency and confidence represented in Figure 4.2 demonstrated that while learners had experience and understanding of the uses and advantages of technology, they were limited in their competency and knowledge for using it for the purposes of language learning. Figure 4.6 illustrates results from the post-treatment questionnaire Q1 which demonstrate increased levels of confidence using technology tools for a

variety of language learning purposes by the end of the study and are presented in action research cycle 4.

Researcher actions in AR1 after administering the pre-treatment questionnaire included outside class orientation sessions or individual instruction on navigating *iLrn,* in-class practice activities in *iLrn,* face-to-face and using open educational resources (OERs) sites. In addition, ~~addition~~, providing consistent and continuous support throughout the study established a relationship of trust in which learners knew they could count on me as both a source of support and information.

Prior to the course beginning, the researcher had tested headsets and microphones on tasks within the online learning program *iLrn*, and on other open educational resource sites (OERs) to make certain that the tools could interact correctly. Unfortunately, the first part of the study was fraught for some time with technological malfunctions within the online environment, such as inconsistent access to Wi-Fi and blocked access in some cases due to institutional security settings for student use of college computers. The researcher had tested the hardware using an instructor log-in, unaware that students had restricted access even though the tools had been checked with the institution's IT staff. These challenges to the learner training and support and to completion of online tasks did cause unanticipated adjustments to be made to subsequent action research cycles tasks and modes for learning and are reported in each cycle in this chapter.

4.4 Findings from Action Research Cycle 2 (AR2)

Observations from practice tasks attempted in AR1 and the initiation of AR2 indicated that slow technology access and breakdowns affected learner frustration and contributed to a

decreased confidence in the technology-mediated foreign language learning environment for a period of time. In addition, not all participants were able to complete all designed tasks. Researcher observations and participants' feedback indicated that the time constraints in the tasks had increased reported anxiety and created additional challenges to completing the tasks. For example, one task "la fiesta de sorpresa" in AR2 had to be completed in face-to-face interactions for some participants because the *iLrn Voiceboard* chat line access was not consistent amongst the student computers. In one class only one pair of participants were able to use the text application in the *iLrn Voiceboard* but not the interactive audio component. One group was able to connect the audio but not to record. In the other task "mi familia", internet access was available for the online listening activity on an OER, but participants were not able to use the voice recording tool in the *iLrn* environment to make their own recordings about family and therefore were unable to complete the task as designed by the practitioner-researcher.

4.4.1 Challenges and observations in AR2. The challenge of encountering technological unreliability for mixed modes of learning was expressed by the researcher as frustration in viewing the task as a "complete fiasco trying to use Voiceboard in class … connection problems again!" Although the researcher's frustration was not expressed to the students, their frustration was evident when they attempted to do the proposed task. In an effort to reduce that feeling, the researcher modified the task to accommodate the lack of technology. As a result, these adjustments took more class time, thereby limiting the amount of time students had for processing and completing the task. As a practitioner-researcher conducting classroom-based action researcher in her own classroom, there is the additional challenge of making immediate

adjustments in the tasks in order to achieve an acceptable level of Spanish language learning processing for the students.

In both participant reflections and researcher observations for AR2 tasks, the major factor challenging participants and the task completion was the lack of time. Due to the slowness of the technology it took nearly thirty minutes of class time trying to connect the students to the online site and attempt to connect with each other, which meant that there was less time to do the actual tasks. Observations of the participants in this study revealed tensions and increased levels of stress due to the time spent on the technology issues and also to complete the tasks. The negative impact of the time factor and the stress of technological malfunctions were expressed the participants' response to the online embedded metacognitive prompts uploaded to the *iLrn* program and recorded as post-task reflections in the AR2 cycle. Responses to the AR2 metacognitive prompt reflection questions (*"Did you use any strategies that you can identify to help you complete the task? (for example: planning, preparing, monitoring the task as it went along, checking your plan) What was most difficult?"),* were somewhat limited online. Group 1 participant Kyle reported his frustration verbally immediately after the class that there was not enough time, and participants Dawn and Eva from Group 3 were unable to use the technology at all, so they did not post any response online.

On the other hand, Group 1 participants Ingrid, Laura and Sarah were able to use some aspects of the technology but not to record their interactions. They reported a limited level of engagement with the *iLrn Voiceboard* and each other in both positive and negative ways by addressing the metacognitive prompts as follows:

Ingrid	*We kept going back and checking what we were writing about made sense. We said all our ideas right away and what we were going to eat, do, (etc.), then we decided what order how to word everything. The most difficult thing was starting the conversation and trying to plan when not sitting right next to the person.*
Laura	*The most difficult was that I was unable to hear my partner. We did plan by asking each other questions and having the other person respond.*
Sarah	*It was difficult not being able to talk to my partner in person but other than that the task was easy. We brainstormed some ideas, figured out what we wanted to say and then created a script.*

Group 2 and Group 3 participants were not able to access the Internet, their e-textbooks and online dictionaries, so the researcher changed their activities to face-to-face interactions with printed handouts and the online components they could use instead of trying to do recordings in *iLrn.* Therefore, there are no participant interaction recordings for this cycle. On the other hand, researcher observations of Groups 1, 2, and 3 indicated that participants were comfortable interacting with partners, using Spanish and the tools that they could access to complete the adapted tasks.

Within the same class period, observations were that participants set aside the challenges and frustrations with the technology to focus on the task at hand. The training spent in AR1 allowed participants to overcome any obstacles in order to work on their language skills. The researcher observed and noted numerous interactions amongst the participants, as many wrote notes and checked with partners on their language accuracy. Their reporting indicated a level of

comfort and confidence in the classroom environment, and in working with their peers. There was limited use of metacognitive strategies such as planning and monitoring, building from the training and support in the AR1 cycle.

Throughout the course, the learners were required to complete independent study tasks assigned on *iLrn* for individual practice with structures, vocabulary and cultural videos. All participants in the study completed these tasks outside normal classroom hours and reported no technological problems. That said, individuals were not using *Voiceboard* at all from their home computers as is evidenced in the tracking of student activity on the *iLrn* site. In other words, individuals working on their home computers did not report any difficulty accessing the activities, but neither were they using the tools, which they had found to be too challenging to use in the college classroom.

4.5 Action Research Cycle 3 (AR3)

Having studied the results from AR1 and AR2, the researcher looked for tools that could be user-friendly for the learners in both technological and language learning aspects for AR3, as well as appropriate for the design of the interactive tasks for the study. At this stage in the AR cycles, the participants were interacting comfortably in pairs and groups. For this cycle, iPads were used and the application VoiceRecord Pro was installed on them for recording pair and group interactions in the assigned in-class multimodal tasks. The participants responded positively to the use of iPads to overcome the technology problems encountered in AR Cycle 2. In preparation, the participants used the iPads for practice in-class activities prior to the research task, and this process was observed to decrease anxiety and increase confidence in using the

tool. In consideration of the challenge of the time factor in AR2, the researcher added extra time for AR3 tasks. This additional time reduced student anxiety somewhat and participants were able to successfully complete the interview and the role play.

One of the research tasks from AR2, the interview task, "la rutina diaria" was moved to the AR3 cycle in order to be able to record participant interactions with the aim of maximising the number of language learning strategies and/or samples of metacognitive processing.

4.5.1 "La rutina diaria" – AR2/AR3 interview task. For this task in Spanish, the participants interviewed one another about their daily routines. Questions for this task were provided in the iLrn environment and groups worked together to create an interview in Spanish as they worked out what possible answers could be through collaborative interactions. Transcripts of the iPad – VoiceRecord Pro recordings during this task demonstrated numerous examples from participants of specific groups in *planning* for the task, *asking for help* or feedback from peers, *monitoring* of the accuracy of their responses and *collaborating* to complete the task. The processing often occurred through LREs which served to clarify the meaning and increased the accuracy of their responses. One example of this type of interaction is observed in the following exchange among Group 1 participants Ingrid, Laura and Kyle (Sarah absent):

Ingrid: So would I answer this? Um Oh Like would I answer "*prefiero me sentar*?"
Laura: *Sí, prefiero sentarme.*
Ingrid: *Sentarme?*
Laura: Yeah, 'cause this one would be the conjugated verb and you don't conjugate the second one.
Ingrid: Right
Laura: and then it's "me" because you're talking about yourself…at least that's what I'm assuming.
Ingrid: Yeah
Laura: What is "*pruebas"*? p, r, u, e, bas (spells it out)

Kyle: What's that?
Laura: (points to her screen) Um, that one…
Kyle: *Pruebas*…to try on, I think
Laura: To try on "*la ropa antes de comprar*" – Do you happen to know what 8 is?
Ingrid: Uh, 8 is, *siempre te pruebas la ropa antes de…*
Kyle: to buy…so, *comprarla* would be to buy it
Ingrid: *Prueba*…do you always ask questions
Kyle: Oh, that's "questions"?
Ingrid: before you buy your clothes…it's probably…it'd be like ask her…
Kyle: Are you sure that's "questions"?
Ingrid: *Prueba…*
Laura: *Preguntas* (researcher note: Laura realizes that she had confused the word *prueba* with *pregunta*)
Ingrid: *Pregunta!*
Kyle: I think it's "do you always try on your clothes before you buy them"
Ingrid: Um…yeah, that makes more sense.

In another exchange, Laura monitors the strategies that her partner Ingrid is using and uses this peer monitoring to reflect on her own strategy use:

Laura: *So, are you writing out all the questions?*
Ingrid: *Sorry?*
Laura: *You're writing out all the questions*.
Ingrid: *That's how I learn*
Laura: *No, really, that's…I really should do that more*.

Throughout this AR3 task, and as presented in the above exchanges, Group 1 participants interacted, planned and prepared for completing the task, monitored their Spanish language use and sought help from peers as they needed it. As the researcher was conducting the study during regular classroom time, the absence of two of the participants necessitated the re-configuration of the groups according to who was present when the tasks were being recorded. For that reason, later cycles may have different members participating in the interactions but still be shown as group 1 or 2. In each case, every effort was made to group participants within their classes.

Group 3 participants were from another class and were the only ones in the study from that pool of students, so their interactions were consistent throughout the study. Of the eight participants in the study, results from the transcripts for these three Group 3 participants indicated a group dynamic contrary to Groups 1 and 2. These included lengthy interactions between Bev and Dawn as Dawn explained grammar structures to Bev who appeared confused about the target language questions on the interview task in *iLrn*. These explanations took up most of the time on the task with little interaction from Eva. Therefore, there were no examples in the transcripts of metacognitive processing or the use of strategies other than one member asking another for help with explanations of structures throughout their exchanges. These exchanges were classified as LREs in that the information shared was *about* the target language questions on the interview task in *iLrn* as demonstrated in the transcript excerpt below:

AR3 – T1 – 00:30 to 01:09

Bev: Before we actually start, because apparently I am confused with grammar, um, so all of these go directly to that, right? So, *aburrirse* would be *aburriro*?
Dawn*: Aburrir* would be…
Bev: See, I don't know what, I get confused with what the actual infinitive of the verb is…
Dawn: It's everything other than the "*se*" is the infinitive, anything that ends in "*ir*" or "*er*" is the infinitive. The "*se*" is just telling you it's reflexive. Okay?
Eva: So, then the endings would…
Bev: So, *me acosto* and then…
Eva: Yeah
Dawn: so, yeah, *acostar* would be, oh yes, *acosto, me acosto*

AR3 – T1 – 03:44 to 04:36

Dawn: Oh, number 3. I'm sorry ¿Te acuestas temprano?
Bev: Um, yo acuesto… I don't know what "temprano" means.
Dawn: Early.
Bev: I need to study this one…um, no nunca.
Dawn: No, no acuestas temprano. ¿Te acuestas antes de las onche (self-corrects)…once?

Bev: No, me acuesto generalmente a las once y media.
Dawn: A las once y media?
Bev: Yeah.
Dawn: Gracias.

Analysis of the exchanges showed that in the first exchange, Dawn had incorrectly formed the conjugation of "*acostarse*", but she used the correct form for the actual interview task. There was no interaction or information sharing regarding this in the recording of the transcript, so it is assumed that she consulted an outside resource to verify the conjugation before using it in the interview questions. It could be that some consultation occurred which was not observable and which was not shared in the group interactions but was indicative of self-regulating behaviour to accomplish the task.

Accordingly, the type of data that was anticipated for these groups was not in evidence due to the gaps in individual preparation and therefore, ability of all of the participants to carry out the tasks as they were designed to be completed. That said, transcripts demonstrated that while L1 was used for every step in managing the task, participants were able to accomplish the learning objective of presenting their findings from the interviews in Spanish at the end of the collaborative dialogue. In other words, this group consistently used their first language to facilitate the understanding of the task so that they could then work individually on their ideas for the Spanish and demonstrated that they were able to do so with a reasonably high level of accuracy and comprehensibility.

4.5.2 – Fuimos a cenar – role play task. Review of the transcripts from Group 3 interactions in the previous task had revealed that there was almost no Spanish being used other than as part of explanations on structures of the language. The researcher reminded the group

that the tasks were about using Spanish in a situational context such as this one in "we went out for dinner" or "*fuimos a cenar*" so it was important to spend more time on the planning and practising of the language in context. Interestingly, the transcripts for this group on this task revealed no explanations of grammar at all. However, all of the planning from the beginning to the 8.5 minute mark on the recording was in English, not a single Spanish word used while they planned what they were going to say. There was no planning, preparing, monitoring or interacting in the target language until this point. After that point, there was an occasional clarification of a vocabulary word, but each person worked individually on one part of the conversation and were mainly directed by the group "leader" Dawn.

As a group they decided when they were ready to record their "conversation" and executed a near perfect recording in Spanish of three people talking about their experience going out for dinner the night before. Dawn twice suggested repeating their discourse "just to get our pronunciations up?" and further added "otherwise, we do it again to perfect our pronunciation". There were almost no instances of LREs since most of the interaction had been in English without reference to Spanish equivalents. In the fifteen minutes of the recording, there are less than two minutes of LREs other than the perfect execution of the "conversation" about their dining experience. Yet, the group did make decisions about their degree of readiness to perform the task and to evaluate the level of that performance by focusing on the clarity of their pronunciation. Once again, Group 3 participants demonstrated that the management of the task and information sharing did not include references to the target language and English interactions were carried into the target language in order to successfully complete the dialogue

in a highly comprehensible manner in Spanish. The use and role of the L1 to make meaning in the L2 in relation to the research questions for the study will be discussed in the next chapter.

In contrast, Group 1 participants, this time composed of Ingrid, Kyle and Sarah as Laura was absent, recorded the first use of Spanish as part of the planning and preparing stage in approaching the task at the 16 second mark of the 16.5 minute transcript recording. *Asking for help*, *monitoring* the accuracy of the language, *self-talking*, *seeking external resources* were demonstrated throughout the recorded transcripts of their interactions as illustrated in the following two excerpts below:

AR3 - T2 – transcript recording 04:20 – 05:14

Ingrid: Okay, *¿qué hicieron el fin de semana pasada?* And then you say "we went to a five star restaurant" and I'll ask why, and then you say "for our parents anniversary."
Sarah: And then, you can be like "¿*Qué comieron*?"
Ingrid: yeah, yeah, that's the idea, okay…we went…to go…*fuimos*
Sarah: *Fuimos? Fuimos*…we went….*Fuimos en el restaurante?*
Ingrid: yeah, that's right, to go
Kyle: uh, yeah, *fuimos*
Sarah: *Fuimos en el restaurante de cinco estrellas*?
Ingrid: Or would it be "*fuimos al restaurante*…?
Sarah*: al*?
Kyle: Yeah, I think …
Ingrid: Yeah, *fuimos al*…"*a*" is "to", so…
Kyle: *Nos fuimos* (repeats phrase to self)

AR3 – T2 – transcript recording 10:39 to 11:18

Ingrid: *What do you? ... How do you say "I'm jealous"?*
Sarah: *I know, I was wondering that too. I can check my phone…or not the phone, I mean I'm going to look at my dictionary…It's actually a Spanish dictionary app, so that should count…* (checking mobile device)
Ingrid: *Jealous…*
Sarah: *celoso*
Ingrid: *celoso* (checks own dictionary online)

Sarah: *but do we have to conjugate it?*
Ingrid: *celoso…ah, it's an adjective…*
Sarah: *soy celoso?*
Ingrid: *yeah, okay*

These passages demonstrate a level of language processing that was consistent throughout the recording, with different participants taking the role as initiator of the exchanges. In reviewing the transcripts, few incidences of exchanges that were off-task or carried out entirely in the L1 were found. For these participants, the meaning-making and checking of accuracy was a group focus with a shifting leadership dynamic within the group. Technology was employed as a language-learning tool to aid in accomplishing the task in the most accurate way. In other words, it mattered to the participants that their recording be based on meaningful and accurate use of the L2, Spanish.

Following the recorded task, participants answered post-task reflection questions that were embedded in the *iLrn* program as metacognitive prompts. It was evident in both the recordings of the tasks and in the written post-task reflections that participants were highly aware of the processing taking place and that they were able to articulate responses that demonstrated some of the qualities associated with metacognitive awareness and strategies use. These participant post-task reflections are presented and analyzed later in this chapter.

Review of action research cycle 3 (AR3) post-task reflections and researcher observations of the groups revealed no reports of stress due to technological use, and two participants reported that they felt either pressured by time or anxious about the performance aspect of the task.

4.6 Findings from Action Research Cycle 4 (AR4)

After reviewing observations and reflections of participants in the previous AR3 cycle, changes were made to the research tasks. A different venue was used for listening and speaking on YouTube, and for the CMC tool *Collaborate*–thereby providing reliable technology in two groups as a means of reducing earlier anxiety and potentially to increase motivation for completing the two tasks in the AR4 cycle. One task used the YouTube video *Amazonas Colombia – el viaje de tu vida* as the resource for a jigsaw task #1 and the second task used the tool, Collaborate to complete the *Survivor! Amazonas* group problem-solving task #2. The time limitation was removed also to reduce performance pressure in this AR4 cycle. Each group chose an agreed amount of time allocation for the group problem-solving task #2 so that time restrictions of the class period would not become a negative or anxiety-causing factor.

Results gathered through participant reflections in Group 3 demonstrated that perceived technology challenges had caused some frustration, added anxiety and adversely affected both the process and outcome of the task completion. In addition, the pattern of interacting in English continued in the problem-solving task, with added challenges observed in the form of a lack of collaboration, long silent periods, off-task time, and trying to use a tool that had not been part of the task requirement. In other words, this group did not employ any of the strategies which had been suggested, recommended or reviewed to help themselves work together to successfully complete the task.

In Groups 1 and 2, learners felt more confident with technology and in using online resources for self-help and to help others. Stress caused by perceived challenges was greatly

reduced in these two groups and none is reported in the post-task metacognitive reflections or in the transcript of group interactions during the task. Post-task reflections were only reported after the second task, with recordings of group interactions reported for both the *Amazonas-Colombia – El viaje de tu vida* task and the Survivor! Amazonas task.

4.6.1 Amazonas Colombia group jigsaw task. It must be noted that Group 3 was unable to use the Internet in the classroom on the day of the task, and as a result, there is no data for the three participants in that group. One of the other five participants was absent from class, so the data collected come from four of the research participants. Participants listened individually to their designated portion of the video clips and then came together to provide their input to complete a summary of the entire YouTube video. Transcript recordings revealed that in groups 1-2, participants immediately focused directly on the task, and interactions were in the target language from the beginning of the recordings. Monitoring accuracy of the target language use and organizing turn-taking occurred occasionally in English. The following is the brief post-task verbal exchange from group 1-2 which demonstrated evidence of monitoring both self/other performances, as well as expressing opinions on the perceived level of difficulty of the task:

AR4 – Transcript recording 05:20 to 06:08

Sarah: Muy bien.
Laura: Geez…I have bad spelling.
Laura: Did anyone else find they talked really fast?
Sarah: Yeah
Laura: Like…or did anyone focus on the wrong words?
Ingrid: Yes!
Laura: So then I'd put something down, and then I'd go read it and I'm like, mm that sucks
Ingrid: Um, can I just check your number, did I write this down? Should I just write it …what does that say?

Sarah: p-a-i-s-a-j-e-s (spells it out)
Ingrid: (repeats spelling) – what does that mean?
Laura: Yeah, what…
Sarah: countryside or landscape
Ingrid: okay
Laura: spelling is hard
Ingrid: Yup
Sarah: (to no one, self-talk) we've asked everyone and we've got everyone.

The researcher did intervene during the individual listening portion of the task with participants Ingrid and Laura, when both seemed frustrated by the recording and asked each one about their feelings during that portion of the task. They reported that they felt overwhelmed by the speed and accent of the speakers. The researcher reminded them to follow the process for listening, pausing the video according to their needs and thinking of the activity for developing their listening skills using their processing strategies rather than as a test of proficiency. The students appeared calmed by the advice as they were observed to re-focus and complete the task. The teacher-researcher exchange with the students indicated the importance of ongoing support in the form of reminders about the metacognitive and cognitive processing strategies they could employ when they began to feel anxious in new learning situations.

Carol was part of another group and was the only other participant from this study in that class for this particular task. Her interactions within her group demonstrated a focus on the listening and speaking portion of the task in the target language with almost no instance of the use of English other than very occasional clarifications such as "okay". Her persistent and consistent use of Spanish and clear understanding of the task was evident, and researcher observations, as well as her own post-task reflections in AR4 demonstrate an increased use of metacognitive strategies for planning and monitoring her language use (see Carol in Table 4.4).

4.6.2 Survivor! Amazonas group problem-solving task. Group 3 participants were Bev, Dawn and Eva. The participants had much difficulty connecting with *Collaborate*, and issues with that took up the first eleven minutes of the task time (no time limit given) which lasted 51.5 minutes. Analysis of the transcript of the recording on *Collaborate* revealed that in the initial brainstorming stage after issues were resolved temporarily, the participants did not pay attention to the target language linguistic aspect by using vocabulary and structures which they had just studied in the in-class lessons. Instead, they focused on the situation of the Amazon and survival skills needed when in isolation. Further to this, members began researching the types of animals in the Amazon rainforest, nothing to do with the task at hand nor with what they had learned in the language classroom. At this point, the researcher intervened to remind group members that this was an exercise for Spanish and the target language should be used. After this point, there were intermittent periods of silence, some up to two minutes in length. References to vocabulary items in Spanish did not occur until the twenty-two minute mark of the recording. At this point, group members focused on survival items instead of the vocabulary reviewed in previous in-class lessons on "actividades al aire libre" (outdoor activities) and began listing items unrelated to what had been studied. One member began using the whiteboard on *Collaborate* to list vocabulary items instead of speaking to her peers in the group. Another member worked independently throughout the task. Researcher observations indicated that group members did not discuss the items that they would need as each group member worked individually on the questions from the *ILRN* task Instructions. At various points, the researcher had to intervene to keep group members on task. At one point, a group member asked a question, and no one answered her because they were not listening to each other. In addition, group members were

not directed to use the whiteboard but were shown how to use and were instructed to use the chat box. This group did not use this tool during the task.

In summary, Group 3 did not demonstrate any of the in-class training in language processing, metacognitive awareness raising reflections or strategies, or working in multimodal environments. The members did not help one another, did not interact using the target language other than very sporadically, did not follow the instructions of the task, and were often off-task in terms of target language use. Generally each group member worked individually on one particular aspect of the task and did not interact with one another. Participant post-task reflections in Table 4.4 from Dawn and Eva demonstrate the same level of stress, lack of group task management and focus that the researcher had observed during the task and in the audio transcripts. Bev did not submit a post-task reflection. Findings indicated that the negative dynamics of the group had overtaken their ability to apply their metacognitive knowledge, Spanish language ability and prior learning experiences in the classroom to accomplish the language processing task.

Group 1 participants Sarah and Ingrid used a variety of strategies to complete the tasks as shown in the audio transcripts and researcher observations in Table 4.4. Researcher observations during the tasks and after reviewing the transcript recordings demonstrated strategies such as planning for the task, asking for help, thinking aloud and self-talking, seeking external resources and monitoring the accuracy of the target language. Sarah initiated the planning interactions, and there was evidence of collaboration from both participants throughout the activity. There were no instances of silent periods or off-task interactions.

Group 2 participants Kyle, Laura, and Carol also used a variety of strategies to complete the tasks with results presented in Table 4.4. Carol initiated the interactions in the group, and she was interacting in the target language from the beginning of the planning phase. Evidence of collaboration with peers to organize the vocabulary and the use of English to clarify or monitor the accuracy of the target language structures were observed. Other strategies such as asking for help, seeking external resources, using the chat box, thinking aloud and self-talking were in evidence from the researcher observations and in many of the post-task metacognitive reflections.

4.7 Participant Post-Task Reflections

Participants completed reflective self-awareness prompts which were embedded in the online iLrn software at intervals over the three month period. Table 4.4 details the questions included in the reflective prompts for each action research cycle, the transcript of individual participant's post-task reflection, process coding of those transcripts and researcher observations during task which were also coded. Participant written responses were collected, initially coded using an InVivo coding process to reveal key patterns through the participants' own words and phrases that were then further coded using a "process" coding method (Saldaña, 2013). Coded researcher observations in purple print demonstrate what the researcher had identified as strategic behaviour from the task audio transcript but which the participants themselves had not identified. The same process was employed for coding of the participant task transcripts themselves. This method was employed to use gerunds for connotation of both observable and conceptual actions in the data and to maintain consistency in the reporting throughout the study.

Figure 4.4 and Figure 4.5 below provide a visual depiction of participant responses in post-task reflections which were coded as shown in Table 4.4. Negative response coding is shown on the left side of the graph from which four negative themes emerged: stressing due to time limits, stressing due to technological problems, feeling uncomfortable about using technology and stressing about language ability. Stressing about language ability was reported by one participant during one task cycle only and is therefore not considered significant in terms of representing participants' attitudes for the study or for planning future tasks. What is significant is that none of the other participants reported that their beginner level ability was an inhibitor to the completion of the tasks in AR3 and AR4.

In fact, in AR3 and AR4, only 25% (two participants) provided negative feedback regarding their experience while on-task. The other 75% of participants reported using a variety of strategies to aid them in completing the tasks in AR3 and AR4. This lies in contrast to the previous cycle AR2 in which 4/7 respondents or 57% gave negative feedback on the learning contexts in terms of time limits and technology issues.

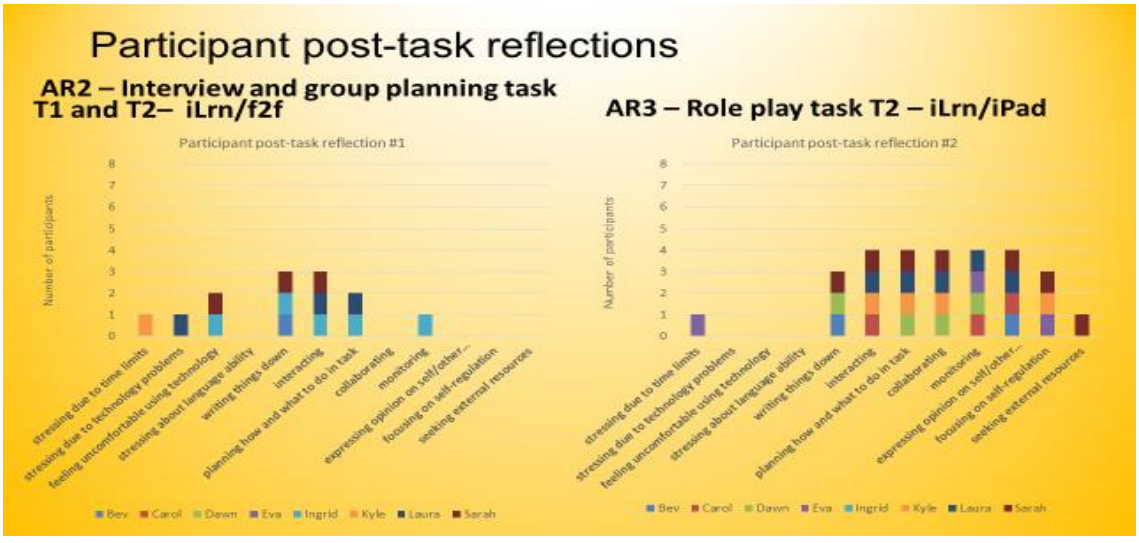


Figure 4.4 **Post-task reflections AR2 and AR3**

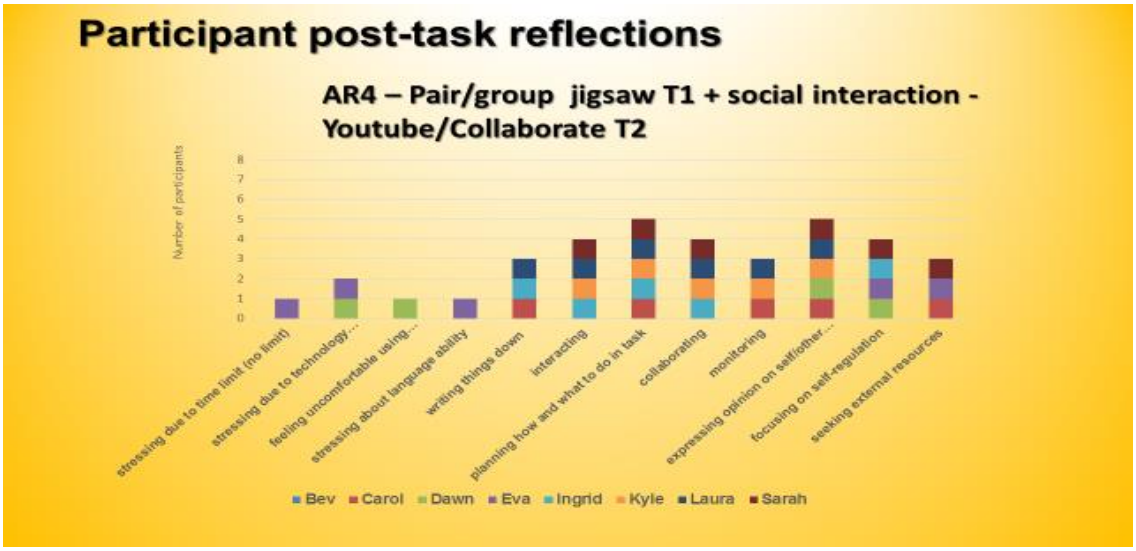


Figure 4.5 **Post-task reflections AR4**

What is observed in Figure 4.4 and 4.5 is a gradual shift to positive post-task reflections with participants reporting the use of more metacognitive, self-regulating strategies over time and tasks even though they did not refer to them as such.

In AR4, the most significant strategies indicated by 71% (5/7) of participants were *planning* for carrying out the task, and expressing opinions on their own or others performances which could be further coded as "*evaluating*" their own learning. The next set of significant strategies reported by 57% (4/7) of participants focused on *interacting, collaborating* and focusing on self-regulation or *"self-regulating".*

The changes that occurred over time and in different tasks according to participants' reflections will be addressed in more detail in the discussion chapter which follows.

4.8 Researcher observations

Table 4.4 includes not only the researcher observations of participants' actions during the tasks and after a review of the transcript audio recordings but also the students' self-reflections.

There are significant points of intersection with what the participants reported in their post-task reflections. That is, in many instances, the participant perception of the strategies they used coincided with the researcher's observations. However, in other cases, the researcher observed strategies for self-regulating learning which the participants themselves did not report or appear to perceive as strategies. As stated earlier in the chapter, researcher observations were also analyzed using the process coding method by employing gerunds for categorization in order to maintain consistency across the coding contexts. Researcher observations of strategies that were not reported by participants are demonstrated in Table 4.5:

Table 4.5 – Researcher observations of strategies used during tasks which participants did not report

Participant	AR2	AR3	AR4
Bev	asking for help	asking for help self-assessing during task monitoring structures with peers	working independently
Carol	absent	self-talking	initiating interactions interacting in target language collaborating
Dawn	no data	initiating interaction (English) orchestrating interactions	writing things down no collaborating
Eva	*no change* *mostly negative*	*no change* *taking leadership not observed - but reported by participant*	*no change* *mostly negative*
Ingrid	no change	*no posting by Ingrid – researcher observations only:* initiating organizing participants' roles planning asking for help monitoring	asking for help thinking aloud seeking external resources monitoring accuracy of target language
Kyle	no change	self-talking asking for help	asking for help seeking external resources thinking aloud, self-talking
Laura	no change	asking for help seeking external resources using humour to reduce anxiety	asking for help using humour
Sarah	no change	initiating planning asking for help monitoring accuracy of target language	initiating planning self-talking, thinking aloud monitoring accuracy of target language

One strategy that was significant in its absence in the reporting from participants was "*asking for help*". Even though in-class instruction was provided about the importance of asking one another for help as a strategy in interactive tasks, it was not specifically identified as a strategy that was used in the tasks for the study. What emerged from the researcher observations based on the transcript recordings were instances in different tasks of "*initiating interactions*" in the groups by four of the participants: Carol, Dawn, Ingrid and Sarah. These participants did not self-identify as initiators or as actors in a leadership role except for Dawn who did report taking a leadership role in one of the tasks in her group. Interestingly, Sarah and Ingrid were in the same group for all tasks and appeared to take turns in a leadership role. In the case of Dawn, she was the initiator and often the organizer in her group, and the influence of that on the group dynamics and therefore, the strategic awareness and use, may have been a factor in the processing interactions. One outlier from Dawn's group was Eva who did self-identify in her post-task reflections as taking a leadership role in AR3, but there was no evidence to support that in the task transcript recordings.

It would appear then that, returning to the research questions for the study, learners chose from a variety of strategies that they can identify, but also used some which they did not appear to consider part of their strategic learning. In addition, the types of strategies changed over time with a gradual shift to more self-regulating types of behaviours. Further discussion of the ~~significance~~ relevanceof these results as they relate directly to the research questions will be forthcoming in the discussion chapter which follows.

4.9 Post-treatment questionnaire

The post-treatment questionnaire (Appendix B) was designed to determine what changes, if any, had occurred following the action research in terms of the level of perceived confidence in technological competency and in the beliefs and attitudes of participants towards learning Spanish as a foreign language. Data collected on levels of confidence and beliefs about learning Spanish using a Likert type scale are presented in Figure 4.6.

4.9.1 Technological confidence and perceived digital competency. Results indicate that learners increased their level of confidence using a variety of technological tools, and reported feeling more competent in their use. Following the analysis of the data collected, a comparison to the pre-treatment questionnaire on questions directly related to the post-treatment questionnaire will be presented. More in-depth discussion of these results will follow in the next chapter.

Participant perceptions of their levels of confidence using a variety of tools in multimodal environments were recorded using a Likert-like scale with 5 = very confident, 4 = somewhat confident, 3 = not very confident, 2 = not at all confident, and 1 = don't know and are presented in Figure 4.6.

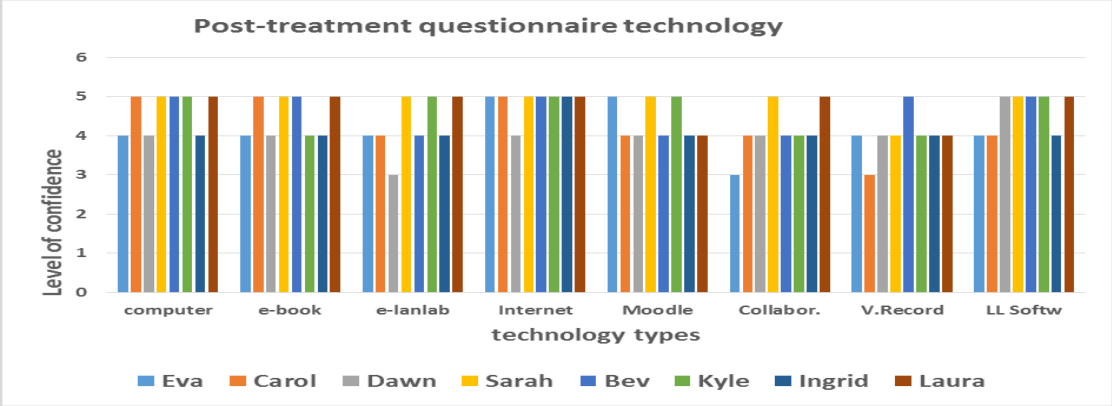


Figure 4.6 **Participant responses to Q1 – post-treatment questionnaire**

Table 4.6 presents percentage conversions of technological competency of the participants.

Table 4.6 post-treatment questionnaire Question 1 (Q1) – percentage conversions for technological competency shown in Figure 4.6

Q1 – How confident do you feel using the following:

	computer	e-book	e-lab	Internet	Moodle	Collabor.	V.Record	LL Softw
Eva	4 **(-1)**	4	4 **(+1)**	5	5 **(+2)**	3	4 **(+1)**	4 **(+3)**
Carol	5	5	4	5	4	4 **(+1)**	3	4 **(+1)**
Dawn	4	4 **(+2)**	3 **(+1)**	4	4 **(+3)**	4 **(+3)**	4 **(+3)**	5 **(+4)**
Sarah	5	5	5	5	5	5	4 **(+1)**	5
Bev	5	5	4 **(-1)**	5	4 **(-1)**	4 **(-1)**	5	5
Kyle	5	4	5	5	5	4	4	5 **(+1)**
Ingrid	4	4	4 **(+1)**	5	4	4 **(-1)**	4	4 **(-1)**
Laura	5	5	5	5	4	5 **(+4)**	4 **(-1)**	5
Level of Confidence	**100%**	**100%**	**87.5%**	**100%**	**100%**	**87.5%**	**87.5%**	**100%**

Level of confidence scale:
1 = don't know, 2 = not at all confident, 3 = not very confident, 4 = somewhat confident, 5 = very confident
(Changes from Table 4.1 indicated by (**+/-**) – **increase** or **decrease**)

As a comparison to Table 4.1 which illustrated participants' perceptions of confidence in using technological tools in the pre-treatment questionnaire, Table 4.6 shows that out of a total of 64 scores, 16 were higher than in the pre-treatment, seven had decreased, and the rest remained unchanged.

There were some significant increases in participants' perceived levels of confidence and competency in the categories of videoconferencing tools, voice recording, e-language labs and language learning software while there were almost no changes from the responses given in the pre-treatment questionnaire on using a computer or the Internet. Tools that were used to complete the interactive multimodal tasks were part of regular classroom practice as for the action research. The videoconferencing tool was changed from *Skype* to *Collaborate* due to issues of institutional student permissions, yet the majority of participants (7/8) 87.5% reported

feeling confident or somewhat confident using the *Collaborate* tool. All but three of the participants reported feeling "somewhat confident" or "very confident" for all of the technological tools that were used in the study.

Three individuals reported feeling "not very confident" in different areas: Dawn with the e-language lab, Eva with *Collaborate*, and Carol with voice recording. The individual participant, Eva, who reported here feeling "not very confident" with *Collaborate* was also the participant who gave the most negative feedback in post-task reflections in AR3 and AR4. On the other hand, Dawn had no prior knowledge or experience with using many of the tools and reported "don't know" for Moodle, Skype, voice recording and language learning software in the pre-treatment questionnaire. In the post-treatment questionnaire, she reported feeling somewhat confident in all four areas. In fact, she did not report feeling any stress due to technology in her post-task reflections in AR3 or AR4. Further discussion of individual differences in perceptions, beliefs, attitudes and how these may affect strategic learning will be expanded upon in the next chapter.

4.9.2 Reflections and strategies. Findings are from the post-treatment questionnaire question 2(Q2) aimed at determining the beliefs that participants had about their ability to learn a foreign language. This question was a follow-up to the pre-treatment questionnaire which asked about beliefs and attitudes towards language learning and further addresses the research questions related to the development of self-efficacy and learner autonomy. Results from participant responses to question two (Q2) on the post-treatment questionnaire are shown as graphical representation Figure 4.7 and in percentage conversion in Table 4.7:

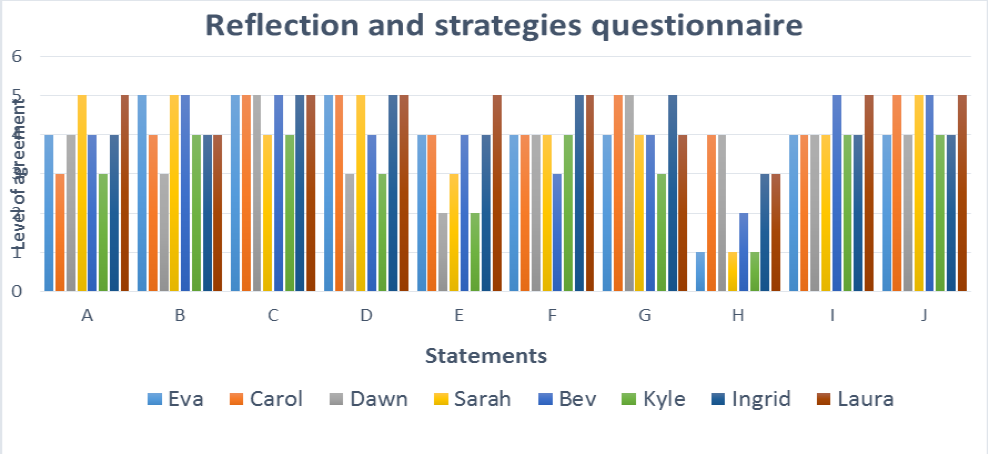


Figure 4.7 **Participant reflections and strategies perceived Q2 post-treatment questionnaire**

Level of agreement scale:
1 = (Strongly disagree), 2 = (Disagree) 3 = (Neither agree nor disagree), 4 = (Agree) 5 = (Strongly agree)

Reflections and strategies question 2 (Q2) reflections and strategies perceived guide:
A. When I am faced with a learning task in Spanish I try to relate it to my own experience
B. I can describe what I do to learn Spanish
C. I can ask for help before, during or at the end of a task.
D. I think about what would be the best way for me to approach a particular learning task
E. I used the same strategies in the classroom and online
F. Working with partners helped my learning
G. I feel more confident speaking Spanish
H. It is easier to speak Spanish than to understand it
I. I can use the strategies I learned for Spanish in other learning contexts
J. I feel comfortable completing tasks in online environments

Table 4.7 – post-treatment questionnaire (Q2) – percentage conversions on reflection and strategies shown in Figure 4.7

	A	B	C	D	E	F	G	H	I	J
Eva	4	5	5	5	4	4	4	1	4	4
Carol	3	4	5	5	4	4	5	4	4	5
Dawn	4	3	5	3	2	4	5	4	4	4
Sarah	5	5	4	5	3	4	4	1	4	5
Bev	4	5	5	4	4	3	4	2	5	5
Kyle	3	4	4	3	2	4	3	1	4	4
Ingrid	4	4	5	5	4	5	5	3	4	4
Laura	5	4	5	5	5	5	4	3	5	5
Agree	**75%**	**87.5%**	**100%**	**75%**	**62.5%**	**87.5%**	**87.5%**	**25%**	**100%**	**100%**

Level of agreement scale:

1 = (Strongly disagree), 2 = (Disagree) 3 = (Neither agree nor disagree), 4 = (Agree) 5 = (Strongly agree)

Reflections and strategies question 2 (Q2) reflections and strategies perceived guide:

A. When I am faced with a learning task in Spanish I try to relate it to my own experience
B. I can describe what I do to learn Spanish
C. I can ask for help before, during or at the end of a task.
D. I think about what would be the best way for me to approach a particular learning task
E. I used the same strategies in the classroom and online
F. Working with partners helped my learning
G. I feel more confident speaking Spanish
H. It is easier to speak Spanish than to understand it
I. I can use the strategies I learned for Spanish in other learning contexts
J. I feel comfortable completing tasks in online environments

In the Likert-type scale used, participants recorded levels of agreement with statements about learning Spanish as a foreign language and their feelings about that learning. Responses to statement C: "I can ask for help before, during or at the end of a task" recorded the highest level of agreement with 75% (6/8) strongly agreeing and 25% (2/8) agreeing with the statement. The second highest occurred with statement J "I feel comfortable completing tasks in online environments" with 50% strongly agreeing and 50% agreeing. The third highest level occurred with statement I "I can use the strategies I learned for Spanish in other learning contexts" with 25% strongly agreeing and 75% agreeing. The fourth highest level of agreement occurred with statement G "I feel more confident speaking Spanish" and statement B "I can describe what I do to learn Spanish" with 37.5% (3/8) strongly agreeing and 50% (4/8) agreeing and one participant who neither agreed nor disagreed. In other words, we can see high levels of confidence in using the target language and their ability to self-regulate their learning. Statement F "Working with partners helped my learning" was strongly agreed with by 25% (2/8), agreed 62.5% (5/8). That is, over 87% of participants agreed that the interaction in the group was an aid to their learning.

One participant neither agreed nor disagreed. Out of the 80 scores in Table 4.7, 22 were lower than in the pre-treatment, 25 were higher, and the rest remained unchanged).

One area which was consistent from the pre-treatment questionnaire to the post-treatment questionnaire was statement H "It is easier to speak Spanish than to understand it" with 37.5% (3/8) strongly disagreeing, 12.5% (1/8) disagreeing, 25% neutral, and 25% who agreed with the statement. That is, most of the participants did not report a perception that speaking Spanish had become easier by the end of the course and study, but data from the responses to the previously reviewed statements in post-task reflections indicate that their perception was that they had an increased ability to cope with that learning challenge.

4.10 Selected Interviews

Following completion of the post-treatment questionnaire, selected interviews were recorded with three of the participants. The selected participants represented a broad variety of views of their experience in the beginner Spanish language classroom and the usefulness or applications of strategies and task-based interactions in multimodal environments while working with partners. The interview protocol and questions set out in Appendix C were used for each of the three interviewees in a flexible semi-structured format. Review of the interview transcripts revealed four key questions that offered the most significant insights into each of the learners' experience in the study: questions 1, 3, 5, and 8 shown in Table 4.8 with participant responses shown in Table 4.9:

Table 4.8 Selected interview questions – post-treatment

Question 1 (Q1)	Do you feel that the strategies instruction you received affected how you carried out the activities in the online environments?
Question 3 (Q3)	Do you consider that the interaction in pairs and groups contributed to your knowledge and use of strategies in your language learning?
Question 5 (Q5)	How did you feel about reflecting upon your own learning? Can you tell me how or if that had an impact on your progress or your strategy choices?
Question 8 (Q8)	Can you tell me what you feel is the most important thing that I should know about your learning experience?

Table 4.9 Participant responses to selected interview questions post treatment

	Bev	Ingrid	Sarah
Q1	*Not really…* *Well, if I was more on top of my game I would have used a better approachaltogether, but basically, just sign in, do what you're asked to do and sign out. Not too complicated.*	*I thought they were helpful, like you easily told us like what to do, pretty straightforward. Sometimes I had a bit of difficulty with the technology part because I'm not very good at technology, just like studying things up and stuff, but other than that I thought it was pretty good.*	*I think talking helped the most so that when you actually went on the computer to do it, you had a lot better knowledge of what you were doing there." "…I felt like our class was a lot of hands-on learning, it wasn't just like textbook knowledge and that is what made doing things online more manageable because now you're suddenly alone and you have that more foundational learning.*
Q3	*It probably helped. I personally don't really care for working in groups.* *I know from taking psychology and stuff that working in groups is a good way to learn…it's supposed to help your learning….but usually I prefer working alone.*	*Yeah, yes…because you're learning new things from other people, right? And then, like if I was struggling with something they could help me or, so, it was like interactive learning, I guess, like we're all kind of teaching each other." - "you teach us a certain way but like other people have their own way of learning as well. So you get a bunch of ways to learn, and it's easier to find something that you are comfortable with."*	*Every time we did it, I'd get really scared because I know it would push my Spanish knowledge so I think that was good. It definitely helped a lot…it makes you really think and really on the spot, it's like, okay, DO (her emphasis) I actually know anything, I don't know…" "Um, it was nice to talk it out with other people…you'd bounce ideas off each other which is really good because I can get very (pause)… like writer's block kind of thing…then once you start*

			bouncing ideas off each other you can like figure it out and get the ball rolling a lot easier.
Q5	*It's always good to figure out what I'm good and what I'm bad at….I'm also figuring out that I am not very motivated by being in an educational environment* *I don't think, not for me, but I don't think I was doing it from the perspective for me, more for you and what you needed to do for this (the study)…..I was thinking more about what kind of information you needed for your paper or whatever…*	*I thought they were good. Like when I, after I did them, it was like extra learning"…it just keeps us working on it and stuff*	*I just never really analyze myself very much, well I do all the time, but I don't write it down. It's just…different."* She did not transfer her reflections into changes for the next round of tasks and stated *"I didn't, but in hindsight that was pretty dumb. I think like I just, I get so busy that I just forget about everything until it's in my face.*
Q8	*Well, no, that's the thing, like, I get really frustrated sometimes when I'm not performing as well as I can, but you always found some positive, so I think that really helped me just like not quit, so I really appreciate you (begins to cry)*	*I just feel like a little more time in the activities, 'cause it is hard to get everything set up and get…it's like some people are not good with technology, like figuring everything out and then kind of collaborating with other people…it takes a lot longer sometimes"*, and expanded by adding *"And I really like the ILRN activities, I thought they were really helpful*	*I don't know, it was all really good….I really enjoyed it, and I'm like excited to carry on in it." … "I feel a lot more confident guessing which is, I don't know if that answers the question, but I think that….might as well. Because like a lot of the time you sell yourself short and you know it even if you don't think you do, so take that chance. I guess (laughs), the moral is you can guess now.*

4.10.1 Bev. Transcripts of the interviews are included in Appendix J and excerpts corresponding to the selected interview questions are included here. Bev's responses to question 1 (Q1) indicated that her experience was that the strategies instruction was not effective for her learning and her approach was to get the job done according to the researcher's instruction. This is consistent with her post-task reflections and researcher observations based on AR3 and AR4 recorded transcripts of group interactions. Furthermore, Bev's response to Q3 is also consistent with her actions in the study tasks in which she played a minimal role in group dynamics and limited that role to asking questions on Spanish grammar in AR2 and AR3 with almost no interaction with the group in AR4.

Bev's responses to Q5 and Q8 on reflecting on her own learning and on what she felt was most important to know revealed an emotional aspect in her attitude that had been unknown until the interview. By the end of the interview, Bev had become quite emotional, and her last response to question 8 reveals a vulnerability that had not been detected. The relevance ~~significance of the impact~~ of the practitioner-researcher's attitude on the participant's experience and other information given by this research participant to describe her attitude towards her learning will be discussed in the next chapter as part of an explanation for the some of the results and challenges encountered throughout the study.

4.10.2 Ingrid. In contrast to Bev, Ingrid's responses to the same questions revealed quite a different perspective on her language learning experience. That is, she was able to reflect positively on the strategies instruction, use of technology and to offer insights into how collaborative learning had benefitted her.

For Ingrid, in responding to question 8, it was most important for the researcher to know that she needed more time to get things done. When I asked Ingrid if all the tasks had been helpful, she responded *"yes, because every single task had a little bit of something relating to the test"*. Ingrid reported that this was important to her. Ingrid's responses to the interview questions revealed a high level of engagement on a personal level with her peers in the interactive tasks, and that she was educationally committed and results oriented in terms of grades.

4.10.3 Sarah. Results from Sarah's interview demonstrated that Sarah's learning experience was positive overall, both in her insights into her own learning processes and in her language development over time. These findings concur with Sarah's post-task reflections and

her actions in the interactive tasks. Some of Sarah's responses were presented as part of the findings summary at the beginning of this chapter in Section 4.2.3d. Her responses to Q1 and Q3 revealed not only her engagement with the language through overcoming anxiety but also the discovery that collaborating and interacting with others helped her in her learning.

Sarah stated that she found reflecting upon her own learning difficult in response to question 5 and she did not transfer her reflections into changes for the next round of tasks. When asked if reflection had an impact on her progress, she responded "*think that if I had reflected on the reflection though, I would have. But I just never took time to…"*

For Q8, Sarah took some time to respond to what she felt was the most important thing she wanted me to know about her learning experience. Overall, her interview responses demonstrated that her learning experience in the multimodal environment of the beginner Spanish course was quite positive and focused on developing her ability to progress and to cope with the challenges of learning a new language as further evidenced in the following interview excerpt:

Interview excerpt from Sarah:

> **Interviewer:** *Is there anything you might do either the same or differently when facing tasks in other learning contexts in the future?*
>
> **Sarah:** *Outside of language?*
>
> **Interviewer:** *yeah. Anything you'd do the same or differently?*
>
> **Sarah:** *Uhm, I think I found in Spanish that I relied a lot on dictionaries the first semester and a lot of this semester, but one time I was stuck without a dictionary and I was just, it took a lot longer* ***but I realized if I thought about it and figured it out, I had the skills to actually do it*** *which was my …****oh I've just been selling myself short, like I can do this,*** *but the Internet's right there so it's so much easier. So, I think that that actually take time, and like I learned this with my stats class too****. It's super overwhelming and I tend to just look at it that way and get panicked but if I just calm down and I'm like you***

know--take this step by step calmly, think about it, you know (*Sarah's emphasis****) the answer, like just figure it out step by step…***

Interviewer: *…I'm just looking at the questionnaire from the beginning of the study, and you weren't too sure about whether or not it was okay to guess if you don't know a word in Spanish. How do you feel about that?*

Sarah: ***I feel a lot more confident guessing*** *which is…but I think that…might as well. Because like a lot of the time you sell yourself short and* ***you know it even if you don't think you do, so take that chance. I guess (****laughs****) the moral is you can guess now.***

In summary, responses of the individual learners to the four key questions represent a range of reactions to their learning experience and the effects of strategies instruction. These were seen the learner's actions in the tasks, the role of interaction and collaboration on learning and metacognitive strategies use, the impact of self-reflection on learner actions, and their opinions on what they considered most important for the researcher to know about their experience.

4.11 Chapter summary

Results have been presented from a number of data collection instruments employed in this action research. Excerpts from participant responses given in the pre-and post-treatment questionnaires provided a summary of their experiences in relation to the research questions on metacognition and language learning strategy use in multimodal learning environments. Results from the pre-treatment questionnaire formed the basis for the process followed in AR1 that focused on learner support and training in using technology for language learning, building relationship, and metacognitive awareness-raising activities as part of the regular in-class instruction. Participant and researcher actions and interactions in AR1 during the training and support stage were key for the design of the next cycle of action research AR2. The impact of

technological challenges and digital infrastructure of the college were institutional limitations through action research cycle 2 which limited the quality of results for planned multimodal tasks but did inform the design and selection of tasks in action research cycle 3. Post-task metacognitive reflections and audio transcripts of task interactions in AR2 and AR3 and AR4 were analyzed for evidence of metacognitive processing, and they revealed a limited repertoire of strategies used by participants. The findings regarding the research question on learner autonomy summarized in Section 4.2.3d, the post-treatment questionnaire in Figure 4.5 and its results in Section 4.9.2 provide evidence of developing learner autonomy in some participants' actions in action research cycles 3 and 4, their post-task reflections shown in Table 4.4, and in responses to questions in the selected interviews.

No evidence was found to specifically link the in-class instruction to the strategic behaviour of the participants. The participants themselves appeared to act implicitly in strategic ways. Strategies found in learner interactions included *planning* how to approach the task, *deciding* what language forms and vocabulary to use, and *monitoring* the grammar and vocabulary for accuracy and for meaning-making, *asking for help* from peers and the instructor, *thinking aloud* while listening to others, and *seeking external resources* to aid them in task completion. A summary of these are indicated in the findings summary in Section 4.2. Analysis of participant post-task reflections revealed that participants were able to articulate more positive strategies' use over time which confirms what was found in the audio transcripts of the task interactions. That said, results from researcher observations of the recordings indicated more strategic behaviour than what had been reported by the participants themselves. Finally,

the post-treatment questionnaire revealed an increase in self-efficacy amongst participants, both in terms of the use of technology and in managing their own learning.

By employing a variety of data collection instruments over a three-month period and in action research cycles, a more holistic explanation and deeper discussion of the beginner foreign language experience becomes possible. That discussion will take place in Chapter 5.

CHAPTER 5 DISCUSSION

5.1 Overview

In this chapter, the discussion focuses on key areas of observed learner behaviours, and the impact of the action research on teacher's strategic language teaching practice, as they aligned with the research questions. The highlighted aspects discussed here under separate subsections, and identified as key areas of learner behaviour, indicate the study's purpose to achieve an understanding of the *learner experience and learner perceptions,* and to increase levels of *self-efficacy and the development of learner autonomy* through metacognitively strategic learning and reflection. The basis for observing these aspects of learner behaviour was founded on employing a social constructivist pedagogical approach in a series of *interactive and collaborative tasks* that the learners *performed* in a variety of learning contexts. Within the discussion are included examples of tasks from the *multimodal* aspect which refers to the multiple modes of learning resources (textual, visual, aural, digital and social) and contexts (person-to-person and TELL) that the participants used to complete the tasks. They are included in the discussion to demonstrate the collaborative nature of the tasks and the socio-affective factors during the interactions that affected the research results. The design, focus and aim of the action research to understand and then to take action to improve the learning experience remained at the forefront of the researcher's strategies and collaborations with the participants and are presented within the discussion.

As a teacher-practitioner-action-researcher initiated project, a key area that is foregrounded in this chapter is the role played by the teacher-practitioner-action-researcher in developing strategies that contributed to the emergence of key areas of learner behavior. The

discussion of the impact of the action research on the teacher's strategic language teaching practice aligns with the research question and contributes to the knowledge gained through the methodology employed.

The four key areas of learner behaviour that emerged from the study based upon the research questions, are discussed and interpreted for evidence of metacognition, self-efficacy and developing learner autonomy. The nature of the tasks themselves and the multiple modes of interactions were central to research results and are included in the section on the learner behaviours. That is followed by the discussion of the methodology as it contributed to knowledge and how the conceptual framework of this study provided a basis for future studies in the area of action research in technology-enhanced learning and teaching. Furthermore, results from this study suggest a direction and framework for language teaching practices in the area of TELL.

5.2 Key areas of learner behaviour

The findings presented in Chapter 4 revealed a number of areas for consideration in learner support and training: development of technological competency, metacognitive awareness-raising strategies instructions, and building the practitioner-participant relationship as depicted in Figure 4.1. Developing metacognitive awareness was found in task interactions, researcher observations and in the post-task reflections of the participants. The first year college Spanish as a foreign language learners used metacognitive strategies in each of AR 2, AR3, and AR4 as shown in Table 4.4. These are discussed here under separate sections linked to the key areas of learner behaviour studied based on the research questions. The codified metacognitive strategies that emerged most frequently were *planning, monitoring, asking for help*, *giving help,*

self-talk, and *seeking external resources* with participants often using a repertoire of strategies implicitly in tasks without reporting their use in their post-task reflections. Researcher observations shown in Table 4.5 demonstrate that learners were more metacognitively strategic than they themselves had reported, in each of the AR cycles in face-to-face, multimodal and online environments. While it cannot be known for certain if the strategies instruction had an effect on their use, it is evident in the post-task reflections from the participants that there was an increase in their strategic behaviour over time and that they expanded their repertoire of metacognitive strategies implicitly.

As stated earlier, four key areas of learner behaviour have emerged from the study and have advanced our knowledge of the early stage learners of Spanish in these environments through actions taken that aimed to improve their experience so that they may become more effective, efficient and autonomous language learners. The research questions designed to explore these areas framed the key areas of learner behaviour which emerged from the study as shown in Table 5.1:

Table 5.1 Researcher questions and key areas of learner behaviour discussed

Research questions	Key areas of learner behaviour
1. What metacognitive strategies do adult beginner foreign language learners use in a technology-enhanced environment to complete learning tasks in Spanish?	1. **The metacognitive strategies that beginner foreign language learners use to facilitate and manage their own learning.**
2. How do learners apply instruction in metacognitive strategies to technology-enhanced learning tasks?	2. **The effects of metacognitive strategy instruction in-class on learners' strategy use and learner perceptions in TELL**.
3. What are the effects of teaching metacognitive strategies on the	3. The role of learner beliefs, attitudes and level of confidence in developing **self-efficacy**

beliefs, attitudes and level of confidence of beginner learners of Spanish as a foreign language?	4. Evidence of development of **learner autonomy**
4. What is the impact of the action research on strategic language teaching practices?	1. holistic approaches to classroom-based research 2. ~~significance~~ influence of the role of the practitioner-researcher - subheading 3. teacher strategies development - subheading 4. framework for designing pedagogic tasks for learner benefit in TELL

5.2.1 Metacognitive strategies used to facilitate and manage own learning. Findings confirmed that beginner foreign language learners do use a small repertoire of metacognitive strategies to manage their learning in multimodal environments. Overwhelmingly, the most used metacognitive strategy was *planning,* along with *monitoring* and *asking for help* as illustrated in the audio transcript of the dialogue during task 2 in AR3 between Ingrid, Kyle and Sarah. This behaviour supports previous research on beginner learners of Spanish (Blanco, Pino & Rodriguez, 2010) and an earlier study from O'Malley and Chamot (1990).

Planning, asking for help, monitoring accuracy of grammar and vocabulary in the language, giving help, thinking aloud, and seeking external resources were enacted in collaborative tasks in both face-to-face and CALL contexts. Asking for help, giving help and thinking aloud all correspond to the socio-affective aspects of the participants' strategic behaviour which, as stated in Section 5.4.2 in this chapter, are included in the definition and concept of metacognition. It would appear then that the social and affective strategies offered more support for the low proficiency level of the participants.

In terms of seeking external resources, many learners relied on electronic dictionaries, as well as the e-glossary in *iLrn (*which they had added to their mobile phones), to check for spelling,

vocabulary words and in some cases, verb conjugations. Seeking external resources is a hallmark of metacognitive action as learners are taking the initiative to guide and monitor how they complete the language learning task. The idea of learners using "their own personal technologies" (Levy, 2015, p. 557) such as the ones described, especially at the beginner level of language learning, opens up great potential for designing CALL tasks and presenting online resources that will allow learners to become more self-directed, more autonomous even at the very early stages of their language development.

5.2.2 Effects of metacognitive strategies instruction on learners' strategy use and learner perceptions in TELL. None of the participants made reference to applying specific strategies discussed in-class during the process of completing the tasks in CALL, and no connection was made in participants' post-task reflections between what was learned in class and the actions they took in the tasks. Yet, in spite of the lack of reference to in-class instruction, participants were able to identify and elaborate on the some of the strategies they did use to complete the tasks in their post-task reflections. For example, in her post-task reflection in AR4, Carol said that listening to others, giving and getting feedback via computer, as well as using online resources all helped her, and she ended her comments with the statement, "I learn by doing, not by reading". Carol demonstrated that she knew what strategies would aid her in completing the task, was self-aware and cognizant of her best learning styles yet did not link her actions to any in-class preparation. In other words, she demonstrated a level of self-efficacy and ability to discern how to regulate her learning by cycle AR4. Transcripts of the participants' collaborative dialogues revealed further use of strategies which the students did not identify yet the researcher-practitioner observed them. For example, Dawn took a leadership role in group

3 interactions in the role play task "fuimos a cenar" in cycle AR3. She was checking for grammatical accuracy, and wanting to monitor and evaluate the group's pronunciation before performing their final submission, she provided evidence of autonomous behaviour in directing her own learning process, and by extension, monitoring the group's level of language processing. The following exchange provides evidence of Dawn's role and her efforts to continue processing the Spanish language:

AR3 Task 2 Fuimos a cenar transcript recording 1427-1503

Dawn: …*Quiero ir a este restaurante, quizá la próxima semana para celebrar mi cumpleaños. Okay, that was it.*
Bev: *Ho, sweet… I feel like it's so anticlimactic*
Dawn: *Yeah, do we want to do it again just to get our pronunciations up?*
Eva: *Well, we could if you want to*
Dawn: *We're waiting for her? (referring the instructor)*
Eva: *Uh, okay*
Bev: *We're good?*
Dawn: *Otherwise we do it again to perfect our pronunciation*
Eva: *Yeah, we'll try one more*
Bev: *It's up to you*
Dawn: *Other people are still working, we might as well…*

There is an indication therefore that students at this low level of language proficiency use metacognitive strategies in an implicit way even though they cannot explicitly attribute a strategy to their behaviour learned through strategies instruction. Therefore, one could argue that it is not known if the metacognitive awareness raising instruction and ongoing in-class and online reflections prompted the use of metacognitively strategic behaviours and that they may be the result of individual learning characteristics. Such an argument would concur with Huang's 2010 small scale study with intermediate language learners in which she found that learners will

interact and use strategies according to their needs and become self-directed simply by being provided with the tools to do so, that is, without explicit instruction.

Yet, with low proficiency language learners, important aspects of the metacognitive awareness-raising instruction as discussed in the literature are to provide support and guidance which in turn may reduce language learning anxiety, increase self-efficacy and open up the potential for shared learning experiences with peers. As stated, providing early learners with metacognitive tools to direct and manage their learning provides a sense of control over the learning, thereby increasing levels of self-efficacy and reducing feelings of anxiety. Further discussion on learner behaviours as evidenced in the findings of this study regarding self-efficacy and the socio-affective aspects of language learning is presented in Section 5.4 of this chapter. Participants may not have referred to what support was explicitly provided by their peers or the instructor, but their behaviours in the TELL tasks, for the most part, indicated an increased willingness and engagement with peers in completing the tasks and in monitoring their language development. In addition, over the course of the study most participants became more focused on metalinguistic aspects of tasks and began to exhibit behaviours of self-regulation. For example, this is evident in tasks in AR3 and AR4. Researcher's observations based on transcripts and participants' post-task reflection, revealed that both Sarah and Ingrid were able to describe how they prepared for tasks, how seeking external resources in the online environment aided them in accomplishing the task, and they monitored their linguistic accuracy in collaboration with their partner. Earlier findings from studies by Bacon and McKinnon (2014), Blanco, Pino and Rodriguez (2010), Cross (2014), Dabarera et al. (2014), and Zhang (2008) also with low proficiency language learners indicated that technological and metacognitive strategies instruction have

beneficial impacts on the language learning process. In these cases, the beneficial effects of reducing anxiety, developing self-regulating behaviours and self-monitoring of their language development contributed to increased levels of self-efficacy leading to autonomous behaviours in language learning. Examples given here from transcript recordings, researcher observations and post-task reflections from Table 4.4 support the earlier findings from the studies cited.

Consistent with findings by Dörnyei (2005, 2009) the language learner's psychology played an important role in strategy use and learner perceptions were central to actions they took in the interactive tasks. Yet, findings do not provide conclusive evidence of the effectiveness of the awareness-raising or metacognitive strategies training according to the learner interactions, reflections and researcher observations in the current study. In teaching a process-oriented approach to listening amongst Japanese learners of English, Siegel (2013) determined that learner beliefs and attitudes affected the students' perception of the need for metacognitive training to improve their language ability. That is, as confirmed in Zhang's 2008 study, if learners perceive that the strategies are beneficial for developing their language learning skills, they are more likely to employ them. Therefore, learner variables such as their beliefs, attitudes and level of self-efficacy have been shown to effect individual strategy use which in turn affects the quality of the interactions of the group in collaborative tasks, as well as learners' individual engagement with technology and the level of their language processing.

Participants did not perceive a connection between in-class activities or instructions and the strategies embedded in the CALL tasks, yet most of these Spanish learners were actively engaged in using a small repertoire of strategies as they worked through the tasks. Findings from the post-treatment questionnaire shown in Figure 4.7 , transcriptions of the recorded task

interactions and post-task reflections further indicated that by the end the study learners perceived themselves to have higher levels of confidence in managing their learning. For example, when Laura reported in AR3 she was concerned about appearing "dumb":

> *"Yes, we all helped each other and spoke up when unsure I believe we allowed for a comfortable environment where no one felt dumb with any question. Better to ask and be right than wait and make a fool of oneself."*

In the post-task reflection on the final tasks of AR4, Laura reported:

> *"I believe it worked because we did the task at hand and learned how to maneuver around others doing the task at hand. We also used wordreference.com for unknown words. Whomever had the idea for one of the answers and the two others thought they were on the right track it was given to them. We all did very well communicate made this possible. As for myself I did well but happy to have others around to help me."*

By the end of the study Laura had increased her confidence and viewed her decisions about strategies as a means of improving her learning. This represents a shift from experiencing anxiety about her performance to applying strategies collaboratively and focusing on completing the target task.

This finding concurs with Smith and Craig's 2013 action research of learner autonomy in EFL in an undergraduate course in which explicit face-to-face metacognitive strategy instruction followed by interactions in CALL learning tasks benefitted learners. Smith and Craig found that learners increased their self-management skills in planning, monitoring and evaluating their own language learning.

5.3 Learners' beliefs and attitudes in the development of self-efficacy

The level of confidence and belief that learners have in their ability to perform language tasks in person-to-person, blended, and online environments affected their task performance and the strategies they employ to manage their learning. Participant responses in the pre-treatment questionnaire indicated that all believed they could learn a foreign language, and as a result of the higher level of self-efficacy initially, they may have been more receptive to using strategies to complete the tasks. No previous studies were found to support this initial level of confidence amongst first year college language learners when learning a foreign language for the first time, so it may be a new factor to consider. In my introduction to the thesis, I reported that in my observations of adult beginner language learners of previous years they appeared to lack a level of confidence in their abilities and experienced high levels of anxiety as early language learners of Spanish. In this study there were no obvious factors from the composition of the participants' groups that might explain this shift other than the fact that three of them were mature adult learners who may have been more highly motivated. It could be that the teacher time spent from the first day of class on creating a nurturing environment for the learners may have been a factor. The findings here also underline the importance of determining how learners feel about their language learning ability from the beginning to better inform and direct the teacher interventions. In this study, numerous opportunities for practice in-class, the collaborative nature of the TELL tasks, and the emphasis on a process-oriented nature of the approach adopted to learning and teaching were designed to reduce levels of anxiety and frustration. During the course of the study levels of confidence increased. As reported earlier in the chapter, both Carol and Laura increased their belief in their abilities and began to direct

their learning process applying their strategies which confirms findings in previous studies of positive correlations between self-efficacy beliefs and strategies used. For example, Graham's (2006) study amongst British high school learners of French found that drawing their attention to links between strategies instruction and learning outcomes increased their belief and confidence in overcoming difficulties in their language learning. Furthermore, as found in Navarro & Thornton's 2011 study of intermediate level students of English at a Japanese university, learners develop higher levels of self-efficacy as they gain confidence and become more comfortable in multimodal learning contexts.

These studies support Pajares' 2002 findings which stated that learners move towards more self-regulating behaviour as they increase their belief in themselves. In the cases of Graham and Navarro and Thornton, language learners were at the intermediate and advanced levels, and the present study expands our knowledge of these types of behaviours in particular as it contributes to our understanding of the early stage adult language learner.

Practitioner input contributed to creating a nurturing environment for self-belief in the process of language learning and in reducing the learner's concept of the classroom as a judgmental space. In this study, special attention was given to providing a safe and nurturing environment for the learners in which they felt comfortable experimenting with the language and taking risks through languaging in collaborative tasks. For example, we notice how Sarah and Ingrid focus on their collaborative dialogue and use self-talk to aid them in completing the task in AR3. The practitioner practice appeared to have a positive impact given that the participants were actively engaged in working together collaboratively with most of them employing strategies to help them complete the tasks as seen in examples of the audio recordings

in AR3 and AR4 from Chapter 4 by Dawn and Bev and Sarah, Laura and Ingrid. In previous studies Aragão (2011) and Pajares (2002) had found that if learners believe themselves to be inferior to idealized models and have difficulty accepting that errors are okay and part of the learning process, then self-efficacy will decrease and have a negative influence on their language processing. Therefore, the actions taken by the teacher-practitioner-action researcher in AR1 in this study to create an open and nurturing learning environment contributed to the participants' risk-taking behaviour and experimentation that is a foundational part of the language learning process.

5.3.1 Learner preparation and learner support. Building rapport by establishing a nurturing environment in the classroom, taking the time to prepare learners for the learning through cognitive and metacognitive strategies instruction, and providing consistent and ongoing support throughout the course of study were key components to creating a rich and effective learning experience for the beginner language learner. Action research cycle 1 became the preparation stage by first administering the pre-treatment questionnaire, the results of which determined that learners had limited knowledge of technological tools for language learning and therefore, little confidence in using them. At the same time, information about their beliefs and attitudes towards language learning on the pre-treatment questionnaire determined that learners might benefit from instruction in how to manage their language learning, even at this early stage. Therefore, it was not only the instruction on how to use technology, but also how to make learning choices that would be beneficial in reducing anxiety and directing them to become more strategic in these environments (Reinders & Hubbard, 2013). Numerous steps were taken to prepare learners for managing this additional cognitive load (Heiser, Stickler, &

Furnborough, 2013) to their language learning. Findings indicated that if adequate time for learner preparation and support when making further cognitive demands on beginner language learners is not given, feelings of anxiety and frustration would increase.

Administration of the pre-treatment questionnaire in this study provided information on each of the learners regarding their knowledge about, and experience with, language learning, using technology, and beliefs about foreign language learning in general. Understanding where learners are in terms of their knowledge, beliefs and abilities prior to designing an intervention provides important foundational information which should inform the intervention. Gathering information about what learners know and how they feel provided a foundation upon which to build activities that would enhance their self-efficacy and increase their confidence in, and level, of technological competency for CALL environments. Finding out about learners' prior knowledge and experience beforehand and not making assumptions about their technological competency and task performance abilities in CALL extends findings from previous studies (Tanaka-Ellis, 2010; Wiebe & Kabata, 2010) that had encountered gaps in the knowledge they generated due to limitations in the research design. This study extends previous research in that it includes meeting learners at the point of their prior experience and designing activities and tasks to extend and expand their knowledge and contribute to building their confidence in their language abilities. In that sense, the current study responds to Reinders and Hubbard (2013) who pointed to the fact that almost all existing studies in language learning show a need for extensive preparation, ongoing guidance and follow-up support in order for learners to make full use of the resources in CALL environments. By first bringing learners to a "level of readiness" (Hubbard, 2013, p. 165), learners gain confidence, skills and strategies which in turn build their self-efficacy.

In this study, the adult beginner language learner was faced with high cognitive loads in first year college language courses, as well as the affective filters of anxiety and limited confidence in the initial stages of the intervention. By achieving a level of readiness before making demands which would otherwise have hindered the language learning process, the participants were able to manage their learning and complete the assigned tasks in Spanish.

5.3.2 Socio-affective aspects of language learning. Inclusion of socio-affective strategies in both the instruction and data analysis is supported by Macaro's (2006) rationale for including these types of strategies in the realm of metacognitive strategies. That is, the findings in this study encountered learner actions such as *asking for help, giving help* and *positive self-talk* which in Lam's (2009) study in metacognitive strategies instruction for oral language development were argued to be elements of metacognition and therefore contribute to the self-management of the language learning. Considering the beginner language learning level of the participants, these aspects are necessarily foregrounded (Meskill & Quah, 2013), and are observed in the learners' reactions and reflections throughout the course of the study. The interactions with peers in these three socio-affective actions enabled learners to expand their knowledge which provides an argument for a more inclusive definition of metacognition as part of building self-efficacy especially at the beginner foreign language learner level.

Findings indicated that certain tasks generated more metacognitive strategies' use among participants than others, and that individual learner's approaches varied within the collaborative tasks. Monitoring during the study by the practitioner allowed for adjustments to both the sequencing and the task design according to the reactions of participants in the action research cycles. The findings in this study confirm research which suggests that learners' abilities to

perform tasks are determined more by the task type and design than by the contexts in which they occur (Gass, Mackey, & Ross-Feldman, 2011). Therefore, it may be that observed challenges in the tasks and the lack of certain strategic behaviours were due to the nature of the task itself rather than learner variables. A factor that must be considered for learners at low proficiency levels is that if a task is perceived to be too challenging or lacks clarity in its purpose, it may affect the learner's level of self-efficacy by increasing anxiety and causing frustration. For that reason, in shifting from product-oriented teaching to a process-oriented task-based language teaching approach in multimodal social contexts, we also shift the learner focus to the affordances available through interaction and the opportunities for strategic learning. This may account for the level of engagement of the participants in the study, their ability, for the most part, to complete the tasks, and the confidence to articulate more deeply the strategic moves they made to do so. Implications for language educators are that specific attention to the task type, design and choices in relation to the specific set of learners and their needs are a primary focus in a task-based process-oriented approach.

5.4 The development of learner autonomy

As stated earlier in this thesis, metacognition is foundational to the development of learner autonomy. Findings in this study demonstrate that over time, learners increased metacognitive awareness and were able to use metacognitive strategies to manage their learning during collaborative multimodal tasks and thereby demonstrate early development of learner autonomy. In that sense, metacognitive awareness-raising becomes the initial step towards becoming an autonomous learner. While individually the participants demonstrated autonomous behaviours, these occurred during interactions with peers in the collaborative tasks.

These findings express the social nature of the development of learner autonomy and the move from individual learner to connected learner emphasized by Crabbe, Elgort and Gu (2013) who argue that it is through socially-mediated learning opportunities that learners expand their role as autonomous learners.

All of the tasks in this study were conducted in socially-mediated multimodal contexts to explore how learner autonomy may develop through the learner interactions in collaborative tasks. In support of the prosocial nature of this study, Lewis (2013) states that prosocial behaviours are now expected in these collective learning environments and help learners become more autonomous and effective learners. Lewis's view of learner autonomy requires a new understanding of it as a "set of competences" (p. 211) which concurs with the inclusive view of metacognitive strategic actions as a foundational aspect of learner autonomy in this study. Therefore, by understanding the learner experience in social contexts and how autonomous behaviours are manifested, language educators can create learning spaces that will enhance the social and metacognitive conditions leading to the development of learner autonomy.

5.4.1 Collaborative dialogue. Since the first cycles of the study, the social nature of learner-learner interactions during the performance of a variety of collaborative tasks in multimodal environments has been a key source of data for analysis. Findings from the collaborative dialogues revealed important considerations for language processing at the beginner level, as well as demonstrating how the interactions contributed to the development of metacognitive awareness. For the practitioner-researcher, it is through the sociocultural approach that insights into learner behaviours were revealed and for the learner, the approach offered the "opportunities for scaffolding and collaborative dialogues which are the essence of

learning" (Lai & Li, 2011). That is, the collaborative dialogues acted as both actions and learning spaces for gaining new knowledge which provided a deeper understanding of the learner experience for the practitioner and opportunities for the development of metacognition leading to learner autonomy for the learner.

Findings indicated extensive use of the L1 in the learner-learner interactions which concurs with previous studies in which the L1 was used as a strategy to overcome communication difficulties in an intermediate level course (Nakatani, 2005) and more extensively in a case study conducted in a CALL context (Thomas, 2013). Participant use of the L1 in CALL tasks was not consistent across the groups nor tasks in this study, but it was often used to facilitate completion of the task. Rather than viewing the L1 as an interfering factor, there is an argument for viewing it as contributing to the learning and the development of L2 (Swain et al, 2015). As they state "we can only conclude that language learners rely heavily on their L1 to mediate complex problem-solving, and only at a later stage of target language development is the target language likely to be spontaneously used for problem solution." (p. 44). Piccardo (2014, 2017) makes the point that the L1 is an important part of the learner's repertoire and resource system which does in fact aid them in building proficiency and confidence over time. Therefore, for the adult beginner foreign language learner, expectations of target language use, particularly in collaborative tasks, need to be aligned with levels that will challenge but not deflate her. This speaks again to the necessity of paying close attention to the learner's knowledge, experience and needs when making cognitive demands in the target language.

5.4.2 Participative experience. The stance taken in this study is that through participative experience in multimodal environments learners gain new insights into their

language learning processes, which they can then use to make their learning more effective and self-managed through strategic actions. Prior to this study, and as stated earlier in the thesis, limited research had been conducted on the adult beginner foreign language learner experience and the effects of metacognitive awareness raising at this early stage of language development. New understanding and knowledge about their experience extends to provide insights and inform practices in teaching which will be discussed in the next section on the role of the practitioner-researcher.

In terms of theoretical approach, it is the shift to a focus on the sociocultural contexts of the learners and on the language learning process itself in CALL, which guided the emphasis on collaborative and social nature of the study. Findings from analysis of transcripts of the recorded interactions in multimodal tasks confirmed previous research (McNeil, 2014) which had found that the participation through dialogues did "serve as a major mediating source for cognitive development". Earlier in this chapter and in the findings from Chapter 4, many examples are cited for the participants' use of collaborative dialogue to increase linguistic accuracy in both structure and pronunciation, thereby increasing their ability in language processing of Spanish.

In addition, the findings in this study supported McNeil's 2014 SCMC study and Poza's (2011) ACMC research in that participants were not very anxious in completing the tasks in the multimodal environments. The audio transcripts of learner interactions did not reveal any anxiety-causing incidences while engaged in blended and online tasks nor did participants report feeling overwhelmed other than when the technology broke down. Evidence from the post-treatment questionnaire and shown in Figure 4.6 revealed that participants felt confident about using a variety of tools by the end of the study even though they had reported limited experience

in the pre-treatment questionnaire as shown in Figure 4.2. Furthermore, the researcher observations in class did not indicate increased anxiety about the contexts or tools themselves. This lack of anxiety in participating in CALL environments may also be the result of the changing nature of learners, many of whom already have established a social presence through social media outside of the language learning context. Findings suggest that they were able to transfer those skills to an online learning context. The study tasks were chosen according to their potential for processing of language through group participation and collaborative dialogues. In that sense, the methodology in the research design allowed for sufficient time to instruct and support learners in the use of technology and for collaborative engagement. The added cognitive demand of the Spanish language learning context had the effect of increasing the amount of dialogue and strategic behaviours in the participative experience. Findings support Macaro 2006 and Gao and Zhang (2011) who argue that the development of metacognitive awareness and applications of metacognitive strategies cannot exclude the social contexts in which the cognition takes place. To facilitate opportunities for participative experiences and the development of metacognitive through a more collaborative hands-on use of CALL demands that close attention be paid to both the design of the tasks and the contexts for which they are created.

5.5 Holistic approaches to classroom-based action research

To "capture the heart of the learner voices" (Conole, 2008, p. 126) is a most succinct phrase that best describes what lies at the core of classroom-based action research. Findings from the study provided the insights into the beginner foreign language learner experience in TELL environments that would enable such actions with the aim of building self-efficacy and

leading to the development of learner autonomy. By employing a more holistic approach in the research design, methodology, pedagogy, and data analysis it became possible to achieve this aim. It was through the "unpacking of what learners do moment-by-moment in CALL tasks and activities" (Levy, 2015, p. 554) over a significant period of time that rich and valuable data for the practitioner can be gained. That is, understanding learners' beliefs and attitudes about language learning as recorded in transcripts, their responses to questionnaires and their reflections, and establishing relationships so that learners viewed the teacher as a source of connection, instruction, information, and support, were all interconnected throughout the four cycles of the action research.

This type of qualitative inquiry into the reality of the learner experience (Levy, 2015) requires the engagement of a number of overlapping and interconnecting components focusing on participants throughout the study. Challenges to any of the components result in the need to make adjustments and adaptations to the instructional design which was the case here as a result of the technological glitches that occurred in early action research cycles, and learner variables that affected the group dynamics in some tasks. In this study, as has been found in previous research, these unanticipated challenges caused difficulties in collecting data on metacognition in some cases, and in adhering to the demands of completing course content in others (Thompson, 2012). In this inquiry as an insider action researcher employing a holistic approach, the rapport and relationship that I had been built with the learners served to make the revisions to the inquiry much easier and less stressful for them.

Getting close to the reality of the learners through employing a holistic approach, the rich data in the findings provided deeper and more comprehensive information on learner behaviours

in TELL contexts which will serve to inform the choices in learning resources and contexts that the practitioner will make with the aim of benefitting the learner experience.

5.5.1 Teacher strategies. As depicted in the conceptual diagram of the action research cycles in Figure 3.1 and the overview of the three-stage research design in Table 3.1, action research cycle 1 (AR1) was dedicated to building relationship, establishing rapport with the learners, building technological competence and initiating a social constructivist pedagogical approach through a variety of learning tasks in multimodal environments. As a practitioner, it is understood both intuitively and professionally that it is necessary to first create conditions that engage the learners to build their capacity, and then establish and maintain a nurturing learning environment to positively "mobilize their energy" (Stringer, 2014, p. 23). This strategy is an essential and foundational component not only to this study but in any learning situation. As evidenced in the results chapter, the groups and individuals were engaged with the tasks, and over the action research cycles, the majority of the participants were positively affected by the interventions and became metacognitively aware even as early stage foreign language learners. Evidence of increased self-efficacy was found, as well as demonstration of some self-regulating behaviours that indicated a higher level of confidence to become autonomous in some cases. If the learners had not felt safe or supported by the practitioner throughout the process, the outcomes would have been quite different and the data would not have given an accurate picture of the learning potential of the participants.

In addition, building relationships and establishing rapport with the learners allowed them to feel comfortable to express concerns about their language learning such as frustration and performance anxiety or issues such as time constraints and technology breakdowns when

working on tasks. Learners were able to be actively involved in the process knowing they could rely on support from the teacher in a reciprocal learning experience.

At the same time, not all learners reported benefits from participating in the study as in the case of Bev who reported in the interview that she did not find the strategies instruction beneficial but that she was concerned for the researcher and for providing information for the researcher's study. It could be argued then that any information gathered from this participant during the learning tasks would not be credible in terms of evaluating metacognitive strategies use and that establishing a closer relationship with this participant had interfered with the study. Yet, her response provided me with insights into the emotional state, and therefore the behaviours, of this participant who followed her initial statements in the interview with expressions of very real feelings of appreciation to the point of breaking down in tears. I would argue that had I been a researcher observing behaviour from outside the classroom with no established relationship, I would not necessarily have gained this knowledge and understanding of the participant which in turn might have affected the quality of my data analysis.

Following the sociocultural theoretical approach to language learning, scaffolding learners as a teaching strategy guided the design of the tasks in creating both activities that learners could accomplish themselves and others that were challenging but not beyond their ability to complete in collaboration with peers. The effects of this type of engagement were evidenced in the participant post-task reflections and in the task transcripts. What is significant about the findings in these areas is that they provided insights into the ways in which learners describe and interpret the events, as well as into the dynamic construction of knowledge in social learning environments. Furthermore, these insights allowed the teacher to understand the

different perspectives of the participants and gain the understanding that individuals will interpret the same information differently according to their experiences, worldviews and cultural backgrounds (Stringer, 2014, p. 75). It is from these different perspectives that both participants and teacher perceive reality and take action according to their understanding of it.

Employing a pragmatic approach to constructing knowledge based on pedagogically sound principles and gaining an understanding of the social world, in this case, the participants' language learning environment, contributed to enhancing the learning experience and building further trust between teacher and learner. This knowledge is also driven by the teacher's understanding that the learner ~~needs to~~ must perceive a need to "get there", and that by offering the learner ~~with~~ the flexibility, freedom and support to focus on the task, she/he may ~~and~~ deepen their understanding working collaboratively and dialogically with others (Biggs, 1999, p. 61).

The key characteristics of action research are phenomenological (focusing on people's actual lived experience or reality), interpretive (focusing on their, participant and action researcher, interpretation of acts and activities) and hermeneutic (focusing on how people make meaning of events in their lives). None of these processes occurs in a "socially neutral setting" (Stringer, 2014, p. 37). As Stringer already noted, the processes are part of an environment that is, for the most part, created by the teacher and based, at least in part, on the strategies that she will employ and change over time according to the actions of the participants and with the objective of improving the learning experience.

What may occur is that a teacher may give information regarding strategies or metacognitive awareness raising activities early on as part of a particular point in the syllabus. What has been learned in this study is that when focusing on the phenomenological aspects of

the learning experience, especially amongst early language learners, ongoing activities and regular reminders need to remain part of the syllabus, and that is not necessarily the case in first year foreign language learning courses at the college level today.

5.5.2 Role of the teacher-practitioner-action researcher. The contribution of the TPAR methodology to our knowledge about beginner foreign language learners' metacognitive knowledge, awareness and strategies is based on what is essentially a reciprocal relationship between practitioner and participant. Two interacting and interconnected aims of classroom-based action research are to capture the heart of the learner's voice and to locate the practitioner at the heart of the process (Conole, 2008) in a holistic approach. In this manner, the teacher emerges not only as a reflective practitioner, but also as a generator of knowledge and contributor to new theories of practice as a practice-based researcher. That is, the teacher has the capacity to close the gap between the roles of theorist and practitioner (Kemmis, 2009; Leitch & Day, 2000). In the context of this study, the understanding of, and ideas on, second language acquisition, the use and value of technological resources for learning, and the patterns of the relationship between learner and practitioner-researcher were all established by the practitioner-researcher and guided the decisions made, and the interventions enacted, in each of the action research cycles. In so doing, connections between theory and practice were established while at the same time observing action research's central role of "ongoing and evolving action as part of that process" (McAteer, 2013, p. 12).

These cyclical and reciprocal interactions between action and theory demonstrate important linkages between the research conducted and the findings. That is, the findings from qualitative data that were initially used to provide insight into the learner experience then

became the catalyst for change in subsequent interventions which yielded deeper qualitative data, and so on as demonstrated in Table 4.4. Through an inductive process of discerning meaning and emerging themes from the data, a thematic "picture of practice" was revealed, thus resulting in a more "theory-generative process" rather than theory testing analysis (McAteer, 2013). Through this process, the teacher-practitioner-action researcher maintains the rigour necessary, as specified in the literature review and methodology chapters, to form a methodologically robust form of practice-based research. Such a naturalistic and interpretive approach, as has been detailed in the methodology chapter and carried out in the action research, expands both hermeneutic and critical knowledge, that is, the qualitative data generated from practical action by both participants and the TPAR provided significant meaning for praxis.

A key concept emerging from the study is that praxis itself may be understood as a way of both understanding and generating knowledge about the complexities of practice with action research understood as a form of process realized through "interpretation in context" (McAteer, 2013, p. 22). This concept is significant in that AR has the potential then to become transformative for both practice and how educators understand their practice and the actions they take. In AR, while generating educational knowledge in a local setting, it may have implications for broader contexts in education. At the same time, one must acknowledge that these processes are complex and dynamic and outcomes will always depend on the issues, contexts and participants involved.

As stated in earlier chapters, the multimodal context in this study refers to both the multiple modes of learning resources (textual, visual, aural, digital and social) and learning

contexts (person-to-person and TELL). Participants had no or very limited experience with using technology for learning as reported by them in the pre-treatment questionnaire shown in Figure 4.2. They were given explicit instruction on the use of the *iLrn* language learning software which included the e-book format of the printed textbook used in the course, *¡Hola, amigos!*, and in-class practice with YouTube and open educational resources on the Internet. Table 3.5 shows that the tasks were conducted in a variety of learning contexts using different resources in the cycles AR2, AR3 and AR4. As shown in Table 3.5, task 1 in AR4 used textual (question sheet to be completed) visual and aural (YouTube), social (information sharing and debriefing in face-to-face setting) while in task 2 a digital format was used with the videoconferencing tool *Collaborate.* Two of the eight participants, Eva and Dawn, expressed feeling stressed in AR3 and AR4 respectively AR2 and AR3 in their post-task reflections about the use of technology. As the results from chapter 4 indicated, most of the participants increased both their confidence in using technology as a learning tool and their confidence in their ability to learn and manage their learning. With explicit instructions and clear expectations in these environments, as well as ongoing support throughout the study tasks, most of the learners were able to engage with the tasks in a productive and positive manner as reported in other sections of this chapter.

The challenge of conducting action research in the real-time context of the TELL classroom provided insights into how its benefits, and its limitations in terms of data collection and analysis, might be considered when designing future research. For the practitioner action-researcher planning to conduct such a study, you may find the following recommendations useful:

1. Write a clear statement about the phenomena you wish to study, and include

   In it your purpose and process. Refer to it often throughout the study and check

to see how representative it is of the actions you are taking. You may need to adapt it according to learner responses or to limitations in the learning environment.

2. Get to know your learners (participants). Design data collection instruments that will aid you in understanding their learning experiences, reactions and actions. Do frequent checks (informal face-to-face, online chat or written reflections) so that you can become aware of any unexpected challenges that might affect the validity of the data.
3. If possible, keep a diary in the classroom so that you can make quick notes or record relevant learner actions in real-time or immediately after the class.
4. If it is an exploratory study, include several open-ended questions so that learners have the opportunity to have their voices heard and to express their feelings and thoughts.

For this language teacher-researcher in higher education, there is a demonstrated the need for training for early language learners to develop the metacognitive skills to advance their language acquisition. In addition, if the pedagogical tasks are to take place in technology-enhanced language learning environments, it is essential to first determine, then develop and enhance the digital literacy of the learners.

Given that the gap that still exists between understanding and enhancing the learning experience and practitioners' underlying assumptions about learners and based upon the results from this study, Figure 5.1 proposes a framework for pedagogical task design to encourage learner benefit in their learning experience in TELL classrooms:

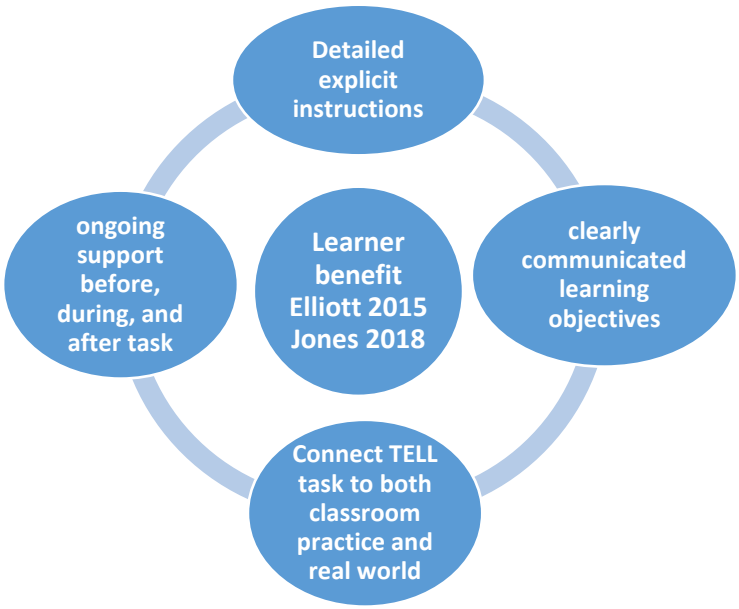


Figure 5.1 Proposed practitioner framework for pedagogical task design in TELL for learner benefit

5.6 Chapter summary

As stated at the beginning of this chapter, the emphasis during the study was to achieve an understanding of the *learner experience and perceptions*, to increase levels of *self-efficacy and the development of learner autonomy* through metacognitive strategic learning and reflection. This knowledge expands our understanding of the adult beginner foreign language learner, an area which to date has received very limited research. Findings on the effects of metacognitive strategies instruction on learners' strategy use in TELL revealed that while participants did not make the connection between in-class metacognitive strategies instruction and on-task strategic behaviour, they did apply metacognitive strategies implicitly. Even though they could not identify the specific strategies they used, analysis of the transcripts of learner interactions in multimodal environments did reveal a positive impact from the strategies instruction. Over the three month period, the repertoire included more self-regulating behaviours and early developments in

learner autonomy, all of which contributes to the body of knowledge about low proficiency language learners' use of metacognitive strategies.

The psychology of the individual language learner must be considered as that plays an important part in the beliefs and attitudes about language learning in general, and in this study, it was an important factor in the success and or challenges in working with others on collaborative tasks. These characteristics are important factors in determining how effective awareness raising or the use of strategies to facilitate their learning may be. Previous studies have found that if learners perceive benefits in strategic behaviours, then they are more likely to employ them, and this was the case here. Learner variables have an effect on individual learning and also affect the quality of the group interactions in both face-to-face and online environments.

In addition, the beliefs that learners hold about themselves and their confidence in their ability to perform language tasks affects the decisions and actions they take as individuals and in group interactions. As found in this study, all participants indicated that they believed they could learn a foreign language which may account in part for their receptiveness to learning about strategies and employing them. The use of strategic action had a positive impact on both their ability to perform the tasks in Spanish and to guide and monitor their language development during task interactions.

The practitioner-researcher plays an important role in creating a nurturing learning environment, designing a variety of tasks that facilitate language processing, and providing support and guidance throughout the study. Building rapport with the participants and giving considerable attention to preparing learners for the language learning and for working in technology-mediated environments provided a fundamental base upon which subsequent

actions and interventions could be enacted. This study emphasized the importance of first finding our learners' prior knowledge and experience in using technology for language learning and then facilitating and guiding instruction according to the needs of the learners. As a result of the teacher-researcher's experience in the study, she proposed a framework for designing pedagogical tasks in TELL environments in order to act so as to attain the optimal learner benefit as presented in Figure 5.1.

The argument for including socio-affective aspects in the definition of metacognition is supported by the social nature of the qualitative inquiry which focused on collaborative dialogues and learner-learner interactions. The CALL tasks were designed to promote the interaction and dialogues towards the learners' processing of language, and to them taking strategic actions to facilitate that processing. Therefore, by taking independent actions to facilitate their learning, autonomous behaviours developed over time, and this is shown in the results by the transcripts of learner-learner interactions in the multimodal environments, their post-task metacognitive reflections, and the pre- and post-treatment questionnaires.

Through analysis of the collaborative dialogues and the participative experience, these College language students of Spanish reduced their anxiety levels and utilized specific metacognitive strategic behaviours, particularly the socio-affective actions such as asking for help, giving help and thinking aloud. At the same time, the strategy of planning was most prevalent which supported previous research studies of mature-age early language learners.

The multi-pronged approach of qualitative inquiry, the application of sociocultural theory to the design of learning tasks, multimodal environments and metacognitive strategies instruction and reflection used in holistic classroom-based action research allows for richer data

and deeper understanding of the learner experience. As action researchers, language teachers are thereby placed in a central role to gain precise knowledge about the language learner perceptions and actions, and the closer we can come to the reality of the language learner the better able we are to take steps to improve and enhance it.

At the same time, findings also indicated that time constraints place such demands on the current first year curriculum that it does not allow for adequate learner training in integrating technology in a pedagogically sound way or for developing learner autonomy. The implications of this study for first year college foreign language study are discussed in the conclusion chapter which follows.

CHAPTER 6 CONCLUSIONS AND IMPLICATIONS

6.1 Conclusions

In getting as close as possible to the learner's reality and experience as Conole (2008) put it so aptly, this action research managed to "capture the heart of the learner voices" (p. 126). The research provided important insights into key factors involved in enhancing adult beginner language learning experiences in a multimodal environment. The language learners did use both cognitive and metacognitive strategies, and over the four months of action research, as they gained confidence, they tended to take more self-regulating actions to manage their learning. The scale of achievements may not have been possible without the intervention of the teacher-researcher who presented a variety of activities and materials to promote metacognitive strategies on an ongoing basis. A deeper understanding of how the learner processed information and shared it with peers became possible by participating with the learners and studying their actions in the various tasks, through the dialogues and post-task reflections. As a result, the teacher-researcher was able to take the necessary steps to enhance the learner experience, and over time, both learner and teacher became better able to make informed decisions about their learning and teaching. Furthermore, the proposed framework for supporting optimal learner benefit in pedagogical task design in TELL environments presented in the previous chapter may be applied to guide future facilitators in the technology-enhanced language classroom.

Current trends and research in language education in general are towards the social nature of language learning and collaborative language processing through engagement with purposeful and meaningful tasks carried out in both face-to-face and technology-mediated

environments. The study demonstrated that this type of collaborative engagement is conducive to the development of self-efficacy and learner autonomy, an area which has not been explored in previous studies amongst early foreign language learners. The participant Sarah embodied the early development over time of self-efficacy and learner autonomy in the following excerpt from the transcript of her end-of-study interview:

> ***"… I realized if I thought about it and figured it out, I had the skills to actually do it which was mind-blowing…oh I've just been selling myself short, like I can do this, …It's super overwhelming and I tend to just look at it that way and get panicked but if I just calm down and I'm like you know--take this step by step calmly, think about it, you know the answer, like just figure it out step by step…so I think just taking a deep breath and knowing that as long as I understand the foundation of this which I usually do, I can do this and not sell myself short…" (p. 243, author's emphasis)***

One important finding from the study was the impact that each learner's perceptions and experience will have in any learning context which revealed the need to consider individual learners when designing multimodal tasks. Additionally, as shown in this study in multimodal environments, individual learner characteristics affect the dynamic of a group and the quality of its interactions. In further consideration of the characteristics of the individual learner, the study also demonstrated that assumptions cannot be made about the level of their technological competency when the learning takes place in multimodal environments. We need to recognize that whatever tool we choose or task we design in multimodal environments, the learner needs training, support, and guidance in the "how" of it. Learners in this study were developing certain skills in digital literacy and metacognition alongside their Spanish language processing. Beyond

the tools chosen and individual task design, careful attention must be paid to the quality of the interactivity between technology, learner and the language in order to provide optimal learning environments for greater learner benefit.

This study detailed a methodology for exploring how to enhance the adult beginner language learner experience, and results have shown that it can be accomplished by employing a variety of data collection instruments that will give a fuller and deeper picture of the learners' experience. The conceptual framework upon which the methodology was based encompassed multiple interacting components focused on the learner and their strategic actions and interactions. An understanding of the strategic processes and experiences of beginner language learners in technology-mediated environments provided foundational knowledge and direction for instruction in facilitating metacognitive strategies. The multiple interacting components in the conceptual framework of the action research, research methodology and classroom instruction not only contributed to that knowledge, it expanded our understanding of the whole language learner experience. Therefore, if we are to gain the understanding and knowledge of our language learners so that we can help them to become more effective and autonomous, more holistic approaches to classroom-based action research should be followed.

6.2 Limitations of the study

This study can be categorised as a small scale specialized study on the impact of metacognitive strategies instruction and the use of metacognitive strategies in TELL environments, by adult beginner foreign language learners in a Canadian College TELL context. The findings are therefore specific to the characteristics of such learners. The Action Research model employed in the methodology addressed the perceived problems of various affective

filters to learning, and the previous lack of explicit strategic processing and technological competency of language students. The research questions provided parameters for exploring those language-learning characteristics. Other factors of language learning such as the use of L1 or group dynamics in collaborative work were not considered as the central focus of the study, which focused on building metacognitive awareness-raising ~~and~~ strategies, and self-efficacy in students developing learner autonomy. As defined and framed in the literature and methodology, this exploratory study was conducted using mainly qualitative inquiry as a means of understanding a particular context. Therefore, it does not presume to provide definitive answers beyond the scope of the research design. It did not explore the learners' continued language study beyond the beginner stage. Therefore, the longitudinal effects of metacognitive awareness-raising on participants may be an area for further research. A design recommendation for future studies would include more frequent reference to relevant interactions between researcher and individual participants at various points throughout the study, giving more prominence to the learner's voice and thereby furthering evidence of insights and deeper knowledge gains.

6.3 Implications for research and strategic language teaching practice

Action research in contemporary tertiary language education in Canada has the potential to expand our knowledge and understanding of the language learning experience and the use of technology. The need for student engagement and direction towards more collaborative models of learning that respond to that need are being more deeply examined as part of the changing landscape in higher education with calls for more practice-based evidence in teaching. To date, there have been limited advances in research in the higher education sector on higher levels of

interaction and metacognition in the early stages of language learning amongst adult beginner foreign language learners. This study provides direction for potential for further research developing multimodal language learning environments. The conceptual framework of the study could be applied to other levels and other languages. Future researchers in this area may want to consider further refinement of the data analysis procedures and processes employed in this study in order to gain deeper and broader insights into the language learner experience.

Technology and multimodal or flexible delivery need to progress incrementally in their roles as resources and contexts for learning before ongoing research of strategic metacognition amongst language learners is a reality. Active learning classroom environments that are equipped with consistent and reliable access to technology and digital tools should be developed. At Okanagan College, the ESL and Modern Languages Departments collaborated on a successful proposal to establish the Okanagan College Language Centre, an active learning classroom equipped with advanced wireless access and a variety of digital tools. Prior to this innovation and, at the time of this study, technological problems were common and a source of complaint amongst faculty and students alike at the institutional level at Okanagan College. Since then, and in response, the institution has taken steps through its new strategic plan to overhaul the entire system to bring it up-to-date and in-step with current technology practices and access. Multimodal active learning environments have the potential for collaborative interactions and learning tasks between colleges in Canada, as well as with institutions in the target language home countries.

New learning materials such as language learning platforms and tools (*Campus.difusión, iLrn, MySpanishLab, Supersite, Quizlet*) and open educational resources (OERs) follow current

established standards for language learning and emphasize the pedagogically sound integration of technology to facilitate and promote learners' language processing and development. In addition to facilitating language development, CALL environments provide learning spaces conducive to learner-learner interactions which, in turn, reduce the anxiety about performance often experienced by early stage learners. In reducing the affective filter, early language learners are better able to pay attention to the management of their learning by applying metacognitive strategies such as planning, monitoring, asking for help and seeking external resources.

While research has shown that TELL is an effective tool for language learning in today's digital age, it has not yet been fully applied to foreign language processing at the early learner stage. Learners are aware of and are receptive to the potential for learning with technology but the instructor needs strategic time to upskill herself and to prepare and train them in the skills. Therefore, if CALL is to be integrated into classroom pedagogy, the syllabus must allow for effective preparation time. New directions and developments in the first year college foreign language syllabus would need to address the issues of time and training in order to facilitate explicit strategy instruction. By making technology, time and training an integral part of the first year college foreign language curriculum, academic teachers will be providing learners with coping and learning skills that have the potential for positive impact beyond the language learning classroom.

Finally, learner experience, new language standards, research on strategic learning and language processing, supported by new technological resources present challenges to existing teaching practices. A shift in the pedagogical approach centred on learner needs makes adapting the current foreign language syllabus in higher education a pressing reality.

References

Alber, S. (2011). *Toolkit for action research*. Lanham, Maryland: Rowan & Littlefield.

Allen, S. (2003). An analytic comparison of three models of reading strategy instruction. *International Review of Applied Linguistics, 41*, 319-338.

Alm, A. (2013). Extensive listening 2.0 with foreign language podcasts. *Innovation in Language Learning and Teaching, 7*(3), 266-280, http://dx.doi.org/10.1080/17501229.2013.836207

Anderson, N.J. (2008). Metacognition and good language learners. In Carol Griffiths (Ed.) *Lessons from good language learners* (pp.99-109). Cambridge: Cambridge University Press.

Andrés-Martínez, C. (2012). Developing metacognition at a distance: sharing students' learning on a reflective blog. *Computer Assisted Language Learning*, *25(*2), 199-212.

Angrosino, M., & Rosenberg, J. (2011). Observations on observation. *The Sage handbook of qualitative research*, *4*, 467-478.

Antón, M. (2011). A language in focus: a review of recent research (2000-2008) on applied linguistics and language teaching with specific reference to L2 Spanish. *Language Teaching*, *44*(1), 78-112.

Aragão, R. (2011). Beliefs and emotions in foreign language learning. *System*, *39*, 302-313.

Bacon, L., MacKinnon, L. (2014). A flexible framework for metacognitive modelling and development. Proceedings of the 9th International Conference on e-Learning: ICEL 2014, Technical University Federico Santa María, Valparaiso, Chile, 26-27 June 2014, edited by Dr. Teresita Arenas Yáñez, Dr. Oscar Saavedra Rodriguez, Dr. Paul Griffiths.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioural change. *Psychological Review*, 84(2), 191-215.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37(2), 122.147.

Bandura, A. (2006). Guide for constructing self-efficacy scales. In F.Pajares & T.Urdan (Eds.), *Self-efficacy beliefs of adolescents*, (pp.307-337), Greenwich, CT: Information Age Publishing.

Baralt, M., Morcillo Gómez, J. (2017). Task-based language teaching online: a guide for teachers. *Language Learning & Technology*, 21(3), 28-43. Retrieved from http://llt.msu.edu/issues/october2017/baraltmorcillogomez.pdf

Bartimote-Aufflick, K., Bridgeman, A., Walker, R., Sharma, M., Smith, L. (2016). The study, evaluation, and improvement of university student self-efficacy. Studies in Higher Education, 41(11), 1918-1942. DOI: 10.1080/03075079.2014.999319

Bernat, E., Carter, N., Hall, D. (2009). Beliefs about language learning: exploring links to personality traits. *University of Sydney Papers in TESOL*, 4, 115-148.

Biggs, J. (1999). What the student does: teaching for enhanced learning. *Higher Education Research & Development*, 18(1), 57-75. DOI: 10.1080/0729436990180105.

Blake, R.J. (2013). *Brave new digital classroom: technology and foreign language learning. (2nd ed.)* Washington, DC: Georgetown University Press.

Blake, R. (2016). My first CMC article revisited: A window on Spanish L2 interlanguage. Language Learning & Technology, 20(2), 162-165. Retrieved from http://llt.msu.edu/issues/june2016/blake2.pdf

Blake, R. (2016). Technology and the four skills. Language Learning & Technology, 20(2), 129–142. **https://dx.doi.org/10125/44465**

Blanco, M., Pino, M., Rodriguez, B. (2010). Implementing a strategy awareness raising programme: strategy changes and feedback. *Language Learning Journal*, *38*(1), 51-65.

Bradbury, H., Reason, P. (2003). Action research: an opportunity for revitalizing research purpose and practices. *Qualitative Social Work*, 2(2), 155-175.

Bradbury-Huang, H. (2010). What is good action research? Why the resurgent interest? *Action Research*, 8(1), 93-109.

Brown, H.D. (2007). Teaching by principles: an interactive approach to language pedagogy (3rd Edition. New York: Pearson Longman.

Bueno-Alastuey, M.C. (2011). Perceived benefits and drawbacks of synchronous voice-based Computer-mediated communication in the foreign language classroom. *Computer Assisted Language Learning, 24*(5), 419-432.

Bueno-Alastuey, M.C. (2013). Interactional feedback in synchronous voice-based computer mediated communication: effect of dyad. *System, 41*, 543-559.

Burns, A. (2005). Action research: an evolving paradigm? *Language Teaching*, 38, 57-74.

Burns, A. (2011). Action research in the field of second language learning and teaching. In Eli Hinkel (Ed.). *Handbook of Research in Second Language Teaching and Learning Volume II.* NY: Routledge.

Cain, T. (2011). Teachers' classroom-based action research. *International Journal of Research & Method in Education 34*(1), 3-16. Retrieved March 29, 2015. http://dx.doi.org/10.1080/1743727X.2011.552307

Carr, N.T., Crocco, K., Eyring, J.L. Gallego, J.C. (2011). Perceived benefits of technology enhanced language learning in beginning language classes. *The IALLT Journal,* 41(1), 1-32.

Chamot, A. (2005). Language learning strategy instruction: current issues and research. *Annual Review of Applied Linguistics,* 25, 112-130.

Chamot, A.U. (2008). Strategy instruction and good language learners. In Carol Griffiths (Ed.) *Lessons from good language learners* (pp.266-281). Cambridge: Cambridge University Press.

Chapelle, C. (2007). Technology and second language acquisition. *Annual Review of Applied Linguistics, 27*, 98-114.

Chapelle, C. (2009). The relationship between second language acquisition theory and computer-assisted language learning. *The Modern Language Journal*, *93*, 741-753.

Chenoweth, N.A., Ushioda, E., Murday, K. (2006). Student learning in hybrid French and Spanish courses: an overview of language online*. CALICO Journal*, *24*(1), 115-145.

Chun, D., Smith, B., Kern, R. (2016). Technology in language use, language teaching, and language learning. *Modern Language Journal*, 100(S1), 64-80.

Cohen, A. (2011). *Strategies in learning and using a second language (2nd Ed.)*. New York: Routledge. .

Cohen, A.D. (2014). *Strategies in learning and using a second language* (2nd Ed.) New York: Routledge. (Revised)

Collentine, K. (2009). Learner use of holistic language units in multimodal task-based synchronous computer-mediated communication. *Language Learning & Technology*, *13*(2), 68-87.

Collentine, K. (2010). Measuring complexity in task-based synchronous computer-mediated communication. In Michael Thomas & Hayo Reinders (Eds.) *Task-based language learning and teaching with technology* (pp.105-128). London: Continuum

International Publishing Group.

Colpaert, J. (2006). Pedagogy-driven design for online language teaching and learning. *CALICO Journal, 23*(3), 477-497.

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), 73-99.

Conole, G. (2008). Listening to the learner voice: the ever changing landscape of technology use for language students. *ReCALL*, *20*(2), 124-140. DOI: 10.1018/S0958344008000220.

Convery, A. (2014). Classroom-based action research. In David Coghlan & Mary Brydon-Miller (Eds.) *The Sage Encyclopedia of Action Research (pp.104-108).* London: Sage Publications. Retrieved from http://dx.doi.org/10.4135/9781446294406.n40

Council of Europe. (2001). *Common European Framework of Reference for Languages: learning, teaching, assessment (CEFR).* Retrieved July 7, 2019. https://www.coe.int/en/web/common-european-framework-reference-languages

Council of Europe. (2018). *Common European Framework of Reference for Languages: learning teaching, assessment. Companion volume with new descriptors*. Retrieved July 7, 2019. https://rm.coe.int/cefr-companion-volume-with-new-descriptors-2018/1680787989 pp.22-33.

Crabbe, D., Elgort, I., Gu, P. (2013). Autonomy in a networked world. *Innovation in Language Learning and Teaching, 7*(3), 193-197. DOI: 10.1080/17501229.2013.836201

Cross, J. (2009). Effects of listening strategy instruction on news videotext comprehension. *Language Teaching Research*, *13*(2), 151-176.

Cross, J. (2011). Metacognitive instruction can help less-skilled listeners. *ELT Journal,* 65,

408-416.

Cross, J. (2014). Promoting autonomous listening to podcasts: A case study. *Language Teaching Research*, *18*(1), 8-32. DOI: 10.1177/1362168813505394.

Dabarera, C., Renandya, W.A., Zhang, L.J. (2014). The impact of metacognitive scaffolding and monitoring on reading comprehension. *System*, *42*, 462-473.

Denzin, N., Lincoln, Y. (2011). Introduction: the discipline and practice of qualitative research. In Norman K. Denzin & Yvonna S. Lincoln (Eds.). *The Sage handbook of qualitative research (4th Ed.*) (pp.1-19). Thousand Oakes: Sage.

Dörnyei, Zoltán. (2005).*The psychology of the language learner: individual differences in second language acquisition.* London: Routledge.

Dörnyei, Zoltán. (2009).*The psychology of second language acquisition*. Oxford: Oxford University Press.

Dornyei, Z. & Ryan, S. (2015). *The psychology of the language learner revisited*. New York and London: Routledge.

Doughty, C.J. and Long, M.H. (2003). Optimal psycholinguistic environments for distance foreign language learning. *Language Learning & Technology*, *7*(3), 50-80. Retrieved from http://llt.msu.edu/vol7num3/doughty/

Egbert, J., Huff, L., McNeil, L., Preuss, C., Sellen, J. (2009). Pedagogy, process and classroom context: integrating teacher voice and experience into research on technology-enhanced language learning. *The Modern Language Journal*, *93,* 754-768.

Elliott, J. (2007). Assessing the quality of action research. *Research Papers in Education, 22*(2), 229-246. DOI: 10.1080/02671520701296205. http://dx.doi.org/10.1080/02671520701296205

Elliott, J. (2015). Educational action research as the quest for virtue in teaching. *Educational Action Research, 23*(1), 4-21. Retrieved March 29, 2015. http://dx.doi.org/10.1080/09650792.2014.994017

Ellis, R. (1999). *Learning a second language through interaction*. Philadelphia, PA: John Benjamins Co.

Ellis, R. (2003). *Task-based language learning and teaching*. Oxford: Oxford University Press.

Figura, K., Jarvis, H. (2007). Computer-based materials: a study of learner autonomy and strategies. *System, 35*, 448-468.

Fischer, R. (2007). How do we know what students are actually doing? Monitoring students' behavior in CALL. *Computer Assisted Language Learning*, *20(*5), 409-442, DOI: 10.1080/09588220701746013

Flavell, J. (1979). Metacognition and cognitive monitoring. *American Psychologist, 34*(10), 906-911.

Gao, X., Zhang, L.J. (2011). Joining forces for synergy: agency and metacognition as interrelated theoretical perspectives on learner autonomy. In Garold Murray, Xuesong Gao, Terry Lamb (Eds.) *Identity, motivation and autonomy in language learning (pp. 25-41).* Bristol, UK: Multilingual Matters.

Garrett, N. (2009). Computer-assisted language learning trends and issues revisited: Integrating innovation. *The Modern Language Journal, 93 (focus issue),* 719-740. DOI:10.1111/j.1540-4781.2009.00969.

Garrison, D.R., Vaughan, N.D. (2008). *Blended learning in higher education: framework, principles and guidelines.* San Francisco, CA: Jossey-Bass.

Gass, S., Mackey, A., Ross-Feldman, L. (2011). Task-based interactions in classroom and laboratory settings. In P. Robinson (Ed.), *Task-based language learning* (pp.189-220). Malden, MA: Wiley-Blackwell.

Genat, B. (2009). Building emergent situated knowledges in participatory action research. *Action Research*, 7(1), 101-115.

Gibbs, P., Cartney, P., Wilkinson, K., Parkinson, J., Cunningham, S., James-Reynolds, C., Zoubir, T., Brown, V., Barter, P., Sumner, P., MacDonald, A., Dayananda, A., Pitt, A. (2016). Literature review on the use of action research in higher education. *Educational Action Research, p.1-20.* DOI: 10.1080/09650792.2015.1124046.

Golonka, E.M., Bowles, A.R., Frank, V.M., Richardson, D.L., Freynik, S. (2014). Technologies for foreign language learning: a review of technology types and their effectiveness. *Computer Assisted Language Learning, 27*(1), 70-105. Retrieved from http://dx.doi.org/10.1080/09588221.2012.700315

González-Lloret, M., Ortega, L. (2014). Towards technology-mediated TBLT: an introduction. In Marta González-Lloret and Lourdes Ortega (Eds.), *Technology-mediated TBLT: researching technology and tasks (p*p.1-22). Philadelphia, PA: John Benjamins.

Graham, S. (2006). A study of students' metacognitive beliefs about foreign language study and their impact on learning. *Foreign Language Annals, 39*(2), 296-309.

Greenwood, D. (2012). Doing and learning action research in the neo-liberal world of contemporary higher education. *Action Research, 10*(2), 115-132.

Griffiths, C. (2008). Strategies and good language learners. In Carol Griffiths (Ed.) *Lessons from good language learners (pp.83-98).* Cambridge: Cambridge University Press.

Harklau, L. (2011). Approaches and methods in recent qualitative research. In Eli Hinkel (Ed.) *Handbook of Research in Second Language Teaching and Learning, Volume II*. NY: Routledge.

Heiser, S., Stickler, U., Furnborough, C. (2013). Student training in the use of an online synchronous conferencing tool. *CALICO Journal*, *30*(2), 226-251.

Holec, H. (1981). *Autonomy and foreign language learning*. Oxford: Pergamon. (first published 1979, Strasbourg: Council of Europe).

Hoven, D. (2006). Communicating and interacting: An exploration of the changing roles of media in CALL/CMC. *CALICO Journal*, *23(*2), 233-256.

Huang, L.S. (2010). Do different modalities of reflection matter? An exploration of adult second-language learners' reported strategy use and oral language production. *System, 38,* 245-261.

Hubbard, P. (2013). Making a case for learner training in technology enhanced language learning environments. *CALICO Journal*, *30(*2), 163-178.

Jamieson, J., Chapelle, C.A. (2010). Evaluating CALL across multiple contexts. *System*, 38, 357-369.

Johnson, B., Christensen, L. (2008). *Educational Research: quantitative, qualitative and mixed approaches* (3rd Ed.). Thousand Oaks, CA: Sage.

Kehrwald, B.A. (2007). *Social presence and learner support: understanding learners' experiences with mediated social processes in text-based online learning environments.* Unpublished PhD dissertation. University of Southern Queensland, Toowoomba, Australia.

Kemmis, S. (2009). Action research as a practice-based practice. *Educational Action Research,*

17(3), 463-474. DOI:10.1080/09650790903093284.

Kirkwood, A., Price, L. (2013). Missing: evidence of a scholarly approach to teaching and learning with technology in higher education. *Teaching in Higher Education*, *18*(3), 327-337, DOI: 10.1080/13562517.2013.773419

Ko, C.-J. (2012). Can synchronous computer-mediated (CMC) help beginning-level foreign language learners speak? *Computer Assisted Language Learning, 25*(3), 217-236.

Lai, C., Morrison, B. (2013). Towards an agenda for learner preparation in technology-enhanced Language learning environments. *CALICO Journal*, *30*(2), 154-162.

Lai, C., Li, G. (2011). Technology and task-based language teaching: a critical review. *CALICO Journal*, *28*(2), 498-521.

Lam, W.K. (2009). Examining the effects of metacognitive strategy instruction on ESL group discussions: a synthesis of approaches. *Language Teaching Research*, *13*(2), 129-150.

Lantolf, J.P. (1994). Sociocultural theory and second language learning. *Modern Language Journal*, *78*(4), 418-420.

Laurillard, D. (2008). The teacher as action researcher: using technology to capture pedagogic form. *Studies in Higher Educatio*n, 33(2), 139-154.

Leahy, C. (2008). Learner activities in a collaborative CALL task. *Computer Assisted Language Learning, 21*(3), 253-268.

Leitch, R., Day, C. (2000). Action research and reflective practice: towards a holistic view. *Educational Action Research*, 8(1), 179-193. DOI: 10.1080/09650790000200108.

Levy, M. (2015). The role of qualitative approaches to research in CALL contexts: closing in on the learner's experience. *CALICO Journal*, *32*(3), 554-568.

Lewin, C. (2005). Elementary quantitative methods. In Bridget Somekh and Cathy Lewin (Eds.). *Research methods in the social sciences.* London: Sage.

Lewis, T. (2013). Between the social and the selfish: learner autonomy in online environments. *Innovation in Language Learning and Teaching*, *7*(3), 198-212. DOI: 10.1080/17501229.2013.836202

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). London: Sage.

Little, D. (1991). *Learner autonomy 1: Definitions, issues and problems*. Dublin: Authentik.

Little, D. (2007). Language learner autonomy: some fundamental considerations revisited. *Innovation in Language Learning and Teaching, 1*(1), 14-29.

Macaro, E. (2006). Strategies for language learning and for language use: revising the theoretical framework. *The Modern Language Journal*, *90*, 320-337.

Mackey, A., Gass, S.M. (2005*). Second language research: methodology and design*. Mahwah, NJ: Lawrence Erlbaum Associates.

McAteer, M. (2013). *Action research in education*. London: Sage.

McMahon, T., Jefford, E. (2009). Assessing action-research projects within formal academic programmes: using Elliott's context-related criteria to resolve the rigour versus flexibility dilemma. *Educational Action Research*, *17*(3), 359-371. DOI: 10.1080/09650790903093250.

McNeil, L. (2014). Ecological affordance and anxiety in an oral asynchronous computer-mediated environment. *Language Learning & Technology*, *18*(1), 142-159. Retrieved from http://llt.msu.edu/issues/february2014/mcneil.pdf

McNeil, L. (2016). Integrating computer-mediated communication strategy instruction.

Computer Assisted Language Learning, 29(2), 242-261.

DOI: 10.1018/09588221.2014.935439.

Retrieved from http://dx.doi.org/10.1018/09588221.2014.935439

McNiff, J. (2002). *Teaching as learning: An action research approach*. Routledge.

Meskill, C. & Quah, J. (2013). Researching language learning in the age of social media. In Michael Thomas, Hayo Reinders, & Mark Warschauer (Eds.) *Contemporary computer-assisted language learning (pp.39-54)*. London: Bloomsbury.

Müller-Hartmann, A., Schocker-v Ditfurth, M. (2010). Research on the use of technology in task-based language teaching. In Michael Thomas & Hayo Reinders (Eds.) *Task-based language learning and teaching with technology (pp.17-40)*. London: Continuum International Publishing Group.

Nakatani, Y. (2005). The effects of awareness-raising training on oral communication strategy use. *The Modern Language Journal*, *89*(1), 76-91.

Nakatani, Y. (2010). Identifying strategies that facilitate EFL learners' oral communication: A classroom study using multiple data collection procedures. *The Modern Language Journal 94*(i), 116-136.

Navarro, D., Thornton, K. (2011). Investigating the relationship between belief and action in self-directed language learning. *System*, *30,* 290-301.

Nissen, E., Tea, E. (2012). Going blended: new challenges for second generation L2 tutors. *Computer Assisted Language Learning*, *25*(2), 145-163.

Noffke, S. and Somekh, B. (2005). Action Research. In Bridget Somekh and Cathy Lewin (Eds.). *Research methods in the social sciences.* London: Sage.

O'Malley, M. & Chamot, A. (1990). *Learning strategies in second language acquisition*. NY: Cambridge University Press.

Oxford, R. (1997). Cooperative learning, collaborative learning, and interaction: three communicative strands in the language classroom. *The Modern Language Journal,* 81(4), 443-456. DOI: 10.1111/j.1540-4781.1997.tb05510.x

Oxford, R. (2011). *Teaching & researching: language learning strategies*. New York: Routledge.

Oxford, R. (2017). *Teaching and researching language learning strategies: self-regulation in context* (2nd Ed.). New York: Routledge.

Pajares, F. (2002). Gender and perceived self-efficacy in self-regulated learning. *Theory into Practice*, 41(2), 116-125, DOI: 10.1207/s15430421tip4102_8

Piccardo, E. (2014). From communicative to action-oriented: a research pathway. https://transformingfsl.ca/en/resources/from-communicative-to-action-oriented-illuminating-the-approaches/

Piccardo, E. (2017). Plurilingualism as a catalyst for creativity in superdiverse societies: a systematic analysis. Frontiers. Psychology 8: 2169. DOI: 10.3389/fpsyg.2017.02169.

Pintrich, P.R. (2002). The role of metacognitive knowledge in learning, teaching, and assessing. *Theory into Practice*, *41*(4), 219-225.

Pintrich, P.R. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, *16(*4), 385-407.

Piper, H. and Simons, H. (2005). Ethical responsibility in Social Research. In Bridget Somekh and Cathy Lewin (Eds.). *Research methods in the social sciences.* London: Sage.

Poza, M.I.C. (2011). The effects of asynchronous computer voice conference on L2 learners'

speaking anxiety. *The IALLT Journal*, *41*(1), 33-63.

Reinders, H., Lázaro, N. (2007). Innovation in language support: the provision of technology in self-access. *Computer Assisted Language Learning*, *20*(2), 117-130.

Reinders, H., Hubbard, P. (2013). CALL and learner autonomy: affordances and constraints. In Michael Thomas, Hayo Reinders, & Mark Warschauer (Eds.) *Contemporary computer-assisted language learning (pp.359-375)*. London: Bloomsbury.

Riazi, A. M. (2016). Innovative mixed-methods research: Moving beyond design technicalities to epistemological and methodological realizations. *Applied Linguistics*, 37(1) 33-49. https://doi.org/10.1093/applin/amv064

Saldaña, J. (2013). *The coding manual for qualitative researchers*. 2nd Edition. London: Sage.

Samuda, V., Bygate, M. (2008). *Tasks in second language learning.* Houndmills, New York: Palgrave Macmillan.

Scida, E., Saury, R. (2006). Hybrid courses and their impact on student and classroom performance: a case study at the University of Virginia. *CALICO Journal*, *23*(3), 517-531.

Seidman, I. (2013). *Interviewing as qualitative research: a guide for researchers in education and the social sciences (4th Ed.*). Columbia University, NY: Teachers College Press.

Senior, R. (2010). Connectivity: a framework for understanding effective language teaching in face-to-face and online learning communities. *RELC Journal,* 41(2), 137-147.

Siegel, J. (2013). Second language learners' perceptions of listening strategy instruction. Innovation in Language Learning and Teaching, 7(1), 1-18. DOI: 10.1080/17501229.2011.653110 http://dx.doi.org/10.1080/17501229.2011.653110

Smith, K., Craig, H. (2013). Enhancing the autonomous use of CALL: A new curriculum model in

EFL. *CALICO Journal*, 30(2), 252-278.

Somekh, B. (2006). *Action research: a methodology for change and development.* New York, NY: Open University Press.

Somekh, B., Burman, E., Delamont, S., Meyer, J., Payne, M., Thorpe, R. (2005). Research communities in the social sciences. In Bridge Somekh and Cathy Lewin (Eds.). *Research methods in the social sciences.* London: Sage.

Somekh, B. & Zeichner, K. (2009). Action research for educational reform: Remodelling action research theories and practices in local contexts. *Educational Action Research* 17(1), 5-21. Retrieved June 24, 2015. http://dx.doi.org/10/1080/09650790802667402

Son, J.-B. (2015). Digital literacy. Retrieved from http://drjbson.com/projects/dl/

Son, J.-B., Park, S.-S., & Park, M. (2017). Digital literacy of language learners in two different contexts. *JALT CALL Journal*, 13 (2), 77-96.

Stake, R. (2010). *Qualitative research: studying how things work*. NY: The Guilford Press.

Steel, C., Levy, M. (2013). Language students and their technologies: charting the evolution 2006-2011. *ReCALL*, 25(3), 306-320.

Stringer, E.T. (2014). *Action Research (4th Ed.*). Thousand Oakes, CA: Sage.

Sullivan, B., Glenn, M., Roche, M., McDonagh, C. (2016*). Introduction to critical reflection and action for teacher researchers.* New York: Routledge.

Swain, M., Kinnear, P., Steinman, L. (2015). *Sociocultural theory in second language education*: *An introduction through narratives*. (2nd ed.) Bristol, UK: Multilingual Matters.

Tanaka-Ellis, N. (2010). Factors limiting learners' success in achieving task outcomes in CALL. *Innovation in Language Learning and Teaching*, 4(3), 213-233.

Thomas, M. (2013). Task-based language teaching and CALL. In Michael Thomas, Hayo Reinders, & Mark Warschauer (Eds.) *Contemporary computer-assisted language learning* (pp.341-358). London: Bloomsbury.

Thomas, M., Reinders, H. (2010). Deconstructing tasks and technology. In Michael Thomas & Hayo Reinders (Eds.) *Task-based language learning and teaching with technology* (pp.1-13). London: Continuum International Publishing Group.

Thomas, M., Reinders, H., Warschauer, M. (2013). Contemporary computer-assisted language learning: the role of digital media and incremental change. In Michael Thomas, Hayo Reinders, & Mark Warschauer (Eds.) *Contemporary computer-assisted language learning* (pp.1-12). London: Bloomsbury.

Thompson, D.R. (2012). Promoting metacognitive skills in intermediate Spanish: report of a classroom research project. *Foreign Language Annals*, 45(3), 447-462.

Tormey, R. (2014). The centre cannot hold: untangling two trajectories of the "approaches learning" framework. *Teaching in Higher Education*, 19(1), 1-12. DOI: 10.1080/13562517.2013.827648

Van den Branden, K. (2006). *Task-based language education: from theory to practice.* Cambridge: Cambridge University Press.

Vandergrift, L., Tafaghodtari, M. (2010). Teaching L2 learners how to listen does make a difference: an empirical study. *Language Learning*, 60(2), 370-397.

Vandergrift, L., Goh, C., Mareschal, C., Tafaghodtari, M. (2006). The Metacognitive Awareness Listening Questionnaire: development and validation. *Language Learning*, 56(3), 431-462.

Warschauer, M., Healey, D. (1998). Computers and language learning: an overview. *Language Teaching*, 31(2), 57-71. DOI: 10.1017/S0261444800012970. Published online: 12 June 2009.

Webster, T.E., Son, J-B. (2015). Doing what works: a grounded theory case study of technology use by teachers of English at a Korean university. *Computers & Education*, 80, 84-94.

Wenden, A. (1999). An introduction to metacognitive knowledge and beliefs in language learning: beyond the basics. *System*, 27, 435-441.

Wenden, A. (2002). Learner development in language learning. *Applied Linguistics*, 23(1), 32-55.

Wicks, P.G., Reason, P. (2009). Initiating action research: challenges and paradoxes of opening communicative space. *Action Research*, 7(3), 243-262.

Wiebe, G., Kabata, K. (2010). Students' and instructors' attitudes towards the use of CALL in language teaching and learning. *Computer Assisted Language Learning*, 23(3), 221-234.

Yanguas, Í. (2010). Oral computer-mediated interaction between L2 learners: it's about time! *Language Learning & Technology,* 14(3), 72-93.

Zhang, L. (2008). Constructivist pedagogy in strategic reading instruction: exploring pathways to learner development in the English as a second language (ESL) classroom. *Instruction Science*, 36, 89-116.

Zimmerman, B.J. (2002). Becoming a self-regulated learner: an overview. *Theory into Practice*, 41(2), 64-70, DOI: 10.1207/s15430421tip4102

APPENDIX A **LANGUAGE LEARNING QUESTIONNAIRE**

This questionnaire is designed to gather information about your experience, perceptions and beliefs about learning languages in the classroom and online.

1. Have you ever studied another language before learning Spanish?

☐ Yes ----------→ **Please go to question 2**

☐ No ----------→ **Please go to question 5**

2. Please indicate which languages you have studied. **Please check all responses that apply.**

☐ English as a second language
☐ French
☐ German
☐ Japanese
☐ Mandarin Chinese
☐ Other(s) (please specify):
_____

3. If you are a native speaker of a language other than English, please specify which language:

_____

4. Which, if any, of these technological tools have you used in your previous language study: (**Please check all responses that apply).**

☐ Electronic language lab
☐ Electronic textbook (E-book)
☐ Internet sites
☐ Skype
☐ Computer
☐ Voice recording
☐ Podcasts
☐ Language learning software
☐ None of the above

Other: (please specify) _____

5. How confident do you feel about using the following? (**Please circle one response for each item.)**

	Very Confident	Somewhat Confident	Not very Confident	Not at all Confident	Don't Know
A computer	1	2	3	4	5
E-book	1	2	3	4	5
Electronic language lab	1	2	3	4	5
The Internet	1	2	3	4	5
Moodle	1	2	3	4	5
Skype	1	2	3	4	5
Voice recording	1	2	3	4	5
Language learning software	1	2	3	4	5

(*Continued)*

6. What do you think are the reasons for using technology in language learning classes?

7. Next, I'd like to know what you believe and how you feel about language learning. Please read each statement and indicate your degree of agreement or disagreement with each item using the following scale: **(1) strongly agree (SA), (2) agree (A), (3) neither agree nor disagree (NAD), (4) disagree (D), (5) strongly disagree (SD).**

	SA	A	NAD	D	SD
It is important to speak Spanish with excellent pronunciation.	1	2	3	4	5
I enjoy (or would enjoy) practicing Spanish with native Spanish speakers.	1	2	3	4	5
It is OK to guess if you don't know a word in Spanish.	1	2	3	4	5
I feel shy speaking Spanish with other people.	1	2	3	4	5
It is necessary to learn about Spanish speaking cultures in order to speak Spanish.	1	2	3	4	5
It is important to practice with audio and video materials such as videos of speakers of Spanish, music recordings and podcasts.	1	2	3	4	5
It is easier to speak than understand a foreign language.	1	2	3	4	5
It is easier to read and write Spanish than to speak and understand it.	1	2	3	4	5
I believe that I can learn a foreign language.	1	2	3	4	5
I enjoy learning with a partner or partners.	1	2	3	4	5

8. Do you use any strategies now to help you in learning Spanish? Yes ☐ No ☐
If you answered "Yes", please describe what you do to help yourself learn:

_____

(Continued)

<u>Last are some demographic questions that will be used for classification purposes only</u>:

9. Which of the following categories includes your age? (Please check one.)

_____ less than 18
_____ 18 to 24
_____ 25 to 30
_____ 31 to 39
_____ 40 to 49
_____ 50 to 59
_____ 60 to 69
_____ 70 or older

10. What is your gender?

_____ Female
_____ Male

11. Which programme are you currently enrolled in?

_____ Arts
_____ Science
_____ Computer Information Systems
_____ Bachelor of Nursing
_____ Business Administration
_____ Adult Academic and Career Preparation
_____ Engineering Technologies
_____ Trades and Technologies
_____ Other (please specify) _____

12. If there is anything that you feel is important for me to know or to think about, please add your comments here.

THANK YOU FOR COMPLETING MY QUESTIONNAIRE

APPENDIX B POST-TREATMENT QUESTIONNAIRE

END OF PROJECT QUESTIONNAIRE

This questionnaire is designed to gather information about your experience, perceptions and beliefs about learning languages in the classroom and online.

1. How confident do you feel about using the following? (**Please circle one response for each item.)**

	Very Confident	Somewhat Confident	Not very Confident	Not at all Confident	Don't Know
A computer	1	2	3	4	5
E-book	1	2	3	4	5
Electronic language lab	1	2	3	4	5
The Internet	1	2	3	4	5
Moodle	1	2	3	4	5
Collaborate	1	2	3	4	5
Voice recording	1	2	3	4	5
ILRN	1	2	3	4	5

---

2. Next, I'd like to know what you think about your own learning and use of strategies to complete the different learning tasks. Please read each statement and indicate your degree of agreement or disagreement with each item using the following scale: **(1) strongly agree (SA), (2) agree (A), (3) neither agree nor disagree (NAD), (4) disagree (D), (5) strongly disagree (SD).**

	SA	A	NAD	D	SD
When I am faced with a learning task in Spanish I try to relate it to my own experiences.	1	2	3	4	5
I can describe what I do to learn Spanish.	1	2	3	4	5
I can ask for help before, during or at the end of a task.	1	2	3	4	5
I think about what would be the best way for me to approach a particular learning task.	1	2	3	4	5
I used the same strategies in the classroom and online.	1	2	3	4	5
Working with partners helped my learning.	1	2	3	4	5
I feel more confident speaking Spanish.	1	2	3	4	5

It is easier to speak Spanish than to understand it.	1	2	3	4	5
I can use the strategies I learned for Spanish in other learning contexts.	1	2	3	4	5
I feel comfortable completing tasks in online environments.	1	2	3	4	5

3. If there is anything that you feel is important for me to know about your learning experience or any item from #2 that you would like to expand on, please add your comments here.

THANK YOU AGAIN FOR COMPLETING MY QUESTIONNAIRE!

APPENDIX C
INTERVIEW QUESTIONS

To participant: Thank you for being part of my study. Your participation was invaluable, and thanks to it I have collected valuable insights into language learning strategies for language learners and into strategies-based instruction for language educators. I would like to ask some follow-up questions before completing my final report. For your information, this interview will be recorded as outlined in the consent form you signed at the beginning of the study.

INTERVIEW

Date: _____ **Participant:** _____

Location: _____ **Time:** _____

1. Do you feel that the strategies instruction you received affected how you carried out the activities in the online environments?
   (Affirmative answer = follow-up question: *In what way*?)
   (Negative answer = follow-up question: *What approach did you use?*)

2. How did you apply the strategies you did use? Can you think of any specific examples?

3. Do you consider that the interaction in pairs and groups contributed to your knowledge and use of strategies in your language learning? (Affirmative or Negative = follow-up question: *In what way?*)

4. When you think about your whole experience completing the online tasks, what stands out in your mind?

5. How did you feel about reflecting upon your own learning? Can you tell me how or if that had an impact on your progress or your strategy choices?

6. How confident do you feel about future language learning situations involving speaking?

7. Is there anything that you might do either the same or differently when facing tasks in other learning contexts in the future?

8. Can you tell me what you feel is the most important thing that I should know about your learning experience?

APPENDIX D MARQ (metacognitive awareness-raising questions)

Session I – introduction to awareness-raising

What do I do now to help myself learn Spanish?

How is that working for me?

What can I do to help my learning?

Have I learned any new strategies today?

- **Individual reflection and group sharing/discussion**

Ongoing sessions:

Pre-task:
Planning and preparation
- What do I already know about this?

Selecting and using strategies
- What is the best way to approach this task?

During task:
Monitoring learning
- Are these strategies helping me?
- Ask for help?
- Check other sources?

Post-task:
- What was most challenging for me?
- Will I do anything differently next time?
- What worked well?

APPENDIX E – TABLE 4.4

TABLE 4.4– Overview of online prompts, participant reflection transcripts, researcher observations

Participant		AR2	AR3	AR4
		Online embedded post-task reflection prompt: **Did you use any strategies that you can identify to help you complete the task? (for example: planning, preparing, monitoring the task as it went along, checking your plan) What was most difficult?**	**Online embedded post-task reflection prompt:** **Answer any two of the following questions:** **1. How did I plan for this task?** **2. Did I ask for help if I wasn't sure?** **3. Which strategies did I employ?** **4. How effective were the strategies I used?**	**Online embedded post-task reflection prompt:** **How did you work out strategies with consideration of the following components:** **1. Preparation and planning for your learning** **2. Selecting and using strategies, how and what did you decide to do** **3. Monitoring the learning, paying attention during the task to what you were doing** **4. Evaluating the task, self-assessing and assessing as a group** **I can briefly summarize knowledge of strategies I employed to accomplish the task as follows…** **They were or were not effective because…**
Bev	TRANSCRIPT OF POST-TASK REFLECTION	*We wrote it down and used the yellow sheets a lot.*	*We wrote it out in English, translated it into Spanish and recorded it. I thought those strategies were fairly effective…got the task done.*	no posting
	PROCESS CODING OF TRANSCRIPTS	- **writing** things down	- **writing** **-translating** **-getting it done**	no data

Carol	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	- **asking for help** from peers on grammar - no interacting/collaborating - little use of target language other than the performance aspect of task at the end	- **asking for help** from peers - **self-assessing** during task -**monitoring grammar structures** throughout task with Dawn - little interaction in target language, almost exclusive use English during preparation of dialogues	- almost no interaction with group - **working independently** - using English - not focusing on linguistic aspects of task, focusing on geographical aspects of Amazon - off task and on Internet seeking information that was not relevant to task at hand
	TRANSCRIPT OF POST-TASK REFLECTION	Absent due illness – no posting	*I really didn't plan for this as I wasn't expecting this assignment on Tuesday. If you kept up to date on work, it wasn't hard to do. I wasn't sure on a word (either how to pronounce a word or what the word is) I just asked either of my partners in our group or the instructor.*	*Listening to others talk and see what they typed was good, being able to use the computer to type and get feedback from them right away was also good. Being able to use textbook and wordreference.com (online) was a help as well.* ***I learn by doing, not reading.***
	PROCESS CODING OF TRANSCRIPTS	No data	- **interacting** - **monitoring** - **expressing opinion** on self/other performance	- **writing** things down - **planning** how and what to do in task - listening **- monitoring** - **expressing opinion** on self/other - **seeking** external resources

	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	No observation	- Clarifying and monitoring accuracy of use of words in Spanish by asking peers for confirmation - **self-talking**	- **initiating** interactions in group - **interacting** in target language from beginning of planning phase - **collaborating** with peers to organize vocabulary - using English for clarifying and monitoring for accuracy of vocabulary or structures
Dawn	TRANSCRIPT OF POST-TASK REFLECTION	Unable to use technology in January, 2014 task Previous attempt comments from November, 2013 using ILRN on class computer: *Communicating with my partner about how the scenario would go. Because any suggestion immediately became what was to be said. I would have preferred to work with a person in front of me and negotiate more.*	*We planned as a group. Ideas came from all of us, and we changed our idea as we tried to work it out. I wrote down short notes to identify who was to say what when. Quick, not very linear or legible notes. We worked in English, then we decided to work out our script in Spanish. I asked the other two to write down their parts in Spanish and I would concentrate on my part only. Then we practiced the whole scenario. And finally recorded our "conversation". We had extra time so we did it twice to improve our flow and (pronunciation as written) None of the three of us is shy about asking for direction when we need it.*	*Strategies included how to communicate online with two other students. We had to communicate with each other to use the chat and whiteboard and to learn how to simultaneously see the task required of us, our responses (our own and others), learn that the chat notes keep scrolling down and it is hard to see what came before and thus be directed to use the whiteboard. We struggled to stop using English and to try to ask questions of each other in Spanish (not so successfully). I tried to remember the vocabulary that we learned and to access what I knew we needed to survive in an outdoor environment. I tried to get the others to focus on their own knowledge (for example I know that X spends time in an almost survivor type environment most summers and thus is quite knowledgeable about what is needed). After a while I tried to divide our tasks so that we would be able to see some completion. It was frustrating, I think for*

				all three of us for different reasons. Certainly I was frustrated by my lack of knowledge of technology. Esp. I would like to have known beforehand how to use the whiteboard more effectively to organize a group response.
	PROCESS CODING OF TRANSCRIPTS	No data	- **writing t**hings down **- planning** how and what to do in task - **collaborating** - **monitoring**	**- stressing** due to technology problems - **feeling uncomfortable** using technology - **expressing opinion** on self/other performance - **focusing** on individual strategies **(self-regulation)**
	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASKS	No observations	- **initiating interaction** which is carried out completely in English with no reference to Spanish while planning what group members will say - no Spanish used or any occurrence of LREs until after more than eight minutes of group interaction - **orchestrating interactions** and preparation for final dialogue recording - executing dialogue in Spanish with few errors	- no interacting in Spanish until after the 18 minute mark at which time the researcher reminds group of the task > interaction in Spanish in a problem-solving task - **no collaborating** - no speaking in Spanish and begin using whiteboard for **writing** instead of talking to other members - not listening while other member asks a question – researcher reminds group to interact with one another

				- adding vocabulary and looking up structures not studied – not following instructions for task - reminded again about purpose of activity by researcher Note: members were not directed to use the whiteboard, they were asked to speak and use outside resources as necessary to complete their interaction in Spanish
Eva	TRANSCRIPT OF POST-TASK REFLECTION	Unable to use technology in January 2014. Previous attempt comments from November 2013 using the ILRN technology with class computers: *This activity was too rushed, there was not enough time to prepare, plan, etc. Also we had problems with the online chat ie my partner and I were disconnected a couple of times.*	*I tried to ensure that all 3 of us had input and that we stayed on task. Since time was limited, it was mostly a matter of keeping things moving quickly and trying to remember and draw upon what we have learned in the course – and also trying for a natural type of conversation. The final steps were to record, practice the correct pronunciation, and record again.* - **stressing** due to time limits	*I tend to be task oriented and did not feel that we fully accomplished the actual task of determining the key items required for survival in Amazonia – as in identifying and sorting through them and arriving at some sort of consensus. The technology caused some frustration, including setting everything up properly, determining how to use the whiteboard, word reference.com, chat, etc. Our limited Spanish also made the task difficult. With the time factor, it was necessary just to generate ideas and get them down, by remembering what we could from past lessons, and checking wordreference.com when needed. We seemed to complete this part more or less independently, and then brought them all together at the end.* - **stressing** due to time limit (no limit)

	PROCESS CODING OF TRANSCRIPTS	- **Stressing** due to time limits	- **monitoring** - **focusing** on self-regulation	- **stressing** due to technology problems - **stressing** about language ability - **focusing** on self-regulation - **seeking** external resources
	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	No observations due technology other than > **stressing due to technology**	- **transcripts do not demonstrate taking a leadership role** - interactions are in English with no reference to Spanish while planning what group members will say - no Spanish used or any occurrence of LREs until after more than eight minutes of group interaction - monitoring – limited examples - executing dialogue in Spanish with few errors	- no interacting in Spanish until after the 18 minute mark at which time the researcher reminds group of the task > interaction in Spanish in a problem-solving task - gaps of silence for periods of one and two minutes - no speaking in Spanish and begin using whiteboard for writing instead of talking to other members - stressing due to perceived technology problems (none) - focusing on survival aspect rather than linguistic aspect of task - adding unknown vocabulary, not following instructions of task
Ingrid	TRANSCRIPT OF POST-TASK REFLECTION	*We kept going back and checking what we were writing about made sense. We said all our ideas right away and what we were going to eat, do, etc. then we decided what*	No posting -	*In preparing for the task, I took a look at all the components and quickly jotted down the vocabulary I knew which related, and then waited for my partner and I to connect. Once we got together, we found*

		order and how to word everything. The most difficult thing was starting the conversation and trying to plan when not sitting right next to the person.		*that both of us had brainstormed so we collaborated what we needed and found that we had similar answers and we also added to each other's (*participant's spelling error*). During the task we brainstormed what answers we would have and collaborated. It was effective because we had both brainstormed and thought about it in advance after we had read what the task was and before we began it.*
	PROCESS CODING OF TRANSCRIPTS	-**feeling uncomfortable using technology** - **writing** things down -**planning** how and what to do **- interacting** **- monitoring**	No data	- **writing** things down - **planning** how and what to do in task - **collaborating** **- focusing** on self-regulation
	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	- stressing due to technology problems - stressing due to synchronous use of technology (not seeing partner)	- **initiating planning** on task - **organizing p**articipants' roles - **asking for help** – target language accuracy - **planning** for task - **monitoring** accuracy of target language	- planning - **asking for help** from partner - **thinking aloud** - **seeking external resources** - **monitoring accuracy of target language** Note: researcher intervention between 0827-1044 clarified misunderstanding of

				word in instructions which had confused members about what to do.
Kyle	TRANSCRIPT OF POST-TASK REFLECTION	Verbal communication with researcher at the end of class that there was not enough time to do the task – no written posting although researcher requested that one be written	*I planned for this task by thinking about what I would say in English and then seeing how that would fit in Spanish. I focused on how to conjugate the verbs and using vocabulary from that chapter. I also worked with my group using the appropriate verb forms whether that be past or present tense. Our strategies seemed to work quite well and we were able to finish our assignment in a timely fashion.*	*1. We talked about the different items needed, we tried to say them in Spanish if we knew them but if we didn't then we said them in English and tried to see if one of our other members knew the word.* *2. We made up sentences for each of the topics and then decided which one of us would read the following sentence. We asked one another which one of us would like to do which part and each picked one of the topics.* *3. We each had to think up different sentences and words describing the specific topic and paying attention and staying focused was key to getting our objective complete.* *4. I believe we did a fairly good job as a group and worked well together, helping one another when need be and working together as a group.*
	PROCESS CODING OF TRANSCRIPTS	**- stressing** due to time limits	- **interacting** - **planning** how and what to do in task - **focusing** on self-regulation	- **interacting** - **planning** how and what to do in task - **collaborating** - **monitoring** - **expressing opinion** on self/other perf.

Laura	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	- losing time due to computer delay - unable to record interactions	- interaction was limited – other group members dominated the interactions - **self-talking,** - repeating phrases heard from others and questioning accuracy of them **- asking for help** – clarification, accuracy in target language verbs	- **asking for help** – instructor / group - **seeking external resources** - using chat box - providing accurate vocabulary words to group - **thinking aloud, self-talking**
	TRANSCRIPT OF POST-TASK REFLECTION	*The most difficult was that I was unable to hear my partner. We did plan by asking each other questions and having the other person respond.*	*Me and my partners split into groups and worked one on one with someone, it allowed everyone's opinion to be heard. Yes, we all helped each other and spoke up when unsure I believe we allowed for a comfortable environment where no one felt dumb with any question. Better to ask and be right than wait and make a fool of oneself.*	*I had partners that would communicate with and give ideas but also had a blank piece of paper to write down notes for myself. I believe it worked because we did the task at hand and learned how to maneuver around others doing the task at hand. We also used wordreference.com for unknown words. Whomever had the idea for one of the answers and the two others thought they were on the right track it was given to them. We all did very well communicate made this possible. As for myself I did well but happy to have others around to help me.*
	PROCESS CODING OF TRANSCRIPTS	- **Stressing** due to technology problems **- interacting** -**planning** how and what to do in task	- **interacting** - **planning** how and what to do in task - **collaborating** - **monitoring**	**- writing** things down **- interacting** **- seeking external resources** - **planning** how and what to do in task

			- **expressing opinion** on self/other performance	- **collaborating** - **monitoring** - **expressing opinion** on self/other perform.
	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	- technology problems created delays and gaps in interactions - stressing due to synchronous use of technology - unable to record interactions	- **using humour to reduce anxiety** - **seeking external resources** (wordreference.com and e-book) - monitoring accuracy of target language - **asking for help –** group / instructor - checking group member's strategies - using English to check for accuracy but seeking Spanish equivalents throughout task	- collaborating with group to plan steps in task - planning task steps - **using humour** - **asking for help** – group - monitoring accuracy of target language use - using English for clarifying, humour and monitoring own speech for target language
Sarah	TRANSCRIPT OF POST-TASK REFLECTION	*It was difficult not being able to talk to my partner in person but other than that the task was easy. We brainstormed some ideas, figured out what we wanted to say and then created a script.*	*1. We planned for this task mainly by discussion. We discussed what storyline we wanted to create, who wanted to say what, what we were going to say, where the setting of the story took place, kinds of food we'd eat, the attitude of the story, etc. Then we put our ideas into a tangible script. It was actually a quite fun throwing out ideas, and in the end I feel we had a good script. Although I get serious anxiety as soon as I know I am being monitored,*	1. *I used a dictionary and textbook for the preparation (online).* *2. I thought about what I would need if I was in the Amazon, the basic necessities, and then used either my previous knowledge, the textbook or the dictionary to look up the words in Spanish. X and I then collaborated our words and translated them into full sentences.*

			whether by a person or recording, so that maybe inhibited my performance a bit. *2. I did not ask for any help from the Professor but we seeked out resources that enabled us to find answers to any potential questions we came across. Resources such as Spanish Dictionary (online) and our textbook.*	*3. Communicating through the microphones and instant messaging was a good way to ensure we paid attention during the task. Being able to talk made it faster and there was less possibility of getting frustrated.* *4. It was nice to work in a group especially being able to talk together. I think we did the task well together.*
	PROCESS CODING OF TRANSCRIPTS	- **feeling uncomfortable using technology** - **writing** things down - **interacting**	- **writing t**hings down - **interacting** **- planning** how and what to do in task - **collaborating** - **expressing opinion** on self/other performance - **focusing** on self-regulation - **seeking** external resources	**- interacting** - **planning** how and what to do in task - **collaborating** - **expressing opinion** on self/other perf. - **focusing** on self-regulation - **seeking** external resources
	RESEARCHER OBSERVATIONS OF ACTIONS DURING TASK	- stressing due to technology delays - stressing due to synchronous use of technology - unable to record interactions	- **initiating planning for task** - organizing dialogues - interacting and collaborating - **asking for help** – group - seeking external help - **monitoring accuracy** of target language	**- initiating planning** interactions **- thinking aloud, self-talking** - planning - collaborating - **monitoring accuracy o**f target language - seeking external resources

APPENDIX F Moodle postings

Posted on Moodle course page "language learning strategies" "the good language learner"

Some characteristics of the good language learner*

She/he…

- is a willing guesser, and is not afraid to make mistakes
- is actively involved in tasks and practices, practices, practices
- develops an awareness of language as a system
- is often not inhibited, or encourages himself/herself to lose any natural shyness and overcome feelings of embarrassment
- realizes that language is a means of communication and interaction
- monitors her/his own speech and the speech of others
- pays attention to meaning
- is prepared to pay attention to the way things are said

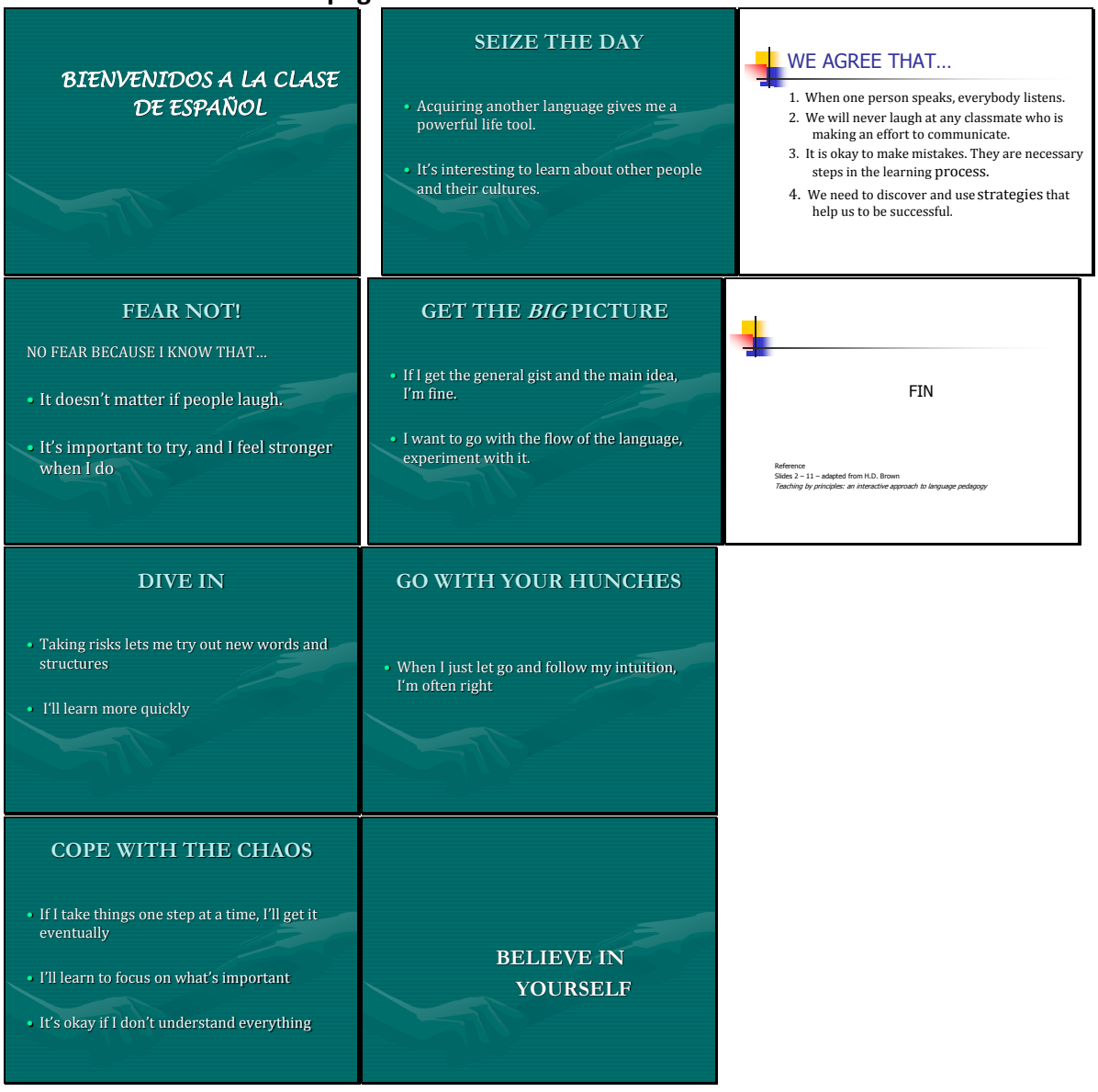
……AND *the good language learner* can be YOU

*(adapted from H.D.Brown, 2007; Cohen, 1998; Griffiths et al, 2008)

APPENDIX G

PowerPoint presentation and class contract for discussion of "guidelines" for language learning (adapted from H.D. Brown, 2007)

Posted on Moodle course page



APPENDIX H - Handout Amazonas Colombia

Handout – Groups of three. Each member chooses a card, either A, B, or C. Each member goes online to YouTube to listen and view the corresponding video section for their card. They have eight minutes to complete the information, viewing the section as many times as needed. Then, members with As, Bs and Cs meet with other members with the same letter to check the information. Finally, they return to their original groups and ask one another questions to complete all the information on the sheet. View the entire segment on Amazonas Colombia – EL VIAJE DE TU VIDA. Discussion.

AMAZONAS COLOMBIA - EL VIAJE DE TU VIDA: http://www.youtube.com/watch?v=r9Nz7n0_zI4

A. Listen and watch from 0:00 – 2:25

Answer the questions and be prepared to share your answers with your partners so that together you create a complete overview of Amazonas.

1. ¿Cómo describe el narrador Amazonas en cuanto al tamaño (*size*) de Amazonas?

2. Según el narrador ¿cuáles son las avenidas en esta parte de Colombia?

3. ¿Qué tiene la gente por el lugar donde vive? (las emociones)

4. Blas Candre es una persona _____que dice que es importante conocer los mitos.

B. Listen and watch from 2:25– 4:40

Answer the questions and be prepared to share your answers with your partners so that together you create a complete overview of Amazonas.

1. ¿Cuál es el área en kilómetros cuadrados de Amazonas?

2. ¿Qué vas a encontrar allí, según el narrador?

3. ¿Quién es Bartolemé Atama?

4. ¿Quién es Ana María Paad?

C. Listen and watch from 4:41 – 6:30

Answer the questions and be prepared to share your answers with your partners so that together you create a complete overview of Amazonas.

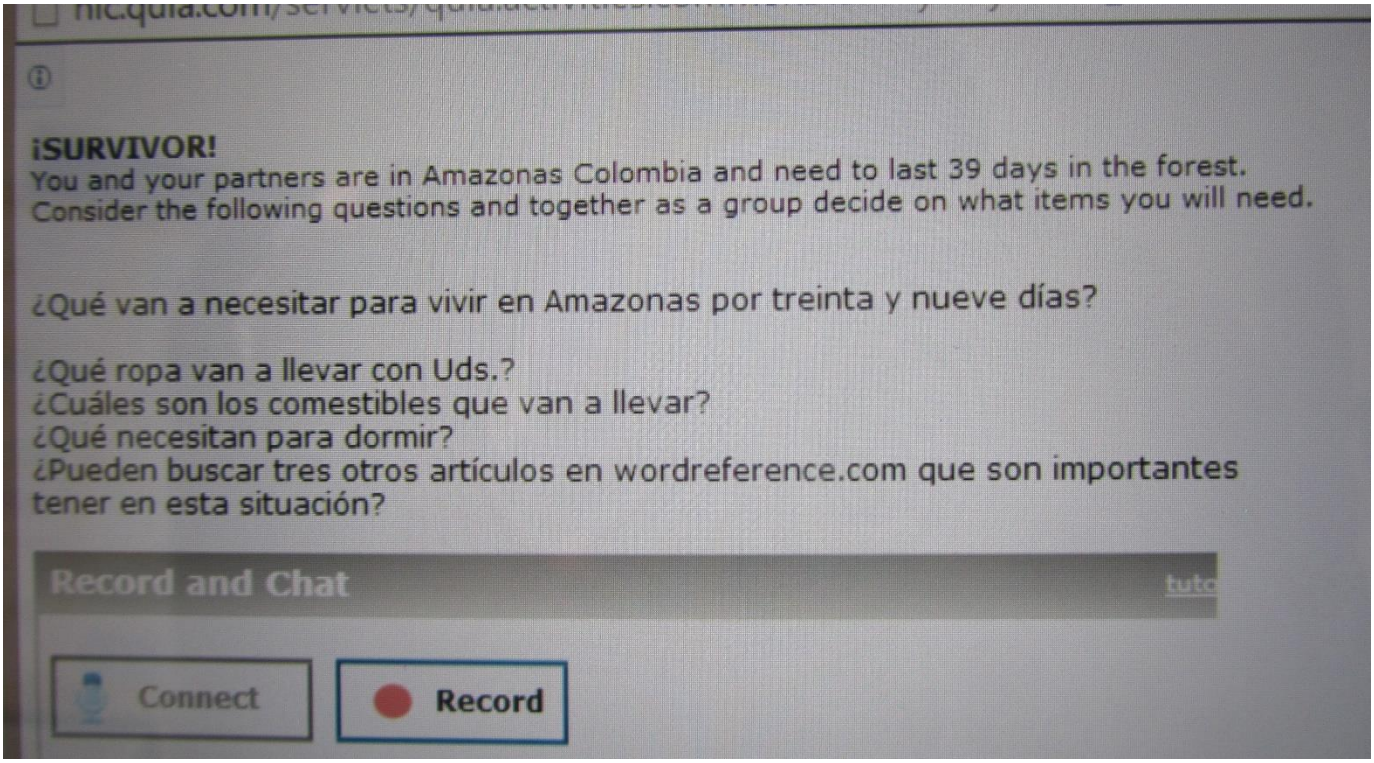
1. El turista Daniel Bello dice que Amazonas no es un destino, es un lugar para _____

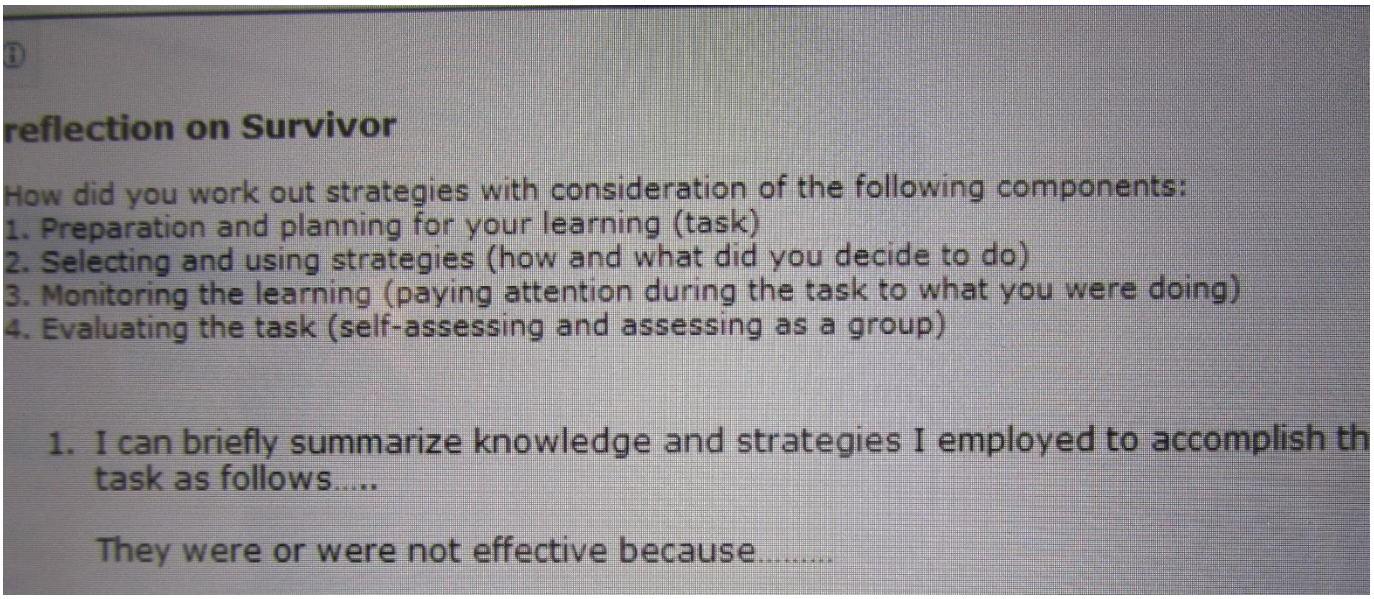
2. Amaya dice que es importante _____

3. David Palomares y Monica Tiries dicen que es un lugar ideal para _____

4. ¿Qué dicen Miki y Merina de la gente de Amazonas?

APPENDIX I – Screenshot of *iLrn* sample task and post-task reflection





APPENDIX J - Transcripts of selected interviews

Date: April 24, 2014 **Participant:** Bev

Location: Okanagan College – KLO, B109 **Time:** 1:49 pm

1.
Interviewer: Do you feel that the strategies instruction you received affected how you carried out the activities in the online environments?
(Affirmative answer = follow-up question: *In what way*?)
(Negative answer = follow-up question: *What approach did you use?*)
Bev: Not really.

Interviewer: Okay, then, what approach did you use?

Bev: Well, if I was more on top of my game I would have used a better approach altogether, but…basically, just sign in, do what you're asked to do and sign out. Not too complicated.

2.
Interviewer: How did you apply the strategies you did use? Can you think of any specific examples? So, you're confronted with this task, and so what would you do?

Bev: I have opened my iPad sometimes, my sister would let me use her computer and I'd have like an online dictionary open on that and have my textbook open on this side and that's how I'd review the structures and do my homework…spread out. And then if I knew the answer I'd just answer it and if I didn't know the answer I would look it up in one of those two locations and then I would fill it out. And um that's pretty much how I went through all of it.

Interviewer: Okay. And when you think about the tasks that you had to complete online that that were specific in-class tasks where you were working with others, what about in that situation? What were the…What was the process? Can you describe it?

Bev: That I find really frustrating unless you're with somebody on the same level as your technological knowledge. Basically you go through and you get it set up, sometimes that takes way longer than the activity. And then I'm pretty much, I think I only did the one where I was actually interacting with somebody. Uh, we only had the one where we were actually in discourse right, the rest of them we were just talking face-to-face.

Interviewer: Yes, you were face to face but you were working on online tasks (Bev interrupts)
Bev: I don't even remember those…
Interviewer: tasks and the voice recording
Bev: I remember the voice recording, but I don't remember working online at all, but I may have missed it
Interviewer: Yeah, you did miss, you did actually miss two of the tasks in the study.

Bev: I missed three classes
Interviewer: Yeah, there were two of those classes that were part of the study
Bev: So, what if I was to do basically the same idea like what we did with…in that room up there…I would have that open and I would have, I use 123 Teach Me for verb conjugations and I use online dictionary for wordreference – kind of…

Interviewer: And so what about looking at the task itself? Did you do any, say, self-talk or just say..hmm.

Bev: I don't really, I just, I don't really set myself up mentally for anything. I just..that's what I gotta do, let's do it.

Interviewer: okay.

3.
Interviewer: Do you consider that the interaction in pairs and groups contributed to your knowledge and use of strategies in your language learning?
(Affirmative or Negative = follow-up question: *In what way?*)

Bev: It probably helped. I personally don't care for really working in groups.

Interviewer: When you say it probably helped, in what way? Could you expand on that?

Bev: I know from taking psychology and stuff that working in groups is a good way to learn, so I'm just gonna go that along the line of technically by definition it's supposed to help your learning, and I'm sure that it probably helped in the way other people's ways and perspectives are always useful. But usually I prefer working alone, and I find especially, (I mean I love X and XX), but their English was, like, 'cause I don't understand everything in English, it was sometimes hard to understand it in Spanish, and because they're fairly heavy accented so sometimes like that impeded a little like time wise. And even though they're super smart people, and like they were totally good with that, but like I just find interpersonal stuff like that…

Interviewer: okay, so when you are working on your own, is there any sort of approach when you're given say 'this is the problem"?

Bev: This more of something that *I* do, but I always look for, when I have a problem to solve, what could go wrong first. And that's something I've done my entire life. And somebody once told me that unless you have a solution to that problem, then you're not really accomplishing anything. And so I'll look for what can go wrong, or like, what it definitely isn't before I figure out what it is if that makes sense? And so I'd be like, okay, well, this asks for this type of verb tense so it's not that and it's not that, so I have to go look under like *this* menu or that piece of paper kind of deal. And then, um, after that it's just like okay it asks for the past tense of tener or something, I'll find tener, I don't, like I have them memorized in

groups of eight – and usually I have to go through the entire group of eight in order to figure out what tense I have to go to. And I know that's systematic and categorizing everything, and that's probably not the best way to do things, but that's just how I do it and I don't know any other way to do it. So, that's pretty much how I approach it, like, I don't know if that's really chronological, but…does that make sense?

Interviewer: Okay, okay. And when it wasn't about the grammar points or those other kinds of things where you had, say, a particular situation, like talking about going out for a recent meal or something like that. When you're in front that sort of…here is the situation, can you kind of walk me through your processing of that?

Bev: Generally, I'll figure out what the question is in English and then I will formulate an answer in English, and generally I work really well memorizing things in story lines, so like for that I wouldn't be just like "well I had this, this and this…well, I had.." I'd be like "I went to this place and then I walked over here and I sat down and had that and then…like you don't need to put all those details into your answer but that's how I think about it. And then I'd pick out the points, you know, like the important stuff, where you went, what you had and who you were with, and then I would translate those back into Spanish. And then when I remember like for the oral exam, when I think about what I'm going to answer, I think about the story line, and then like the highlighted points and then I would just say the highlighted points.

Interviewer: So, after you complete your story line, do you look at the whole story?

Bev: It depends on what I'm studying. Um, for languages, not really, but for like psychology and stuff where I have to remember an entire concept and not just specific words generally. For languages, like once I'm done the story I'm like, okay, this word matches that word and that matches that word and then that's what I reinforce. Does that make sense?

Interviewer: Okay, the structure of it.

Bev: yeah, start with the story, and then try and remember…like history I have to remember the story because if I don't remember the story, I don't remember anything.
But in other courses like biology and languages I try to remember the concepts after I've got story down.

Interviewer: And do you look at it to see if it makes sense?
Bev: Makes sense how?
Interviewer: Well, you were saying that you look specifically at the structure, so I guess the question I'm asking is: Once you've completed that, where you've checked to see that it all matches, do you read it to see if it makes sense?
Bev: (interrupting) in Spanish?
Interviewer: yeah.
Bev: Usually, yeah.

Interviewer: and then do you make a decision about if you need to make any changes or not?
Bev: I stopped editing stuff when I was in grade five.
Interviewer: okay.
Bev: So, it's like a rough draft and I have to hand in a rough draft, be marked on a rough draft, I don't do rough drafts. They're a waste of time and I know that's not true, especially in postsecondary, but I don't do rough drafts.

Interviewer: Okay. I guess I was thinking more about just simply looking at it to make a decision whether it makes sense to you once you've finished checking the structure.

Bev: Yeah, I guess so because I would write it out in English, write it out in Spanish and then reread it out in Spanish to make sure like, it flows, I guess. Does that make sense?

Interviewer: okay, yeah, that's helpful.

4.
Interviewer: When you think about your whole experience completing the online tasks, what stands out in your mind? I don't know that you were there that day for the text chat?...No, you weren't, okay so: When you think about the whole experience completing the online and face to fact tasks, is there anything stands out in your mind?

Bev: I really like the activities that were used, like fill in the blanks with this tense form and whatever is correct that are in the book, which you (cannot understand)…and the one where you make your own in the class…
Interviewer: the story, for example?
Bev: Yeah, like that one. I really like those and that's how I try to study online too on other sites cause I don't even know…I don't know why

5.
Interviewer: How did you feel about reflecting upon your own learning? Can you tell me how or if that had an impact on your progress or your strategy choices?

Bev: I just spent an entire morning doing that at work, so I'm kind of not in that mode right now.
Interviewer: okay. But how did you feel about doing that in the course, the beginners' Spanish course?
Bev: It's always interesting to figure out what I'm good and what I'm bad at. Um, I, in my own, my whole life actually, I've learned that I just need to be more organized and more structured. It's um, like financially and everything, it's like, everything is kind of like, it didn't fall apart which is a (cannot understand), but it didn't go as smoothly as I wanted it to. I was very close to being (cannot understand) on more courses than just this one, and I, uh, but I'm also figuring out that I am not very motivated by being in an educational environment. Like this, like I don't feel it's very personalized and there isn't really room for my interest to grow because everything is just so…you have to do this and you have to do this and you have to do

this and I don't feel like that because like what I really wanted to study was journalism but there's only one journalism course here. I'm interested in languages, I'm interested in politics and that stuff, but that's not what I wanted to study. So because I was forced to do so much that I didn't really care about, like my motivation for everything has dropped significantly and that's part of the reason I'm taking next year off and going to Chile.
So, that definitely played into how I performed in every single course and none of my marks were that great. So, like, that kind of is factored into everything.

Interviewer: Yeah, sure, definitely what you're saying is that if you don't feel motivated to learn, then you kind of "tune out" from it.

Bev: yeah, and you've had so many small assignments, like all my other courses had like, you know, this thing's worth 20% and it's due on this day, and there was at least one every week, like yours, and I apologize for this, yours fell through the cracks a lot because I would be just like out totally when I am working on an essay.

Interviewer: okay. When you were asked to reflect on something that you had done either online, in class or the Collaborate Survivor experience, any of those, and I had asked you to do some reflection afterwards. Going back and thinking about what you did, did that have any impact at all on your approach or your strategies or anything?

Bev: I don't think, not for me, but I don't think I was doing it from the perspective for me, more for you and what you needed to do for this (the study). Does that make sense?

Interviewer: okay. No, that makes sense. So, I guess what I'm hearing is that you weren't, when you were reflecting, you weren't really thinking (interrupted)

Bev: (interrupting) about ways that I could improve myself.

Interviewer: your own learning, your thinking for the task…

Bev: no, I was thinking more about what kind of information you needed for your paper or whatever…

Interviewer: ah, okay, and the only information I need is what you think and how you feel. That's it.

Bev: Yeah, so that's it..
Interviewer: there's no right or wrong…
Bev: So I didn't really write it with the intention of…
Interviewer: thinking about your own learning?
Bev: yeah
Interviewer: okay. And I appreciate that candour, that's helpful.

6.
Interviewer: How confident do you feel about future language learning situations involving speaking?
Bev: Quite confident, but I've also been to Guatemala and Mexico before I took courses with you and I have made mistakes in my life, like I've been through all that, so, and like you have told stories about how things didn't work out and you still made it out alive, right? And I realize that in all areas of life, people are going to laugh at you no matter what you do, so you've just got to get out there and try.

7.
Interviewer: Is there anything that you might do either the same or differently when facing tasks in other learning contexts in the future?
Bev: I would definitely, I think, looking for a different way to learn is more up my alley. Not being stuck in a classroom and having three hour lectures on anything…three hour lectures on anything just kill me. But again, like this internship, getting out, cause I still do, I appreciate what you can do in a classroom and I understand that it's necessary but I think like if I can make some more hands-on or more…I mean you're really good with the audio visual stimulation sort of stuff, but I'm just like, I'm a mover, I need to get out and do stuff.

Interviewer: hm, hm a more hands-on experience for you, more life experience. So experiential learning is better for you, is that what you're saying?

Bev: most of the time, I mean there are certainly times when you just have to sit down and read your book, but I would have liked it if we could have gone on a field trip to the Spanish church. I mean it's great to talk to people in the classroom and stuff but I feel this is very cultured…stuck environment and I don't like that.

Interviewer: okay. That's good, that's helpful.

8.
Interviewer: Can you tell me what you feel is the most important thing that I should know about your learning experience?

Bev: Mine, besides the fact that I'm disorganized. That you've been an amazing teacher, and I…(pauses)

Interviewer: I mean about YOUR learning experience…

Bev: Well, no, that's the thing, like, I get really frustrated sometimes when I know I'm not performing as well as I can, but you always found some positive, so I think that really helped me just like not quit, so, I really appreciate you (begins to cry). (inaudible)

Interviewer: X, thank you, thank you. And I do appreciate what you are saying about being a more experiential learner as opposed to the academic which (Bev says "yeah")... because in a

lot of ways I understand what you're saying, and why not have more authentic experience in the academic experience.

Bev: (while interviewer speaking) yeah, yeah.

Interviewer: Am I getting that right?

Bev: Like when I was in grade eleven we went down to Mexico and we did Spanish and a cross cultural studies and leadership classes in Mexico. We'd be like "sit", okay this is what you're going to learn today and then we'd go out and practice it with the youth group that we were going to help build a soccer foundation for or whatever, right? So… That…and yeah, but I just really appreciate how you never corrected me in… it was really awesome…you were just a really awesome teacher. So, that really helped me.

Interviewer: And thank **you** so much for participating in my study.

Date: **April 22, 2014** **Participant:** **Ingrid**

Location: **Okanagan College – KLO, B109** **Time:** **4:59 pm**

1.
Interviewer: Do you feel that the strategies instruction you received affected how you carried out the activities in the online environments?
(Affirmative answer = follow-up question: In what way?)
(Negative answer = follow-up question: What approach did you use?)

Ingrid: So, do you mean like instructions you told us?
Interviewer: Right..
Ingrid: I thought they were helpful, like you easily told us like what to do, pretty straightforward. Sometimes I had a bit of difficulty with the technology part because I'm not very good at technology, just like studying things up and stuff, but other than that I thought it was pretty good.
Interviewer: Yes, I see that at the beginning of the study you said you didn't feel very confident with an electronic language lab, so was this the first time you used one?
Ingrid: Yup

2.
Interviewer: How did you apply the strategies you did use? Can you think of any specific examples?

Ingrid: Um, pause, it was more like every time I kind of just made sure that I did the same stuff all the time. Like I kind of got into a routine if we were going to do it, I would like plug

whatever in or if we were gonna do like something, like if you told us what it was, I would kind of quickly think about what I would say and then kind of work with the other person. And then, so I would have my own thing, like what I would say and then bring like both, like collaborate them both together. I don't know if other people did that, but when you told us the specific task, I would think "okay, I would do this, this and this" and then whatever both of us would do, just collaborate that together. Get new ideas, maybe bring in some ideas, type of thing.

Interviewer: So, are you saying that you would maybe change your plan as you went along?

Ingrid: Yeah, hmhm..I would set up a plan but it also depends on the other people or the other person, right?

Interviewer: okay.

Ingrid: So, I would set up my plan as what I would do and then if they brought feedback, I'd be like "oh, that's a good idea", let's do that, or what about this" type of thing, so just like, think of my own thing but be open to suggestions.

3.

Interviewer: Do you consider that the interaction in pairs and groups contributed to your knowledge and use of strategies in your language learning?

(Affirmative or Negative = follow-up question: In what way?)

Ingrid: Yeah, Yes…because you're learning new things from other people, right?. And then, like if I was struggling with something they could help me or, so, it was like interactive learning, I guess. Like we're all kind of teaching each other. So, you teach us, and then if we still don't understand, kind of something that someone knows, you teach us a certain way but like other people have their own way of learning as well. So you get a bunch of ways to learn, and it's easier to find something that you are comfortable with.

Interviewer: Was there anything that you picked up from that interaction? Anything specific that you can think of?

Ingrid: Hmm (nervous laugh)…hmm…can't really think of anything specific right now…but I did like pick up on a bunch of things.

4.

Interviewer: When you think about your whole experience completing the online tasks, what stands out in your mind?

Ingrid: The feedback. It was kind of nice, that you would teach us something and then we'd go home and do our iLrn activity, so we'd learn a bit more and then we could check your feedback on things. Like with the speaking ones, sometimes they were a little bit harder, but it was nice 'cause then you could, we'd see if we were doing well or not. If we did it wrong, you'd take a couple of marks off, so we could go to the feedback and see what it was we did wrong, and so we'd learn from that and be able to do it well.

5.

Interviewer: How did you feel about reflecting upon your own learning? Can you tell me how or if that had an impact on your progress or your strategy choices?

(Interviewer: I think there was one that you had missed, "fuimos a cenar". You can go back in and answer those questions, that's okay.)

Ingrid: Um, like some of them I was trying to, and I'd try to get them done, but some of them I guess I didn't really remember to do them., but, uh, I'm just,I thought they were good. Like when I, after I did them, it was like extra learning. So, it was an easy way to study and it was mandatory to do it, so we would study type thing 'cause some people just don't study or whatever. But if we do have the activities and all the quizzes and like that stuff to do, then we're studying in a way, so it just keeps us working on it and stuff.

6.

Interviewer: How confident do you feel about future language learning situations involving speaking?

Ingrid: Um, I feel right now, I'm not, obviously I'm not like "taught" but if I kept continuing on I would feel a lot more confident about it.

Interviewer: You said initially (in the questionnaire) that you weren't sure if it was easier to speak or or to understand a foreign language. Has that changed at all?

Ingrid: Um, pause, I don't know, it's uh…when we were doing that other activity on the last day, I was struggling understanding what he was saying, um, I feel I find it a lot easier to write it out to understand and read it, rather than speak it and hear it. I'm a visual learner more than, like a hearing learner.

Interviewer: okay, so, you do know that about your own self as a learner.

Ingrid: Yeah, so maybe that's probably why I'm not as….and like it's also hard to hear another language coming in and you're trying to…you hear one word that you think you know, but then, so you, I've had to like focus on that word and then I miss a couple things, so I have to keep going back, but…yeah.

7.

Interviewer: Is there anything that you might do either the same or differently when facing tasks in other learning contexts in the future?

Ingrid: If it's like a recording thing, I think I'm gonna take notes on random things that I hear, so if I hear a Spanish word that I know I'll write it down in Spanish and write everything I know and then go translate it after, kind of, so like if I hear a couple sentences and if like in each sentence there's four or five words I know, then I'll just write all those words down and then I'll go back, like pause it and then figure out what they are in English, like keep replaying

it and stuff. I think just replaying everything and just making and like going through everything numerous times and just making sure I really get it ingrained in my brain.

Interviewer: Can you see that being any kind of strategy that you would use in other learning contexts?

Ingrid: Yeah, I think that it would be a good way to study for anything, just keep hearing it, keep writing it down, just like, just a continuous to make sure for like as long as you…it's like reading a book four times, the fourth time you've read it you know it right away, right? So, I think just doing it over and over and over again and just putting it into my brain...like that's…I think that's just a good way to study anyway.

8.
Interviewer: Can you tell me what you feel is the most important thing that I should know about your learning experience?

Ingrid: Uh…hmm…most important thing…pause…I sometimes felt like we didn't have enough time to get it done. Like we'd only write it down and we couldn't record it and stuff. So I just feel like a little more time in the activities, 'cause it is hard to get everything set up and get..it's like, some people are not good with technology, like figuring everything out and then kind of collaborating with other people…it takes a lot longer sometimes because other people are not familiar with the language so they need to really go through…like it could take me a minute to figure something out but it could take them five, so maybe just a little bit more time on the activities…in class collaborations. Yeah, other than that it was pretty good. And I really liked the iLRN activities, I thought they were really helpful.

Interviewer: all of them? All of the different types?

Ingrid: Yes, because every single task had a little bit of something relating to the test.

Interviewer: okay, so for in preparation for tests?
Ingrid: Yeah
Interviewer: thank you, that's good to know. Thank you so much for coming in.

Date: April 22, 2014 **Participant:** Sarah
Location: Okanagan College – KLO, B109 **Time:** 4:40 pm

1.
Interviewer: Do you feel that the strategies instruction you received affected how you carried out the activities in the online environments?
(Affirmative answer = follow-up question: In what way?)

(Negative answer = follow-up question: What approach did you use?)

Sarah: Like how you taught in class? Yeah, I think so. It was really helpful because you would talk to us in Spanish and make us answer which was terrifying (laughs), but it was like the best way to actually think about it. And then I think talking helped the most so that when you actually went on the computer to do it, you had a lot better knowledge of what you were doing there.

Interviewer: Okay, yeah, any other ways? Did it make any difference as to how you approached the task? So, are you saying that you felt a little more confident when you were approaching the task online?

Sarah: Yeah, and the fact that we went through a lot of things together, I felt like our class was a lot of hands-on learning, it wasn't just like textbook knowledge and that is what made doing things online more manageable because now you're suddenly alone and you have that more foundational learning.

Interviewer: Right, right.

2.
Interviewer: How did you apply the strategies you did use? Can you think of any specific examples?
(SEE COMMENT FROM SARAH ABOVE WHICH ANSWERED THE FIRST PART)
Interviewer: So can you think of any specific examples in any one of the online tasks you did?
Sarah: (long pause 9 sec.) Well, I remembered our answers from class a lot, (laughs)
Interviewer: Okay, so, you relied on what you had learned before?
Sarah: Yes. I always had to write it down and then when I was online I could look back at what we did in class because it was always so similar. Because I struggled a lot, it was really hard, so,
the class helped.
Interviewer: Okay, and, is there anything specific you did to help yourself in your own learning when you did that?
Sarah: Um, I made a lot of flashcards and I listened to a lot of Spanish music, in like music that I knew in English and then I'd listen to like Spanish versions of it, which was just like my own way to try to integrate it into my head and listen to it and hear it 'cause they're speaking so fast, it's hard. Like is that what you're asking?
Interviewer: um, um, yeah, that's one of the things, and I guess thinking about when you had to do a particular task, so here is the problem and here's what you need to do. So, did you use those things that you had done to plan or prepare for the task?
Sarah: How I planned or prepared for the tests or the assignments is I'd go through all of the verbs, and I would conjugate each one like seventeen times and like, so, I'd just…repetition just over and over and over. Same with the flashcards, I'd just repeat what it meant and the word over and over, and that's like how I had to learn it. Like conjugate "hacer" nineteen times in like all the different tenses. It was just a lot of repetition.

Interviewer: right, and how about where you had to communicate in tasks through speaking. How would you prepare for that?

Sarah: online dictionaries (nervous laugh)
Interviewer: online dictionaries, okay, so would you go look for a reference?
Sarah: or I would look for a similar conversation in the textbook and adapt it as my own – which might be plagiarism, but…
Interviewer: okay, hmm, no…(interrupted by Sarah)
Sarah: like I'd look for examples that were close to it
Interviewer: okay (moved to next question)

3.
Interviewer: Do you consider that the interaction in pairs and groups contributed to your knowledge
and use of strategies in your language learning?
(Affirmative or Negative = follow-up question: In what way?)
Sarah: Every time we did it, I'd get really scared because I know it would push my Spanish knowledge, so I think that was good. It definitely helped a lot. It was just like one of the more scary tasks we did because it makes you really think and really on the spot, it's like, okay, do (Sarah's emphasis) I actually know anything, I don't know. So, I found whenever I'd get panicked in class, like when you were talking to us or put us in groups, that usually meant that there was gonna be some really good learning cause it pushes you out of the normal just read the textbook kind of…

Interviewer: Okay, and in what way did the pair or group interaction affect your use of your strategies?

Sarah: Um, it was nice to talk it out with other people, and they would, like, you'd bounce ideas off each other which is really good because I can get very (pause)…like writer's block kind of thing, where it's just like…oh my gosh, I don't know what to say, even if you know it, and then once you start bouncing ideas off each other you can like figure it out and get the ball rolling a lot easier.
Interviewer: hmm, mm, okay. And, when you had finished the task, did you take any time to look back or think about it or talk about it at the end?
Sarah: Uh, not with the group, but I know that I looked over a lot of our notes that we had made to prepare for the oral test. So, I used it a bit later.
Interviewer: okay, that's great.

4.
Interviewer: When you think about your whole experience completing the online tasks, so thinking about, we had one last semester with family, and then in this semester we did the going out for dinner, and the party and the Survivor, and those kinds of things, so when you

think about all of the iLRN tasks and Collaborate task, is there anything that stands out in your mind?
Sarah: They got easier.
Interviewer: Okay.
Sarah: 'Cause the first one was really hard, and then like the restaurant one was a little bit difficult but we had time to prepare.
Interviewer: right.
Sarah: but the Survivor one I felt was pretty simple and like me and X were able to be just like okay, here's words, your words – let's put this in a sentence, and so it was more like…. the first time we did it it was really hard, I guess it just got easier.
Interviewer: um, hm. Why do you think that is?
Sarah: The course. Like cause we learned a lot more and now the semester's done you…
Interviewer: so in terms of your own learning, though?
Sarah: Yeah, I think that I got a lot better as time went on but it was something that I had to work really hard on if I wanted to understand it at all. So, like looking back to where I was last semester to where I am now, I feel like I've learned a lot more. Just through the whole course, cause like that's all I've ever learned is Spanish.

5.
Interviewer: How did you feel about reflecting upon your own learning? Can you tell me how or if that had an impact on your progress or your strategy choices?

Sarah: It's hard.
Interviewer: okay, in what way.
Sarah: I just never really analyze myself very much, well I do all the time, but I don't write it down. It's just…different.
Interviewer: Different, okay. Did it have any impact on your progress or on the choices you made for your strategies?
Sarah: Is that just reflecting on what we did?
Interviewer: think to when you were reflecting on something, "what was most challenging?" or "how did I do this?" Did you ever take that reflection, and think about it, and say how it may become part of the next task?
Sarah: I didn't, but in hindsight that was pretty dumb. I think like I just, I get so busy that I just forget about everything until it's in my face…
Interviewer: okay
Sarah: …but I should have
Interviewer: Do you mean because of the intensity of it, in the moment? Is that it, X?
Sarah: Yeah.
Interviewer: okay, alright. So could you say that the reflecting part didn't have an impact on your progress?
Sarah: Yeah, I think that if I had reflected on the reflection though, it would have. But I just never took time to…
Interviewer: okay.

6.

Interviewer: How confident do you feel about future language learning situations involving speaking?

Sarah: This is hard to answer because while it's gotten easier, especially like within class, oral presentations, um, I just would be terrified to talk in front of the class in English, never mind in another language so I'll always have serious angst over that.

Interviewer: okay, okay, um. So, if you think about in Spanish you'd said earlier in the interview that in first semester it was really hard, but you found by the end of this semester you felt quite comfortable?

Sarah: uh, huh.

Interviewer: So, do you think that will make you more confident or not necessarily.

Sarah: I think it will make me more confident, for sure.

7.

Interviewer: Is there anything that you might do either the same or differently when facing tasks in

other learning contexts in the future?

Sarah: Outside of language?

Interviewer: yeah. Anything you'd do the same or differently?

Sarah: Uhm, I think I found in Spanish that I relied a lot on dictionaries the first semester and a lot of this semester, but one time I was stuck without a dictionary and I was just, it took a lot longer but I realized if I thought about it and figured it out, I had the skills to actually do it which was mind-blowing…oh I've just been selling myself short, like I can do this, but the Internet's right there so it's so much easier. So, I think that that actually take time, and like I learned this with my stats class too. It's super overwhelming and I tend to just look at it that way and get panicked but if I just calm down and I'm like you know--take this step by step calmly, think about it, you *know* the answer, like just figure it out step by step because now I can conjugate all the verbs and I'm like..I just relied so heavily on dictionaries and stuff like that so I think just taking a deep breath and knowing that as long as I understand the foundation of this which I usually do, I can do this and not sell myself short, of cheating with Internet tools…

Interviewer: Although internet tools can be good tools, too

Sarah: …can be good tools, yeah.

8.

Interviewer: Can you tell me what you feel is the most important thing that I should know about your learning experience?

Sarah: hmm, it's a good question.

Interviewer: take a moment if you want to think about it.

Sarah: (13 sec. later) I don't know, it was all really good. Um, I really liked the journals, well when I say I really like them, I don't, but I mean learning wise (laughs) they're good. And I like the portfolios, how you can like just see the progress of it all in one bundle. And how you

talk to everyone at the beginning of class, while terrifying, it's one of the best, because the whole time I'm trying to figure out what you are saying and trying to make my response behind other people, yeah it was good though. I really enjoyed it, and I'm like excited to carry on in it.

Interviewer: Well, good. I'm just looking at the questionnaire from the beginning of the study, and you weren't too sure about whether or not it was okay to guess if you don't know a word in Spanish. How do you feel about that?

Sarah: I feel a lot more confident guessing which is, I don't know if that answers the question, but I think that…might as well. Because like a lot of the time you sell yourself short and you know it even if you don't think you do, so take that chance. I guess (laugh), the moral is you can guess now.

Interviewer: And do you still disagree with this statement? "It is easier to speak than understand a foreign language"

Sarah: Yes. I think it's easier to understand, if that's what I'm saying. Because I can listen to it, and pick out a lot. But if someone's like…"say something to me"…I'm like…uhm..(laughs)

Interviewer: Okay, great. And the other comment that you had made was that you have three Spanish apps on your phone. Can you tell me a bit about that? What made you do that?

Sarah: Um, last summer I decided that I wanted to speak Spanish and I gave myself until the end of…my…when I graduate with my degree, which is two more years. I don't know, it seemed a lot more possible then which is why I'm in Spanish, and then I found out that I needed Spanish, I mean language credits, so I can graduate. So I thought, perfect, it's a sign so I need to learn Spanish. That's why I like listening to music, I try to find books and I try to do everything I can in class. And then when I got my iPhone for Christmas, there's just so many language apps you can get online so I just downloaded a bunch of tools like Spanish games, Spanish dictionaries, Spanish writing tools, just to help me because I want to actually learn Spanish.

Interviewer: What attracts you to Spanish?

Sarah: Um, I went to Honduras and so I spoke it there for a little bit and uh, I figured out that when I was actually immersed in the culture it was actually pretty easy to pick up on. It's a lot more hard here, but um, I don't know, I've just always wanted to speak Spanish fluently, and most of my friends speak other languages, it's Spanish, so I'd love to be able to talk to them.

I hope to go to South America and so I want to know Spanish for that.

Interviewer: Thank you for being so forthcoming with your opinions because that's really helpful to me, and I will get back to you via email when I have the report. Thank you again.