LANGUAGE INSTRUCTORS' DIGITAL COMPETENCES IN THE CONTEXT OF EMERGENCY REMOTE TEACHING: A PROFESSIONAL DIDACTICS PERSPECTIVE

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Thesis submitted to the University of Ottawa
in partial Fulfillment of the requirements for the
Master of Arts in Bilingualism Studies

Official Languages and Bilingualism Institute

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Abstract

This thesis presents ten interviews with French language teachers regarding their experience of emergency remote teaching (ERT) during the Covid-19 pandemic. Their responses are analysed through the lens of professional didactics (Pastré, 1999), and by looking at models that have been created to describe the adoption of technology. The interviews are placed in the context of similar studies done before or during the pandemic. The instructors in this study were asked to describe their experiences from the sudden switch to online teaching during the pandemic and for the first eighteen months of it, including how they coped, what new digital competencies they developed and how, their perception as online teachers. and the digital practices they would like to carry forward. The models to describe technology integration are revisited in the context of ERT. Recommendations are made for stakeholders for language instructors' professional development in the case of future ERT scenarios.

Acknowledgements

I would like to express my deepest appreciation to Dr. Marie-Josée Hamel for the generosity of her support and guidance, the sharing of her expertise, and the introduction to academic opportunities throughout this process.

I would also like to thank the committee members Dr. Vasiliki Spiliotopoulos and Dr. Jérémie Séror for their valuable time and feedback.

I'm extremely grateful to the University of Ottawa and the Official Languages and Bilingualism Institute for the financial provisions that made it possible for me to study at this level.

Special thanks go to all of the interview participants, to the practical and inclusive Writing Cafés organized by the Faculty of Arts, and to Louis-David Bibeau for his collaboration throughout the program.

I would like to thank Ricardo Ferreira Filho, who gave me the idea to do a master's program during the pandemic, and to pursue the option to write a thesis.

Finally, for their support and companionship, I'd like to acknowledge Snowy the cat, who sat on my desk, and Lucy the dog, who sat under it.

1. Introduction

1.1 Historical context

Language education has a long history of using technology to make the unique subject easier for language learners to grasp. The 17th century educational reformer Jan Amos Komenský, known in Latin as Comenius, felt that "to learn a second language is to know things in the world, to deepen the learner's wisdom and to form human beings" (Matsuoka, 2004, p. 5) With that in mind, Comenius published *Orbis Pictus,* a ground-breaking encyclopaedia illustrated with woodcuts and labels in Latin and up to four local languages that remained popular in Europe for 200 years (Calvocoressi, 2006, p. 222). In modern times, this book has been recognized for its ground-breaking format combining knowledge, words, and pictures, in which its multilingual labels "act as hypertextual links," with rules of presentation that "could … come from a manual for designing web pages today" (Codognet, 2002, pp. 44, 45).

The willingness to innovate in the language classroom can be seen to this day. A new chapter began in the 1960s with the global development of Computer Assisted Language Learning (CALL), followed by online language learning, which added a multitude of possibilities and affordances with the advent of the world wide web. As language classes moved to delivery methods via online platforms, ongoing "studies in this area have recognized that online learning requires more than simply presenting the same curriculum in the same way over [a] new medium" (Hubbard, 2009, p. 12). In the Spring of 2020, an unprecedented educational experiment began when, in response to the declaration of a pandemic by the World Health Organization, classes moved from bricks-and-mortar

classrooms to online platforms seemingly overnight. In March 2020, the message in Canada was that preventative lockdowns and other restrictive measures would last for two weeks. In response, many organizations and instructors initially focussed on the technical aspects of moving their on-campus classes online; in other words, finding suitable platforms, creating links, turning on the mic, and learning how to share the screen and sound.

Language classes present unique challenges to being taught online. Shana Poplack, the Canada Research Chair in Linguistics and a professor at the University of Ottawa, highlighted that "language acquisition requires two things: exposure to language as it's actually spoken, and the possibility of interacting with native speakers" (quoted in Pritchard, 2021). With a focus on spoken language and authentic interactions, audio issues can feel especially frustrating when listening to an instructor or a recording or trying to perfect the pronunciation of a new phoneme. Instructors who use physical movement or realia, and learners who learn best kinaesthetically, may feel stymied at sitting in a chair, reduced to a rectangle of pixels. And how could language instructors transmit the non-verbal aspects of a different language culture, such as sharing food and drink, through a screen? Yet, just as there are ways that a movie adaptation can be better than the book it was based on, certain aspects of language instruction may work better on the screen rather than in-person (University of Ottawa, 2021).

That initial scramble to move classes online in Canada lasted at least until December 2021, or approximately 21 months. Shortly after the pandemic began, in May 2020, the Director of the Digital Pedagogy Lab noted "if the pandemic lasts 18 months, as some of the projections say it could, we are going to see education change dramatically in that time" (Baker, 2020, p. 3). He also noted that the pedagogy does not necessarily have to change

with the conditions, rather it is the methodology that must change. He recommended that instructors reflect on why they teach and what's important to them when they teach, then think about how to get that done online, and suggested that this self-reflection would help instructors to overcome any fears of technology and focus on what they love about teaching and why they want to do certain activities (Baker, 2020).

With the timeframe of the first year and a half of the pandemic in mind, this moment in the history of online language education can be thought of as a large-scale study in real time. In Canada, universities across the country made the decision to move online in March 2020 and stayed online throughout the 2020/21 school year (University Affairs, 2020). This created the need for an accelerated adoption of online technologies in virtual classrooms from language instructors, including instructors of the official languages, English and French, as well as of foreign and heritage languages.

1.2 Motivation for the research

The Covid-19 pandemic has presented an unprecedented occasion in Canada and around the world to implement the use of technology in the language classroom. This simultaneous event period may have accelerated the professional development of language instructors regarding the use of technology synchronously and asynchronously in their online classrooms. While some instructors may have welcomed and embraced this change, others, depending on their existing technological competencies and pedagogical postures, may have had a more difficult time adjusting to teaching languages online. I was motivated to take advantage of the opportunity for research during this historical period and learn which technological affordances language instructors appreciated and want to continue to

use even as the world moves out of the pandemic period. This experience of language instructors learning and adapting on the job, and, in some cases, on the fly, also lends itself well to an analysis through the lens of the French-origin concept of professional didactics, which values experience and expertise learned at and for work.

1.3 Positionality

I am a career English as a Second Language instructor with experience teaching planned online classes. In 2005, I taught with the French company Télélangue using a toll-free telephone number and online custom business curriculum. Ten years later, I joined AnglaisSanté, an English for Special Purposes course designed by McGill University School of Continuing Education for francophone and allophone healthcare professionals working across the 1.6 million square kilometres of Quebec. In both programs, I saw the benefits of convenience and customization offered to busy professionals who could study exactly what they needed, wherever they happened to be.

Previous to joining the master's program in Bilingualism Studies at the Official Languages and Bilingualism Institute (OLBI) at the University of Ottawa, I had the opportunity to train, observe, and mentor foreign language instructors to Canadian diplomats, some of the classes of which were held online. At the same time, I proposed moving a foreign language maintenance program to a remote delivery system using a flexible calendar booking system in order to optimize instructor and learner time; a proposal that was implemented and has been operating since Summer 2019.

These personal experiences as a language instructor and program administrator have motivated my interest in the further benefits and affordances of teaching languages online.

My approach as a researcher into the experience of language instructors during the pandemic is neutral. I recognize that sufficient training time, specially developed materials, and learner agency might not have been available for language instructors during the pandemic. The initial anxiety and uncertainty in the early days and months of the pandemic may have affected them as well. In the case of language instructors in the Canadian university environment, they had to perform this switch near the end of the Winter 2020 semester while balancing the demands of the syllabi, the work that learners needed to complete to receive credit for their courses, and possibly large class sizes; a complex situation that in some cases may have required many extra hours of preparation.

1.4 Structure of the thesis

In this thesis, we will start with a brief look at some definitions of computer assisted language learning, online language learning, and emergency remote teaching (ERT). Then we will consider seven models that are useful for describing instructors' digital competencies, followed by a literature review of five pre-pandemic studies and seven studies that have emerged from the pandemic, and the resultant research questions for this thesis. After that there will be an explanation of the methodology for the current study, including the theoretical framework, and a description of the participants, procedures, and method of data analysis. That will be followed by an analysis of the responses to the research questions, a discussion which will revisit the models in the context of ERT, and the conclusion.

2. Literature review

2.1 Online language teaching and its various configurations

The history of online language teaching began with the emergence of Computer Assisted Language Learning, or CALL, in the 1960s (Hubbard & Levy, 2016). In the 1980s, CALL became widely used in university settings when computers such as Apples became more accessible for the education sector. Initially, CALL methods were implemented for three main reasons: as a replacement for traditional records and cassettes in pronunciation language labs, to automate flashcards, and for word processing software. In the 1990s, a major shift occurred in CALL with the creation of the world wide web and the increasing affordability for language learners to buy a personal computer to have at home. This development brought access to new features and authentic materials, from online dictionaries to YouTube videos (Hubbard, 2009). The next decade, the 2000s, saw the advent of smartphones and social media, both of which were also integrated into CALL. As one of the leading experts in the field writes, "CALL is a dynamic field that changes rapidly because the technology that helps to define it changes rapidly" (Op. cit., p. 15). Ongoing developments in the field of CALL have been categorized as following one of two models: either the use of technology including an instructor as a guide, or using the computer itself as the guide, also known as the *tutor* (Levy & Stockwell, 2006). The computer as tutor is the case over a scale of activities; when the computer program or application can, for example, provide correct answers to true-false or multiple-choice questions, all the way to "error diagnosis, error correction, and the generation of individualized learner feedback" (Op. cit., p. 23) in a wide range of learner and target language combinations and formats. This

functionality of the computer as tutor also creates the opportunity for greater autonomy on the part of the learners, as they can move from an instructor-led program to studies that are more self-directed or self-paced.

The ever-evolving nature of the field means a sliding understanding of the definitions used to describe the features of CALL. In fact, "practitioners and researchers have yet to agree on common definitions and terminologies… [which makes it] difficult for researchers to perform meaningful cross-study comparisons…[and] contributes to conflicting findings" (Moore et al., 2011, p. 129). As identified by the study of the literature done by Moore et al. even terms like *education* and *learning* can have a variety of definitions; the two terms are sometimes used synonymously and sometimes differentiated. That being said, studies have revealed that the most common definitions to be used and understood are as follows below.

The expressions *distance* or *remote learning* are often used interchangeably along with *online learning*. Distance learning has long referred to "an instructor who was physically located in a different place from the learner" (Moore et al., 2011, p. 129). The use of the term predates the use of computers in delivering instruction, back to the time when books and assignments were sent by post, which would necessitate asynchronous learning. The term has evolved with technology over the years, so that now distance learning can refer to synchronous or asynchronous learning (Moore et. al., 2011).

In the 1980s, the terms *e-learning* and then *online learning* came into use, with most published articles favouring a definition that refers to the use of web-based tools, and some articles specifying that a component of interactivity needs to be included in e-learning or online learning (Moore et al., 2011). *Web-based* and *virtual learning* are also used interchangeably in this context. For the purposes of this thesis, I prefer to use the term *online*

learning over *virtual learning*, for the reason that the word "virtual" can also be understood from its other definition of "almost" in English (Oxford, 2007, p. 3538). This idea of "almost" can therefore create a negative connotation regarding the benefits and affordances of online language classes in contrast to in-person classes, which may be seen as preferable.

All of the above, whether described as virtual, distance, remote, or online learning, may take place synchronously or asynchronously. *Asynchronous* learning happens when instructors and learners do not need to be together at the same time. For example, there could be pre-recorded lectures, exercises, or other materials for the learners to work through on their own time or at their own pace. This can be an advantage when learners are managing other personal and professional responsibilities, or when the learners are spread out over a wide geographic area or even across time zones. *Synchronous* classes are where learning takes place at the same time; that is with instructors and learners in a classroom together, either in a traditional physical setting or using an online platform.

Most recently, the terms *blended, hybrid, bimodal,* and *mixed* have come into use. All expressions usually refer to a combination of distance and in-person classes, with many possible combinations or variations (Nissen, 2019). The term *hybrid* is considered more precise to describe the physical location of the learners, as *blended* can also, more broadly, be used to refer to other ways of incorporating technology in the classroom (Nissen, 2019). The combination of distance/online and in-person classes could be set by the instructor, or it could be an option for the learners to attend in-person or online, depending on where they are geographically, or even how they feel about physically attending a class on a particular day. For example, if the weather is unpleasant or a learner or someone who they care for feels unwell, the learner may prefer to stay home and attend the class online (Hubbard,

2009). Hybrid language classes have specific characteristics that differentiate them from other classes that may be offered in this format (Nissen, 2019); a bimodal class may include learners who are always remote, who are integrated into the class with learners who are always physically present.

Another more recent development is that of the *flipped* classroom, in which learners do the 'homework,' or input, before each class:

> The flipped part would typically be online, and the class with the teacher could be in-person or online...In its more current format, flipped courses make use of technology to provide students access to content – through videos or interactive presentations – and lower-level cognitive activities (i.e., remembering and understanding) while in-class activities focus on higher forms of cognitive work (i.e. application, analysis, synthesis, and evaluation) (Tecedor & Perez, 2021, p. 508)

Many other acronyms are used and defined across various studies, articles, and special branches of language teaching and CALL. For example, a *task* is 'an activity with a linguistic and formative dimension" (Jeanneau, 2021, p. 109). In Task Based Language Teaching, or TBLT, the definition of a task goes farther and "corresponds to an action that one may have to carry out in life' (Jeanneau, 2021, p. 109). Both tasks and the TBLT approach may be modified and carried out in online or in-person language classrooms. In fact, 'the use of the Internet [allows] an opportunity to promote the interactions between learners of the same group and thus to favour their learning' in TBLT (Caws et al., 2021, p. 121).

These definitions from CALL comprise the many options, individually or in combination, that language instructors may have had at least some access to as their classes moved online from the outset of the pandemic.

In the recent context of the pandemic, another term has come into common usage to

encapsulate the educational experience; this will be discussed in detail in the following section.

2.2 Emergency Remote Teaching (ERT)

Emergency remote teaching (ERT) is defined as a "temporary and abrupt shift to instructional delivery due to crises such as weather, war, or health" (Moser et al., 2020, p. 2), "in order to maintain continuity of education" (Jin et al., 2022, p. i). In the unprecedented context of the Covid-19 pandemic, UNESCO recorded that by April 2020, over a billion learners from pre-K to university were affected by the partial or full closure of their school or institution in 117 countries around the world (2020).

Although the term ERT is now being used regularly in the literature to describe the situation that occurred in March 2020, "ERT has been practiced around the globe for decades" (Jin et al., 2022, pp. i). An example of how ERT has been used can be found in Afghanistan in the early 2000s. In that period "where educational provision was hampered by security threats, distance education, radio education, and the distribution of DVDs have been used to surmount those challenges, while also promoting aspects such as girls' education" (Davies & Bentrovato, 2011, p. 39). Those low-tech ERT solutions were the most expedient for instructors and administrators who needed to find solutions to overcome the challenges of distance, poverty, or unrest, and enabled learners some continuation of their education from the safety of their own homes.

Indeed, a key consideration of ERT is that it must be "reliably available during an emergency or crises" (Hodges et al, 2020, np). The issue of availability of ERT in the context of the onset of the global Covid-19 pandemic in 2020 meant that institutions needed

to take into account the "numerous factors [that] might have affected the experiences of educators and learners including access to technology and broadband internet, socio-economic status, training and experience, institutional or [governmental]-level mandates, and age/development of learners" (Moser et al., 2020, p. 2).

As ERT is triggered by unexpected and dramatic circumstances or crises, it is understood to be a short-term educational solution. ERT has been described as "temporary access to instruction and instructional support in a manner that is quick to set up" (Hodges et al., 2020, np). ERT which uses online conferencing platforms is therefore distinct from courses that have from the beginning been planned, intended, and designed to be delivered online. However, the two are sometimes conflated, which can be detrimental to the general understanding of online learning:

> Online learning carries a stigma of being lower quality than face-to-face learning, despite research showing otherwise…Hurried moves online by so many institutions at once [in the case of ERT during the pandemic] could seal the perception of online learning as a weak option…Nobody making the transition to online learning under [extreme ERT] circumstances will truly be designing to take full advantage of the affordances and possibilities of the online format. (Hodges et al., 2020, np).

Emergency remote teaching is a necessity in times of crises in order to continue education that would otherwise be interrupted. While course packs can be physically distributed to learners, technology is a great aid in delivering ERT to a community of learners under the guidance of an instructor. However, online ERT as a temporary solution must be understood separately from courses that were designed to be online. The requirement of ERT in March 2020 forced the professionalization of language instructors who needed to move in-person classes to online platforms on very short notice. How they were able to do so depended on their own experience with and attitude towards using

technology in the language classroom. The use of technology in instructors' professional practice can be described through the use of models, several of which will be considered in the next section.

2.3 Models of language instructors' digital competencies

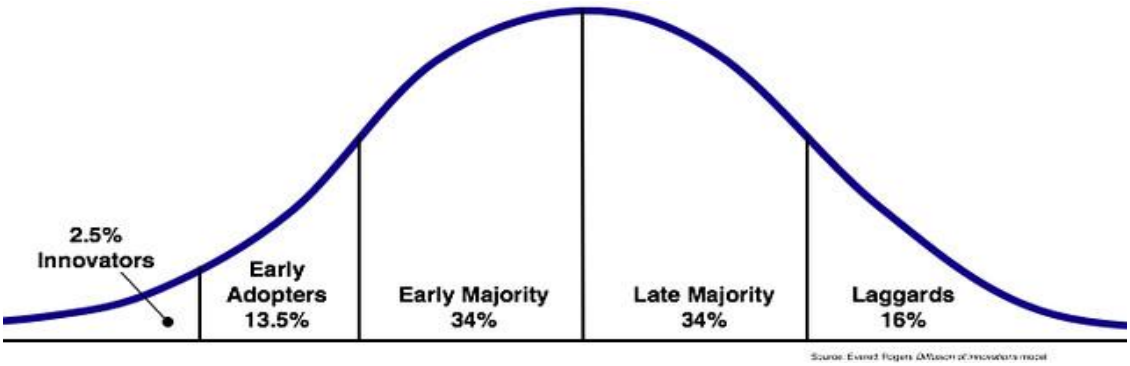
The literature provides a range of models with which to characterize instructors' online competencies and their rate of adopting new technologies; of which we will consider seven. The first model is generic for any profession, and the following four models apply generically to instructors of any subject. Finally, we will review two models of online competencies that have been specifically designed to describe language instructors.

2.3.1 Diffusion of Innovation theory

The Diffusion of Innovation theory analyses the rates and factors which play a role in the adoption of technology and can be applied to all fields and professions. This model was developed in the field of sociology in 1958 by Everett Rogers (Rogers, 2003), and has been used in many domains, from agriculture to healthcare to music. The model describes five steps in the process that an individual or organization goes through when deciding to adopt new technology. The five steps are as follows: "gaining knowledge about an innovation, being persuaded of its value, making a preliminary decision to adopt the innovation, implementing their decision to adopt, and confirming their decision to continue using the innovation" (Markee, 1993 p. 231). The Diffusion of Innovation model shows an *x*- line representing time, with an S-curve calculated by the statistics of mean and standard deviation, and it divides the "normal frequency distribution into five adopter categories:

innovators (2.5%), early adopters (13.5%), early majority (34%), late majority, and laggards [those slow to adopt and falling behind the others] (16%)" (Rogers, 2003, p. 280-281). The S-curve is shown below:

Figure 1
Roger's Diffusion of Innovation



(Rogers, 2003, p. 281)

Rogers himself noted that "one difficulty with this method of adopter classification is incomplete adoption, which occurs when innovations have not reached 100 percent use" (Rogers, 2003, p. 281). Another consideration is that "one weakness of diffusion research is a dependence upon self-reported *recall data* from respondents as to their date of adoption of a new idea. Essentially, respondents are asked to look back in time in order to reconstruct their past history of innovation experiences" (Rogers, 2003, p. 126). However, the statistical distribution, as applied across professions, "has traditionally been applied to educational technology adoption in university settings" (Spiliotopoulos et al., 2022, p. 3). The theory was recently used to describe the "implementation and diffusion of three new/innovative activities...: 1) post-entry language assessment, 2) content and language integration in a

disciplinary course, and 3) professional development activities" at a university (Op. cit.), and the findings "suggest[ed] that an innovation cannot be sustainable if there is minimal support from leadership or faculty collaboration in higher education" (Op. cit.). Therefore, the Diffusion of Innovation theory is relevant when considering the range of experiences of language instructors with the uptake of new technologies, especially on the accelerated timeline of the pandemic.

A generic model of technology adoption, the Diffusion of Innovations model can be applied across many professions, including the specific experiences of language instructors and their uptake of technology in the classroom.

2.3.2 SAMR model

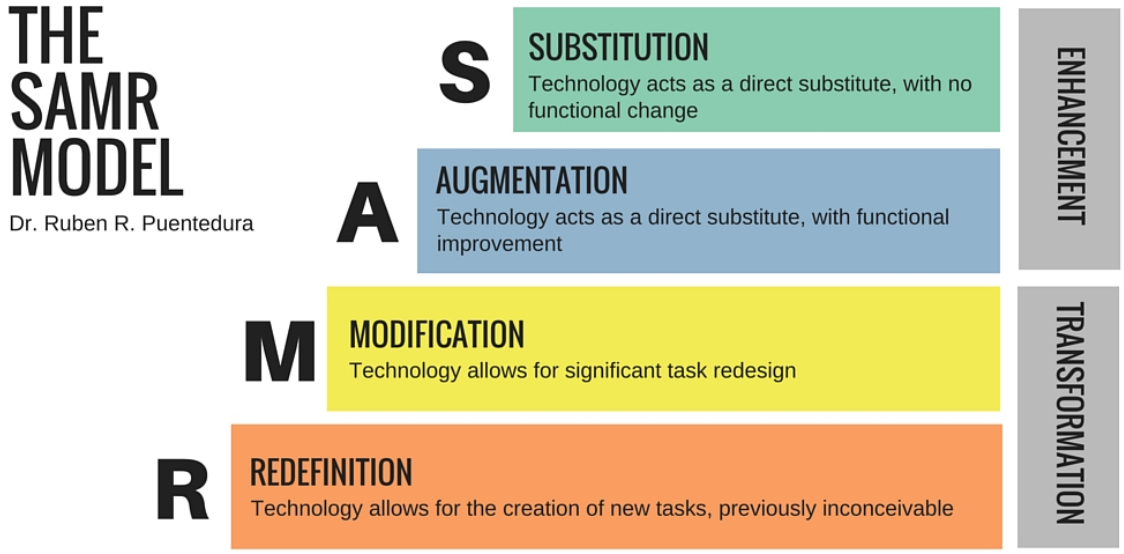
Moving to a model that was designed for educational settings, the Substitution, Augmentation, Modification, and Redefinition (SAMR) framework by Reuben Puentedura in 2006 was developed to look at the adoption of technology in K-12 classrooms (Hamilton et al., 2016). SAMR has no official graphic presentation; however, it is often visually represented as a series of steps (Smith, 2019). This graphic presentation captures the idea that an instructor could be categorically placed on any step and then, as he or she becomes more comfortable using technology in the classroom, move down the steps towards greater integration of technology.

Starting at the beginning, which is usually represented as the top, the first step is Substitution, which is 'technology acting as a direct substitute, with no functional change' of the instructor's pedagogical practice (Hamilton et al, 2016, p. 434). The next step on the SAMR model is Augmentation. In this step, "technology [still] acts as a direct substitute,

with functional improvement" (Hamilton et al, 2016, p. 434). These two steps, Substitution and Augmentation, are grouped together under the heading "Enhancement" (Hamilton et al, 2016, p. 434), and represent those changes to an instructor's practice which are improved upon by using technology to substitute a task with no real change. For example, this could include using a meeting platform like Zoom to deliver a course lecture for Substitution. Augmentation adds a functional improvement, for example using a course LMS to collect assignments that were completed in Word; the LMS will provide a time stamp of the submission, keep all the assignments collected in one place, and allow for dialogue between the student and instructor.

The last two steps of the SAMR model are classified together under the heading "Transformation" because they signal a real shift and new way of doing things in the instructor's pedagogical practice. Of these, the penultimate step, Modification, is considered to have happened when "technology allows for significant task redesign" (Hamilton et al, 2016, p. 434). An example of this could be using a shared Google doc to do a collaborative writing task that would be onerous with pen and paper, which could require having one student as a "secretary-writer" and the other student(s) contributing orally. The final step of SAMR, Redefinition, allows for the creation of 'brand-new tasks that were previously inconceivable' (Tereda, 2020, np). A task using Flipgrid, for example, allows for Redefinition, such as by allowing students to record a short video of anything, from introducing themselves to providing an outline of an academic paper that they would like to write; the tool then allows other students to watch, like, and respond with a recording or written message in a dialogical way with all of the other students in the class.

Figure 2
The SAMR Model



(Smith, 2019, np)

2.3.3 TPACK, UTAUT, and TAM models

In addition to SAMR, there are other models regarding the adoption or use of technology in the classroom. Although these models are generic for any subject, they may be useful when considering language instructors as well. TPACK (Technology Pedagogical Content Modelling) considers the relationship between teachers, teaching, and technology; technology is seen as a complement to instructors' existing professional skills (Djiwandono, 2012). Another theory, UTAUT (Unified Theory of Acceptance and Use of Technology) is a model from the viewpoint that instructors will use technology that easily accomplishes their goals; in other words, they would resist implementing technology that has a greater learning

curve for them personally. This theory also considers that instructors adopt technology that "their colleagues also use, and that enjoys support from the institutions they work for" (Djiwandono, 2012, p. 613). Combining these two models is TAM (Technological Acceptance Model), which creates a spectrum of technology's usefulness and ease of use in the classroom (Djiwandono, 2012, p. 612). This model has echoes of the Diffusion of Innovation theory, as it takes a six-step approach to the adoption of technology in the classroom, considering the "actual system of use, behavioural intention to use, attitude toward its use, perceived usefulness, perceived ease of use, and external characteristics. The external factors prompt users to form perceived ease of use and usefulness of information technology" concepts (Djiwandono, 2012, p. 608).

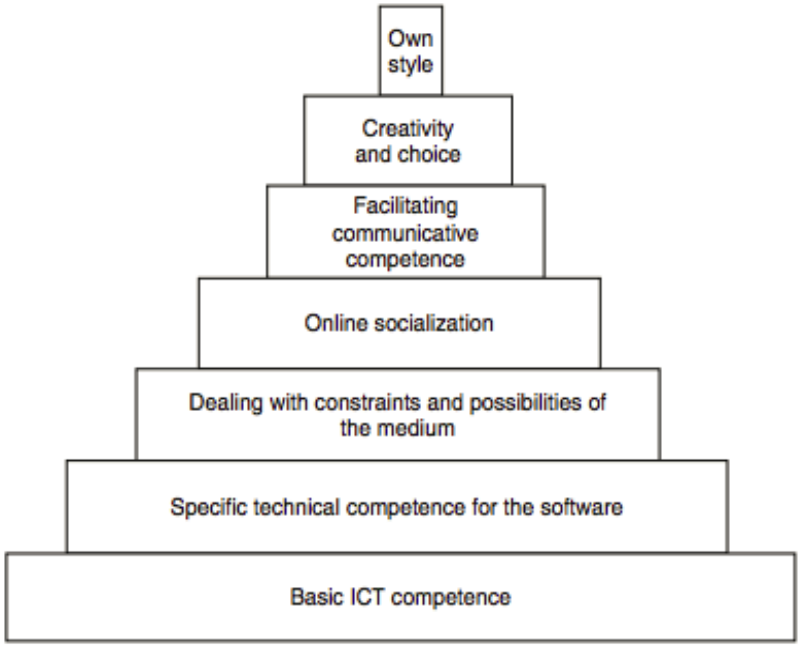
The above educational models describe the various levels and types of competencies that instructors deploy when they integrate technology. These models, while not specific to the language learning and teaching context, can still be useful to describe the experience of language instructors.

2.3.4 Hampel and Stickler model

Moving from the generic models, whether for any profession or for any type of classroom, to the language classroom, one model that focuses specifically on the online competencies of language instructors is a pyramid of seven steps. This model, developed in 2005 by Regine Hampel and Ursula Stickler, illustrated below, includes "higher skills [that] are supported by a set of [three] lower skills based on more technical or procedural knowledge that are shared with other approaches to teaching and learning, for example TPACK" (Hampel & Stickler, 2015, p. 64). The Hampel and Stickler model "indicates that

skills build on each other, not in a successive time sequence of training events but as increasing competence, with the lower levels forming a solid, reliable foundation" (Hampel & Stickler, 2015, p. 5). The seven steps of the pyramid are basic information and computer technology (ICT) competence, specific technical competence for a software, dealing with constraints and possibilities of the medium, online socialization, facilitating communicative competence, creativity and choice, and own style. The creators of the model noted that "basic skills are frequently neglected by trainers once it is assumed that they have been achieved by teachers, so the pyramid shape is also a reminder that sometimes more basic levels will need to be re-visited, particularly if technology changes," (Hampel & Stickler, 2015, p. 5). This observation seems very prescient in the context of the pandemic, when new or a variety of platforms, short timelines, and differing needs for differing types of classes meant that the bottom three steps needed to be considered or reconsidered. It is also important to note that the first step of basic ICT competence, may regularly need to be revisited as time, technology and the expectations of learners, colleagues, management, and other stakeholders evolve (Hampel & Stickler, 2015), and, correspondingly, the conception of "basic" competencies is raised higher. The middle step of the pyramid is online socialization. Approaching the top of the pyramid model, the final steps are facilitating communicative competence, creativity and choice, and the language instructor's own style; three steps which language instructors in a traditional in-person classroom setting might feel come first.

Figure 3
The Skills Pyramid

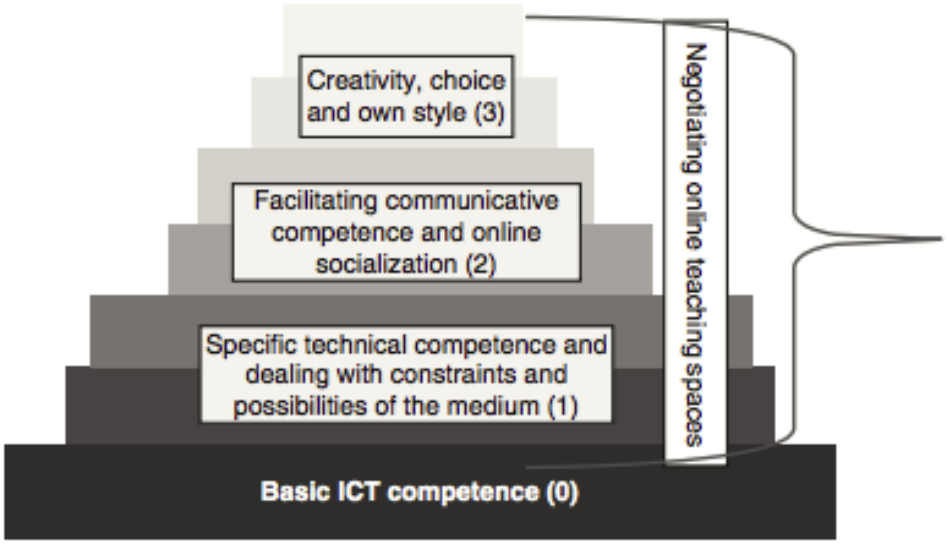


(Hampel and Stickler, 2015, p. 5)

The Hampel and Stickler pyramid as depicted above was designed specifically for online language instructors and emphasizes how one skill can lead to the next. However, it has also been argued that the "skills can be developed concurrently and do not necessarily have to come in the order implied in the pyramid" (Compton, 2009, p. 80). For example, the pyramid model outlines four steps that must be considered before a language instructor can begin with the "real" work of facilitating communicative competence. As well, the developers of the model came to recognize that it may be necessary to return back to a previous step as circumstances change. To incorporate the reality that "technology and

pedagogy in online teaching and learning environments intersect in complex ways" (Stickler et al., 2020, p. 138), its developers revised the pyramid as an iterative model as illustrated below.

Figure 4
The Skills Pyramid, adapted



(Hampel and Stickler, 2015, p. 66)

As shown above, the adapted version of the pyramid keeps the same form but collapses several steps into each other so that seven original steps are streamlined into four. The first step, now numbered as zero (0) remains the same: Basic ICT competence, with the understanding that what is considered basic will complexify as technology continues to advance. The former steps two and three are labelled as step (1): Specific technical competence and dealing with constraints and possibilities of the medium. Moving away

from the technical skills and into the top four creative pedagogical skills, what was originally steps four and five are labelled as step (2): Facilitating communicative competence and online socialization, which includes "creating a sense of community" (Stickler et al., 2020, p.139). Finally, the former steps six and seven are combined as step (3): creativity, style, and own choice, which "includes the teachers' development of their own personal teaching style, exploiting the media and materials to form rapport with their students and to facilitate active and communicative language learning" (Stickler et al., 2020, 0. 139). Unique to this adapted version of the pyramid is a bracket that partially starts in step (0) and fully encloses all of the other steps, with a vertical label: Negotiating online teaching spaces. This label helps to comprehend how the pyramid moves from the general or common skills to the more specific and individualized skills.

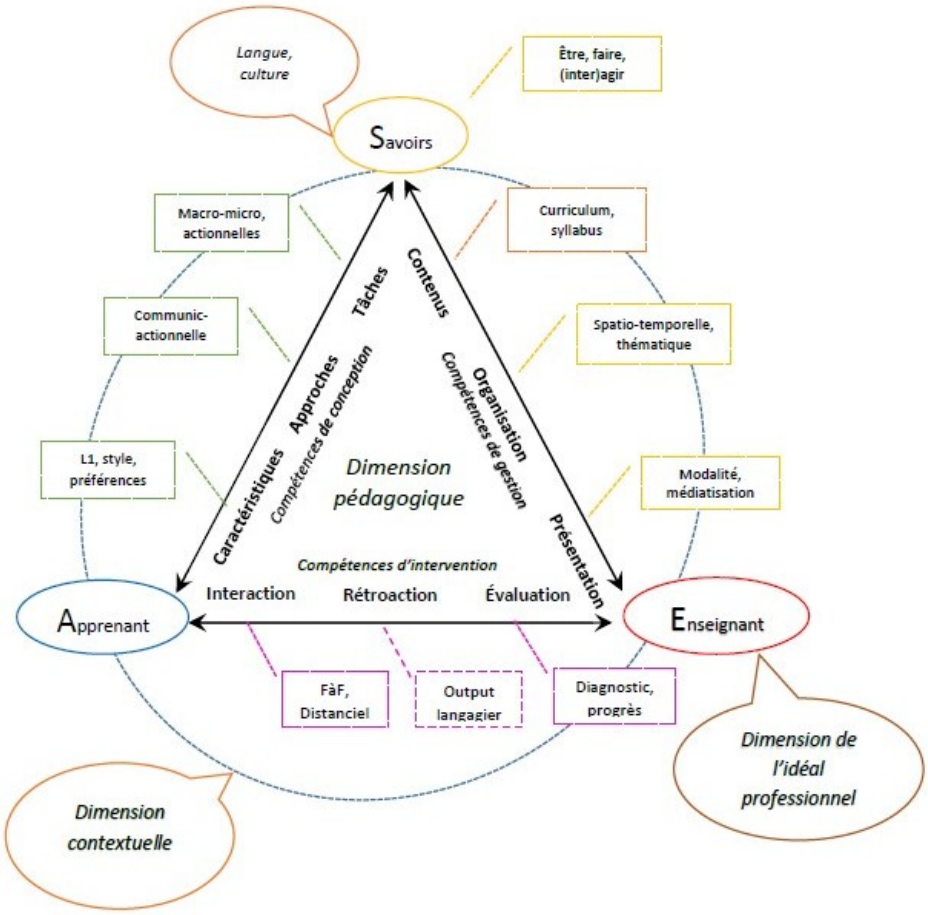
2.3.5 Model of the pedagogical dimension of teaching for a hybrid course (Hamel's Model)

Another model that we will consider also focusses on language instructors but goes further to capture the complexity of the features that interplay for hybrid courses. Hybrid courses can be considered in a distinct category of planned online learning because they must include the differing skills and competencies required for both in-person and online classes (Hamel, 2017, par. 2).

The following model for hybrid classes was proposed from a study at the University of Ottawa which created portraits of French as a second language instructors who were creating and then delivering hybrid language classes. The model, created from data collected through questionnaires and semi-directed interviews at different points in the process,

'incorporates … the technological skills from Hampel and Stickler,' but is centred on "the importance given to the declared and professed practices of teachers" (Hamel, 2017, par. 63). Thus, this model better represents the complex reality of the experience of online teaching, which, besides the necessary technical skills, requires instructors to adjust their time, space, tasks, and tools to the exigencies of the online world. As it goes beyond the uptake of technology in the language classroom, it actually captures the even more challenging situation of a hybrid language instructor, who must plan, teach, set up activities, and provide feedback for students in both the online and the physical classroom, at the same time.

Figure 5
Model of the pedagogical dimension of teaching mixed modality language courses



(Hamel, 2017, par. 63)

The model juxtaposes a contextual dimension, represented as a circle, and pedagogical dimension, depicted as a triangle. The two dimensions intersect at the three axis points, which are labelled for the teacher, learner, and knowledge. The model shows knowledge which encompasses, on one side, linguistic and cultural knowledge, and on the other side, encompasses being, making, acting, and interacting (Hamel, 2017, par. 64). Around the circle, the three curved lines connecting the three axis points represent the contextual dimension, and these are linked to the corresponding lines of the triangle in the pedagogical dimension. Pedagogically, teacher and learner are linked by three components

of intervention: interaction (with the context of in-person or online), feedback (with the context of the language output), and evaluation (with the context of diagnostic and summative). The line between learner and knowledge is pedagogical design: the teacher's knowledge of the learners' characteristics (their L1s, their learning style, and their learning preferences), the pedagogical approaches (communicative and interactional), and the specific language tasks (at a micro and macro level). The line from teacher to knowledge displays the teacher's management skills, taking into account the course content (including the curriculum and syllabus), the organization of the class (in time and space, as well as thematically) which can include the use of hybrid features, and presentation (synchronous, asynchronous, and other modalities) (Hamel, 2017, par. 65). Furthermore, this model includes the language instructor's own concept of his or her professional ideal, which includes

> *la perception de l'enseignant des compétences et des qualités requises : ce qu'il est et connait, veut être et veut connaitre, les savoirs "comment être" et "comment faire". En tant que pédagogue de l'hybride, il accepte et réévalue constamment cette rupture entre le connu et l'inconnu* (Hamel, 2017, par. 66)[1].

This model captures the breadth and complexity of the factors that must be considered for an instructor to plan and teach an online class. It also illustrates how, by a change in one factor, such as the students' L1, an instructor may then need to adjust other factors of a course. This model and concept of professional development comes from the framework of professional didactics (Pastré, 1999), which will be considered in more detail in section 4.1 on Theoretical Framework.

[1] French will not be translated in this thesis.

2.3.6 Summary of models

We have briefly considered seven models related to the adoption of technology. The Diffusion of Innovation theory shows the rate of the adoption of technology into any profession. For the four models specific to teaching, SAMR focusses on four layers of integration, TPACK focusses on the relationship between four elements, UTAUT on the rate of acceptance, and TAM on the usefulness of technology. The Hampel and Stickler skills pyramid (2015) is specifically for the language classroom and includes negotiating online teaching spaces. The Hamel model (2017) is for multi-modal language teaching and considers the possibility of using technology to deliver a course entirely online.

3. Empirical studies on language instructors' online competencies

Both prior to and during the pandemic, many studies have been published from the point of view of students' experiences with technology and online learning. In relation to this, there is a smaller collection available of studies regarding language instructors' online competencies and professional development, which have also been ongoing by researchers around the world. Examining some of these studies provides a useful foundation to understand the issues and trends affecting digital competencies which, in order to keep pace with constantly emerging technologies, must continuously evolve. For the sake of comparison, we will go back in time and examine five pre-pandemic studies, followed by seven studies conducted during the pandemic. We will take mid-December 2021 as our cut-off point for studies to include in our review for the purposes of this thesis.

3.1 Pre-pandemic

3.1.1 Overview

In the following sections we will consider five studies. These studies were selected because of their specific focus on the use of technology by language instructors from Europe to Canada, starting from 2008 and covering intervals over the decade preceding the Covid-19 pandemic. The studies chosen for this review capture the experiences of more than 3,000 instructors regarding different aspects of technology, such as their attitudes and practices towards hybrid language courses, digital resources, and didactic postures, as well as their technological competencies and professional development. This combined research provides a useful starting point for considering many common scenarios pertaining to language instructors prior to the pandemic, at which point they needed to cope with a switch to

emergency remote teaching, possibly transform their professional development and techno-pedagogical practices, and potentially adjust their self-perceptions as language instructors. The studies are presented chronologically in the order that they were carried out, which helps us to see any evolution regarding the use of technology in the language classroom.

3.1.2 2008-2013: Europe

For nearly a decade prior to the beginning of the pandemic, researchers in Europe found that there was "still a need for teacher training in CALL" (Hampel & Stickler, p. 5). The purpose of their research was two-fold: to determine teachers' professional views on the use of computer technology in the classroom as well as on language teaching and learning. A series of three studies were organized by Developing Online Teaching Skills, or DOTS, in conjunction with 20 in-person teacher training workshops organized by the European Centre for Modern Languages (ECML) across Europe. The data was gathered by questionnaires conducted with language teachers and language teacher trainees in the years 2008, 2011, and 2013 (Germain-Rutherford & Ernest, 2015, p. 15). The questionnaires repeated, modified, and clarified the research questions over the years. In total, there were over three hundred workshop participants who were invited to participate in the research over the five years of the study. In 2008, the first twelve participants were asked about their 'prior knowledge of and experience with ICT used in the language classroom, objectives in relation to the use of ICT in [their] teaching practice, and their previous experience of teacher training and current needs' (Op. cit.). At that time, the majority of language instructors (84-96%, respectively) indicated that they were experienced with using PowerPoint presentations, electronic dictionaries, and the internet for TV and radio shows in their classrooms (Germain-

Rutherford & Ernest, 2015, pp. 15, 16). When rating a list of objectives, the options that were most highly rated (88-96%, respectively) by language instructors for incorporating new technology in the classroom were to "help students to communicate and use the language they have learned in real contexts, outside and inside the classroom, by offering more diverse and authentic learning resources and tasks" (Germain-Rutherford & Ernest, 2015, p. 17). Just over half of the participants had received formal training in using technology in the classroom, either through their institutions or through another organization (Germain-Rutherford & Ernest, 2015, p. 18). A major result of this initial survey was realization that, "given the rapid changes which occur in relation to the design and range of ICT tools available, it was clear that the data obtained in 2008 … would need to be regularly updated with the help of new surveys which would reflect the changes both in technologies and in the professional practice of language teachers" (Germain-Rutherford & Ernest, 2015, p. 15).

For that reason, the follow-up surveys conducted in 2011 and 2013 added a second set of questions to the ones considered above. More specifically, these precisions served to ascertain three points: First, the instructors' "professional views on the use of computer technology in the classroom; their professional views on language teaching and learning [, and] their individual professional development as a teacher" (Germain-Rutherford & Ernest, 2015, p. 19). To collect this information, more than 300 participants, of whom 14% were language instructors in universities, were given a list of statements to which they could indicate their agreement and, in addition, write in detailed responses (Germain-Rutherford & Ernest, 2015, p. 19). The statements related to the use of technology concerned its integration, rather than delivering a course entirely online. At that time, the majority of respondents agreed that technology is a "valuable instructional tool (93%), helped promote

the development of communication skills (89%), and increased academic achievement (77%)" (Germain-Rutherford & Ernest, 2015, p. 20). Ninety percent agreed that the use of technology in the language classroom "is successful only if there is adequate teacher training in the use of technology for learning" (Germain-Rutherford & Ernest, 2015, p. 20). In the section regarding professional attitudes to language teaching and learning, the vast majority of participants (86%) also agreed with the statement that "tasks and activities should be negotiated and adapted to suit the learners' needs rather than imposed on them" (Germain-Rutherford & Ernest, 2015, p. 20).

As an outcome of the nearly ten years of this research, seven generic teacher profiles were created with regard to the use of technology in the classroom (Germain-Rutherford & Ernest, 2015, p. 23). The seven profiles, named from A for Anne at the bottom to G for George at the top go up a scale to describe a "range of expertise from the most sceptical and unconfident to the most confident, skilled ICT user and language education expert" (Germain-Rutherford & Ernest, 2015, p. 23). Later, these profiles were used in workshops for instructors to engage in self-reflection. The three profiles that participants identified with the most were as follows:

Table 1
Teacher profiles of ICT use in the language classroom

Generic name (from A to G)	**Description**
"Bogdan"	Loves teaching but is not confident enough to use computers in class.
"Dennis"	Expert in everything – ICT, language teaching, etc.

“Fatima”	Feels she does not have enough time but would like to try out ICT.

(Germain-Rutherford & Ernest, 2015, p. 23)

Another outcome of the ten years of research was that Hampel and Stickler created, and then updated, the seven-step pyramid models that were described above in Section 2.3.4. Over the research period, the data collected showed a tendency for language instructors to gradually incorporate new technology into the classroom only in the circumstances when instructors felt it was conducive to their goals for learners’ outcomes. This resulted in a relatively slow uptake, which was attributed to the feeling of language instructors that technology could be a complementary aid but was not crucial to their learners’ success with a new language. Over the decade of the study, rather than engaging in new practices, the data revealed that “many teachers still use the technology in predominantly ‘old’ ways, adapting new tools to their traditional teaching style rather than acquiring new skills to use the pedagogical affordances of the tools” (Hampel & Stickler, 2015, p. 65). The research of Hampel and Stickler identified attitudes and trends to using technology in the language classroom pre-pandemic. The purpose of the initial survey in 2008 was “to understand which ICT tools participants were using ... and their needs as regards training and experience with further tools” (Germain-Rutherford & Ernest, 2015, p. 25). The follow-on studies focussed on “reflecting the changes in technologies available, and ... [how] this has affected language teachers’ professional practice” (Germain-Rutherford & Ernest, 2015, p. 25). In concluding the analysis, researchers identified "the need for high quality, appropriate and ongoing forms of training …, not simply to guarantee technical competence in using new tools,” but also to

take pedagogy into account and to help teachers to build their confidence in using more technology (Germain-Rutherford & Ernest, 2015, p. 25).

3.1.3 2015-2016: Canada

In Canada, a two-year action research study was conducted at the Official Languages and Bilingualism Institute at the University of Ottawa. This study focussed on language instructors' beliefs about language teaching and contrasted those with their attitudes to and use of practices to design, manage and deliver hybrid language courses. As well, the study looked at how the language instructors saw their social role, values, skills, and professional representations in their interactions (Hamel, 2017). The initial study consisted of a questionnaire with 25 closed questions, followed by semi-directed interviews with sixteen questions, which were analysed thematically. The initial study was conducted with 27 student participants in 2011 and 2013 (Lecoin & Hamel, 2014). The data inspired a qualitative study of three participants using a theoretical framework of cognitive ergonomics and professional didactics, and the creation of portraits of three French language instructors and their attitudes toward and use of technology as they prepared to teach hybrid language classes at the university level (Hamel, 2017). The instructors in the three portraits were mapped to the pyramid model of Hampel and Sticker, which was considered in Section 2.3.4. The three instructors were described as being at different levels of technological competency according to the seven steps of the pyramid, ranging from Level 3, "basic competence" in the middle of the pyramid up to Level 7, "own style" at the top (Hamel, 2017). However, all three instructors were found to be 'committed to innovation, … not afraid of risk and renewal of their practice. Collaboration with peers ... seems to be a key element of their success. Pedagogy is put forward, while technology remains at its service' (Hamel, 2017, par. 71). This research also led to the proposed model of pedagogical self-training for language instructors who wished to incorporate more technology in the

classroom in the future (Hamel, 2017) that was considered in Section 2.3.5 above.

3.1.4 2017: USA

The third pre-pandemic study that will be reviewed here sought to map Rogers' Diffusion of Innovations Theory, which was considered in Section 2.3.1, to teacher technology education literature in order to provide a new and specific model for professional development in CALL. The research was anchored in three previous studies which had found that language instructors' use of an innovation, in this case technology specific for CALL, was linked to their "knowledge about the existence of the innovation, ... favorable attitude toward it, engage[ment] in activity to decide to adopt the innovation, use [of] the innovation, and confirm[ed] ... usefulness of the innovation to student learning" (El Shaban & Egbert, 2018, p. 236). The literature review identified the "need for professional development offered on a regular basis, ... [as well as] encouraging teachers to develop and participate in [professional learning] communities of practice" (El Shaban & Egbert, 2018, p. 236). The research based on the workshops led to the recommendation that "language teacher professional development [helps] language teachers develop positive attitudes toward using technology" (El Shaban & Egbert, 2018, p. 237). As the study's authors concluded, "education technology adoption is not as likely to occur without expert and administrative support" (El Shaban & Egbert, 2018, p. 242). This conclusion was echoed in later research using the Diffusion of Innovation theory in Canada, which found that "an innovation cannot be sustainable if there is minimal support from leadership or faculty collaboration in higher education" (Spiliotopoulos et al., 2022, p. 12). In addition, the pre-pandemic study found that "teachers should be offered as much time and support as they

need to learn and practice at their own pace" (El Shaban & Egbert, 2018, p. 236). Looking at formal professional development opportunities, they said that "professional development facilitators should be aware of teachers' backgrounds, needs, and abilities; this can help facilitators support an increase in teacher knowledge and skills and scaffold the transfer of this new information into instructional practice" (El & Shaban & Egbert, 2018, p. 237).

The researchers created five guidelines: "contextualization; integration of pedagogical, technological, and content knowledge; providing support for interaction around technology; addressing teachers' confidence levels; [and] treating teachers as competent" (El Shaban & Egbert, 2018, p. 236) and a model. For "A Model for CALL Teacher Professional Development," they began with a needs assessment followed by three questions: Why? (Persuasion), What? (General Knowledge), and How? (Practice and Implementation of Specific Technologies), and the heading Technology Integration Enabling Environment, divided into Opportunities for Communication and Collaboration, and Administrative Support. (El Shaban & Egbert, 2018, p. 237). That model was "implemented over a semester, with four formal professional development workshops" of two hours each (El Shaban & Egbert, 2018, p. 239). The facilitator of the workshops was also a language instructor who taught on site as a colleague of the participants over the four-month period. In that time, language instructors expressed some of their attitudes informally, such as the three below:

> "It is not important to me whether technology is implemented in the classroom or not, but whether the students have the ability to learn from my teaching method, whatever that may be;"
>
> "There have been effective teachers before technology was ever invented;"
>
> "If I had difficulty using [new technologies] then I would have a tendency not to use

> them. So it would be something that I have to learn very quickly and use very easily in the classroom" (El Shaban & Egbert, 2018, pp. 241, 242).

These attitudes to the use of technology in the language classroom in the time period just preceding the pandemic help us to understand the starting point of many instructors when ERT forced them to move their classes online.

3.1.5 2018: Francophonie

In 2018, the *Observatoire de la langue française* conducted a large-scale survey regarding the use of digital online tools in learning and teaching French as an additional language. The aim of the study was threefold: to create an inventory of the digital resources and practices in use at the time; to analyse trends related to innovation, user behaviours and learning environments; and to create a classification system of digital resources and environments related to teaching and learning French online (Observatoire, 2018). Data was collected by questionnaire, to which 2,445 French language instructors responded (Observatoire, 2018). In this case, the answers to 17 questions were synthesized to create one "typical" profile of a French language instructor with a focus on technological competencies and related professional development. Following are the highlights of a detailed portrait of an "average" French language instructor at that time, three years before the move to ERT:

1. Taught French in a secondary school or higher to A1 - B1 (CEFR) learners
2. Had more than 10 years of experience teaching French
3. Had attended one or more digital training courses
4. Searched for authentic media online (with or without pedagogical support)
5. Used digital technology to research, prepare, distribute, and store course materials in class
6. Used online resources to teach French
7. Had a classroom with a computer and a video projector, but did not have IT support

in the [educational] building
8. Occasionally gave learners tasks to do with their smartphones
9. Would have liked more training in the use of digital resources
10. Would have liked access to more authentic audio-visual media (Observatoire, 2018, pp. 26, 27).

This profile of a "typical" pre-pandemic French language instructor reveals experienced professionals invested in ongoing development related to their own technological competencies. Although respondents came from 128 countries, the report noted that the study, which was distributed online, favoured those who were already digitally connected: "*L'étude ne reflète donc pas la diversité des situations sur le terrain et tous les contextes d'enseignement et d'apprentissage du français langue étrangère*" (Observatoire, 2018, p. 16). These respondents showed an ability to incorporate wide-ranging digital tools into their classes, from authentic materials to student smartphones. However, the instructors were not, for the most part, teaching online and "negotiating online teaching spaces" (Hampel & Stickler, 2015). And once, again, the need for more professional development was highlighted.

3.1.6 2019: Canada and France

The 2015-16 study from the University of Ottawa that was considered in Section 3.1.3 was followed up in Caws et al. to find the digital resources that are part of the personal and professional environment of language instructors, their perception thereof and digital practices, as well as their didactic posture related to digital technology (2021). This was done with a large-scale survey (n=100) that was distributed online to language instructors from January to May 2019. The survey, in French, consisted of 85 questions, including ten open-ended questions. As a framework, the study used the model developed from the case

studies above (Hamel, 2017), and focussed on the 'three main types of techno-pedagogical skills in a digital context: design, management, and intervention' (Caws et al., 2021). The majority of the respondents were female, from Canada or France, between the ages of 41-60, with more than 16 years' teaching experience, having a master's degree or higher, teaching the French language, and with regular personal use of technology. For the French males who answered in approximately the same age range (41-50), the majority rated themselves as having above average skills. In sum, all instructors reported using technology in their language classrooms for 13 years, with 64% saying they were 'increasingly integrating digital technology into their language course,' and slightly less than half (48%) rating the place of digital technology in the classroom as important or very important (Caws et al., 2021).

At that time, a year before the pandemic and the move to ERT, more than half of the participants had never taught in a remote or hybrid format (63% and 58%, respectively) (Caws et al., 2021). The majority of digital tools that instructors reported using in their classrooms were word processing software, presentation slides, LMSs, emails, and authentic materials such as websites and recorded videos. Exactly half of the instructors (50%) believed that 'online interactions promote little or no social or socio-emotional interactions in their language lessons' (Caws et al., 2021); this is a contrast with the pre-pandemic European study in which 89% of respondents felt that technology "helped promote the development of communication skills" (Germain-Rutherford & Ernest, 2015, p. 20). In 2019, instructors reported using digital tools for diagnostic and formative assessments, especially in writing, projects, and oral productions. Approximately a third of instructors used digital tools to provide feedback. Regarding this, they expressed a range of feelings,

from the idea of technology that it "*facilite l'accès au sens ; permet de mettre en contexte ; aide à ryth mer/dynamiser le cours*" (Caws et al., 2021, p. 22) to "*cela rend le travail d'enseignant plus difficile : on doit mettre à jour ses ressources plus régulièrement. On doit s'adapter sans cesse aux nouveaux outils*" (Caws et al., 2021, p. 23). The survey also found that a majority of the instructors (two-thirds) mostly used conferences for their professional development regarding digital competencies related to their work, while approximately the same number were self-taught or used informal opportunities to improve their digital skills for personal use (Caws et al., 2021, p. 24). Less than a third had learned digital skills related to language teaching as trainees (Caws et al., 2021, p. 24), which was no doubt related to the time period in which they had their initial teaching training.

This large-scale pre-pandemic study showed a trend of French language instructors increasingly incorporating technology into their classrooms for a variety of purposes and using a variety of tools. However, at that time, the majority had still not taught in a remote or hybrid environment, most likely because these types of classes were not offered by their institutions, or they were not asked to teach them, pre-pandemic. Perhaps most importantly, the study highlighted that instruction management and conception skills were stronger than pedagogical invention competencies, which the instructors lacked, particularly synchronous interaction skills.

3.1.7 Summary of pre-pandemic studies

The pre-pandemic studies considered above focussed specifically on language instructors' professional practices regarding using technology in the classroom. With thousands of respondents or participants across Europe and North America in the decade or

so preceding the pandemic, the research shows a gradual trend towards incorporating more technology in the physical language classroom, and less experience in online classrooms. In three cases, models were proposed or modified (Hampel & Stickler, 2015; Hamel, 2017; El Shaban & Egbert, 2018) to describe the processes of instructors incorporating technology. As well, three studies (Germain-Rutherford & Ernst, 2015; Hamel, 2017; Observatoire, 2018) used generic profiles or individual case studies to describe experiences and attitudes that were representative of the data. Taken together, this shows that most language instructors were experienced in their profession and open to gradually adopting more technology in their classes. The speed of adoption was not necessarily due to a hesitancy or a reluctance to use technology, but rather to a combination of the institutional context as mentioned earlier, along with the desire to keep the focus on the learners and the specificities of language instruction, going beyond grammar, vocabulary, and pronunciation to include the social aspects of language learning, writing, and feedback, as well as the wish for more professional development on how to incorporate technology. Professional development was usually accessed in a top-down format through sessions that were formally organized at their institutions; the need for more and continuous professional development was consistently emphasized. In the studies in this review, there was little or no weight given to other forms of professional development, such as what the instructors did themselves at or for work (Mayen, 2015). Despite the general willingness of language instructors in the studies to participate in formal professional development sessions in order to use more technology in the language classroom, most had not taught in an online or hybrid, synchronous or asynchronous format by the time the pandemic forced the move to ERT.

3.2 Pandemic Studies

3.2.1 Overview

The move to ERT has provided a unique opportunity to see how the pre-pandemic trends regarding the use of technology in the language classroom and professional development with that focus developed on an accelerated timeline and over the course of the pandemic. At the time of this writing, the literature is continuing to emerge from the first 18 months with Covid-19. Studies of this period sometimes consider the realities of ERT that impacted on the transition to online teaching, especially in the early days of the pandemic. One article, published in the summer of 2020 (Openo), highlighted the lack of time and preparation that were common to instructors regardless of the subjects they taught, and the resulting adjustment strategies that they employed. Referring to studies from the previous twenty years, it was observed that

> For advocates who have worked in online education for any length of time, the emergency shift to remote instruction reinforced what we knew all along; developing high-quality online instruction takes time, effort, and planning, which the pandemic did not allow (Openo, 2020, p.2).

The author quoted above summarized the "biggest challenges that face online instruction are interactivity, authenticity, and support" (Openo, 2020, p.1), and that those three issues have been long standing challenges in online learning. As a result, it was not surprising that the need for ERT at the beginning of the pandemic identified those same three main issues (Openo, 2020). The consequence was felt to be that "despite the tremendous efforts put forward by faculty to keep teaching throughout the pandemic and implement best practices to ensure students do not suffer an inferior education, the hurried

move to online education during the pandemic period is low-end e-learning" (Openo, 2020, p. 2). However, the article did not go into detail about what those efforts were, how instructors were able to shift to online teaching, or what effective practices could be extracted from the experience.

In the following sections, we will consider seven studies that were conducted by the end of 2021. Two of them have been conducted internationally since the beginning of the pandemic, including one that focussed specifically on language instructors, as well as studies centred in particular geographic regions regarding the adaptation of instructors to ERT. Five of the studies were large-scale questionnaires, and the two others were based on smaller groups of participants in interviews. Taken as a whole, the studies included more than five thousand instructors. The seven studies will be considered in detail in the following subsections. They are ordered chronologically as experiences may have changed from the initial switch to ERT as the pandemic continued.

3.2.2 Spring 2020: China, International, and Belgium

The first study from Spring 2020 came from China (Gao & Zhang, 2020). The study was conducted at the end of March 2020; however, the instructors had already moved to ERT in January 2020 due to the outbreak of Covid-19 in China during their December 2019 school holidays. In the context of the pandemic, the experience of instructors in China is of special interest since the country's Ministry of Education, in 2016, formally outlined a five-year plan for the "integration and development of technology and education, creation of a good environment of informationalized education, and upgrading of teaching concepts, modes and content to train talents for the information age" (Gao & Zhang, 2020, p. 4).

There, researchers followed up a large-scale study by creating portraits of three instructors of English as a foreign language in a qualitative research study. The focus of the interviews was how the instructors acquired the necessary knowledge and understanding for ERT through the experience of teaching. The study used the TPACK model, which was mentioned in Section 2.3.3 above, as the framework to describe the "relationships and interactions between teachers' knowledge, pedagogy, and the subject matter" (Gao & Zhang, 2020, p. 4). The three participants in the study, all English language instructors in the same university were identified as having "educational backgrounds and teaching experiences [that] varied substantially" (Gao & Zhang, 2020, p. 5).

The analysis was based on an understanding of the concept of language teacher cognition which identifies three main influences: "schooling, professional coursework, and contextual factors (classroom practice) [as defined by Borg]" (Gao & Zhang, 2020, p. 2). Of the three instructors interviewed, one felt negatively towards ERT due to its very nature of reliance on technology, which affected the instructor's self-perception as "the role of teacher changed from the traditional knowledge imparter and the classroom activity organizer to the resource integrator and the supervisor for students' autonomous learning in online teaching mode." That participant also noted her own perceived "lack of proper information technology literacy for online teaching" (Gao & Zhang, 2020, p. 8). The other two instructors felt more positively overall. One of the instructors detailed three positive aspects of being online as having "quality resources for teaching and learning, ... more objective records, ...[and] more forms of teacher student interactions" (Gao & Zhang, 2020, p. 7). All three instructors reported that they developed digital competencies during this period by doing "a lot of autonomous learning and exploration of relevant elements and technological

skills" (Gao & Zhang, 2020, p. 9). They described using a variety of digital platforms, tools, and resources which are uniquely available in China and suitable for large language classes —one had 69 learners —where roll call must be taken in exam-focussed programs. In a listening class, for example, the instructor organized the activities as in a traditional classroom, but then had the learners upload the notes that they had taken while listening so that she could understand their listening process and offer feedback. Another instructor used the voice-over feature of PowerPoint slides, but added pauses, imaginary questions from learners, and answers to those questions within her recorded presentations. The researchers concluded that the instructors "acquired their ICT literacy through their clear understanding of students' learning needs, ... facilitated by online teaching practice and integrating traditional classroom teaching" as presented in the TPACK model (Gao & Zhang, 2020, p. 12). Through these three case studies, the authors showed how their participants coped with the transition to ERT, how it was a transformative experience, and the digital competencies and literacies that the three instructors developed. The interviews did not consider the aspects of online teaching that instructors would wish to retain after returning to an in-person classroom teaching environment.

In April 2020, the worldwide shift to ERT was considered in a study that focussed on language instructors' stressors and coping strategies. In designing the study, the researchers accounted for the blurring of work and home life and the overarching uncertainty of the early days of the pandemic. The survey was available via Google Form and the link was shared by social media over a two-week period. More than six hundred language instructors around the world responded (MacIntyre et al., 2020, p. 1). Three-quarters of the participants taught English, 80% were female, just over half (51%) were in Europe, and a third taught in

post-secondary organizations (MacIntyre et al., 2020). In the immediate switch to ERT, almost half the respondents (*n*= 316) had from one to three days to "convert their courses from online to remote" (MacIntyre et al., 2020, p. 6). The two main questions asked participants to rate 15 stressors and 15 coping strategies, with space to write in comments. The results showed that instructors were faced with teaching without resources as part of "emergency online homeschooling" (MacIntyre et al., 2020, p. 2). As well, language instructors revealed a wide variety of coping mechanisms, such as, such as acceptance, advance-planning, "actively doing something about the situation, and using other activity as a distraction. All of these are considered approach coping strategies" (MacIntyre et al., 2020, p. 7) used during this time. The researchers found that planning had a positive correlation to increased stress factors such as workload, family health, loss of control at work (Op. cit.), and a negative correlation to well-being, so they concluded that flexibility was the best skill to have (MacIntyre et al., 2020). While the study did not focus specifically on instructor's technological skills, the authors highlighted that "in most cases, teachers have not been trained in the necessary technological and pedagogical skills to integrate digital technology instruction" (MacIntyre et al., 2020, p. 2). Noting the transformative effect of the forced professionalisation early in the pandemic, one observation was that:

> ongoing changes in language pedagogy, including but not limited to the expanded use of online learning in place of face-to-face instruction, have been accelerated by the Covid-19 pandemic. It is important to study how these trends play out in the longer term both for language teacher stress and wellbeing (MacIntyre et al., 2020, p. 11).

The need for research to study the development of long-term trends was one of the conclusions of this study from the very beginning of the pandemic and ERT. MacIntyre led a follow up with another study later that year to compare language instructors' stressors and

coping strategies (MacIntyre et al., 2022). With 245 participants, nearly 7% of whom came from Canada, the study found that stressors increased related to concerns about the Covid-19 virus and its variants, travel restrictions, and the "stress related to online teaching ...declined but did not disappear" (Op. cit., p. 18), and coping strategies decreased as the pandemic went on. The concept of hope was used in this study "as a key resource that can strengthen teacher well-being at a time when stress remains high, but the use of coping strategies might be expected to decline" (MacIntyre et al, 2022, p. 5). The results demonstrated a positive correlation between hopefulness and approach coping. This correlation "further clarifies that hopeful teachers are moving toward greater use of strategies that address the problems directly, such as increased planning, reframing the problem, and asking for assistance" (MacIntyre et al, 2022, p. 19).

A third study from the same time period of early ERT addresses some of the same concepts as the research questions in this thesis. In Belgium, more than 300 language teachers from primary and secondary schools were surveyed in May 2020, of whom 40% had not used digital technology in the classroom prior to the ERT context (Delforge et al., 2022, par. 71). The researchers found that "*les usages pédagogiques du numérique ont été nombreux et variés durant la période étudiée*" (Delforge et al., 2022, par. 72), and classes saw "*la création multimédia par les élèves, l'utilisation de supports authentiques en langue cible, la mise à disposition d'exercices avec rétroactions automatiques, le suivi individualisé par l'enseignant, etc*" (Delforge et al., 2022, par. 72). The use of digital tools and tasks was linked to the digital skills of the instructors, with instructors who were more comfortable with technology using more complex tools and tasks, and found that "*enseigner l'oral en ligne implique l'acquisition d'un ensemble de compétences spécifiques liées au mode*

d'interaction en ligne, aux affordances de l'outil utilisé et à la construction d'une présence dans un contexte à distance," which some instructors were successfully able to do (Delforge et al., 2022, par. 73). The Belgium study highlighted that "*l'un des problèmes majeurs rencontrés par les enseignants interrogés fut de choisir l'outil répondant à leurs propres besoins, dont la présence à travers l'écran*" (Delforge et al., 2022, par. 75), as well as the fact that not all of the instructors started the ERT period with the same level of digital competence. By analysing the feelings expressed by the instructors, the study's authors also concluded that "*un manque de formation peut amener un sentiment d'incompétence numérique chez les enseignants*." and that the students learn best through technology when the instructors have been trained (Delforge et al., 2022, par. 79).

3.2.3 Summer 2020: USA

In July 2020, researchers in the United States wanted to discover if prior online teaching experience had made the transition to ERT easier. To do this, they opened a questionnaire to language teachers via social media. The researchers wanted to determine how "language educators describe their practices and perceptions related to planned online courses and emergency remote classes [and…whether] language educators have significantly different practices and perceptions of remote instruction with regard to: (a) prior online teaching experience; or (b) classroom setting (PreK-12 v post-secondary)" (Moser et al., 2021, p. 5). The survey included yes/no and Likert scale questions regarding teachers' attitudes toward online learning, student performance, and whether "online language teaching would entail more work" (Moser et al., 2021, p. 5). Of 377 respondents, approximately 25% taught at the university level (Moser et al., 2021, pp. 5, 6). One-third of

the respondents taught Spanish, and nearly 15% taught French; however, the reported data does not map the distribution of these language instructors at the post-secondary level. The data found that, prior to the pandemic, a minority of language instructors had online teaching experience; those who did "generally relied on principles of design that support learning" (Moser et al, 2021, p. 6), but during the initial ERT period, most likely due to the time constraints, they were "generally less inclined to adhere to such principles" (Moser et al., 2021, p. 6). These language instructors with prior online teaching experience reported their ERT courses as being "less detailed, … less supported by LMSs, … reaching out to students more frequently, ...[and] including more opportunities for their students to interact with one another synchronously" (Moser et al., 2021, p. 7). Overall, the language instructors who voluntarily completed the questionnaire were "'comfortable' with various technological tools and, … remote instruction did not result in significant adjustments to their courses" (Moser et al., 2021, p. 9). In contrast, "educators without prior online teaching experience were less confident about their students' learning" (Moser et al., 2021, p. 9). Although this study did not focus directly on the changes to instructors' online practices, the authors suggested that "additional training in technology and online teaching methods may help educators to prepare for the eventuality of remote teaching" and that "this study underscored the intersection of online instruction, remote teaching, and trauma" (Moser et al., 2021, p. 12). Despite the differences between the two teaching contexts, the study's findings showed that instructors with previous experience in online training were able to cope more easily with the change to ERT.

3.2.4 Winter 2021: Europe

In February 2021, the European Centre for Modern Languages (ECML) conducted a large-scale international study on "The future of language education in the light of Covid - Lessons learned and ways forward." The survey took, on average, 30 minutes to complete as it included qualitative questions. There were 1,735 responses which were received from all over the world. Eighty-two percent of respondents had 10 years' teaching experience. More than 4,150 comments were received, including approximately 600 comments for the question on "important lessons learned" (ECML, 2021). The ECML has expressed the goal of taking all the comments received in the survey to create a corpus, which will be searchable by keywords. At the time of this writing, not enough data was made available to identify any generalized trends, but from the sample that was made available, the reflections on the specific questions "Lessons learnt about language teaching and learning during the pandemic" include a range of opinions from one side of the spectrum to the other. One instructor felt that "face-to-face interaction and real-classroom group dynamics cannot be substituted by any alternative form of distance teaching / learning. When distance learning is 'imposed,' regardless of the underlying reasons, the educational process becomes stressful, frustrating and impersonal" (ECML, 2021, p. 12). On the other hand, another language instructor expressed a positive experience and felt that

> 1) Teachers and learners can adapt to any environment when in need. 2) Technology is an integral part of our daily lives and of education as well. 3) When we learn to use the new methods of e-teaching, we have a great tool in our hands. Teaching can be motivating, interesting, pleasant, free of stress (ECML, 2021, p. 12).

During the pandemic, some language instructors identified that learners were "missing out on socialising" (ECML, 2021, p. 19) when compared with the ways that they could socialize during in person classes. Many other key areas of interest have been identified in this survey, under at least eight main umbrella headings, such as methods, assessment, use of resources, and use of technology (ECML, 2021, p. 11). Although the entire corpus is not yet publicly available, a preliminary search for the word "cope" reveals five comments from instructors, four of which are related to how the learners coped with ERT. The one comment to refer to language instructors themselves says to "Never trust the state to help teachers or students cope with difficulties in teaching or learning!" (ECML, 2021, p. 14). Specifically, regarding the use of technology, one instructor clearly delineated the affordances and limitations that were personally experienced as follows:

> The advantages for me as a teacher of distance learning are as follows: better use of technology and its abilities, a variety of reading and listening tasks, grammar and vocabulary activities which I couldn't have done/used in a real class without the use of class-internet or photocopied activities, no travelling expenses or time wasted going to school and coming back home. On the other hand, writing was less privileged in that I couldn't give students in-depth feedback but general comments, students felt a bit intimidated by the use of technology to write and send their written work, sometimes they just copied texts from the Internet, speaking was less privileged too despite the fact that students were less shy to talk about any topic in both their mother tongue and in the foreign language (ECML, 2021, p. 12).

The available comments that reference the specific use of technology during the early pandemic months of ERT similarly showcase a range of experiences, from positive: "we have learned how to use technology in the varied panorama that we are experiencing" (ECML, 2021, p. 13); to reserved: "technology opens up new opportunities but must not be overused" (ECML, 2021, p. 12); to the less enthusiastic: "technology has been very important to avoid complete isolation but not enough to reach the goal of learning a

language in a group class" (ECML, 2021, p. 14). The ECML has followed up with a corresponding survey to collect the learners' experiences, and they expect to publish their complete findings in 2023.

For now, they have published a nine-page leaflet entitled *Towards a Guide to Language Education in pandemic times and beyond*. The guide is directed to all decision-makers in language education, including administration and policy makers, and includes several strategies. For example, under "Rethinking our approach to teaching," one of the suggestions is "finding novel ways of engaging learners in interaction, including written interaction" (ECML, 2022, p. 3). They also recommend "selecting and adapting [technological] resources for online language learning" (ECML, 2022, p. 4), and suggest supporting teachers in the short and long term by "focuss[ing] on the further development in using relevant technology" (ECML, 2022, p. 8). The complete ECML corpus will be a rich resource to researchers once it is fully available.

3.2.5 Early ERT to Summer 2021: Quebec

The Canadian province of Quebec also conducted a major survey of instructors from elementary school to university, and published a report entitled "*Enseigner en contexte de pandémie: Résultats d'une enquête menée auprès des enseignantes et enseignants du primaire, du secondaire et de la formation générale aux adultes du Québec*." The survey aimed to determine the working experience and conditions of instructors of all subjects during the period from March 2020 to June 2021, from preschool to adult education in both the public and private sectors in English and French. In total, 2,443 instructors responded to a series of Likert-scale questions. Although the detailed results were not mapped to the

grades or levels taught by instructors, the summary included that 'the vast majority of instructors (79%) felt that they did not have the competencies to teach online;' however, that self-reported feeling was less pronounced from instructors of adults at higher levels and more pronounced with instructors of children at lower grade levels (Heilporn, 2021, p. 7). Seven out of ten instructors (71%) felt they did not get the support they needed to put their classes online for the pandemic (Heilporn, 2021, p. 8). At the same time, a similar number felt that they had discovered new modalities (73%) and innovations (77%) in their pedagogical practices, with the instructors of secondary school and adults reporting numbers even higher than the average (Heilporn, 2021, p. 9). Nearly all the instructors (95%) reported that this experience made them more familiar with digital tools, and again that number was even higher for instructors of secondary levels and higher (Op. cit.). This study is a valuable source of data as it collected personal information on the instructors' ages, employment status, personal lives; however, it does not specifically distinguish or focus on language or university instructors.

3.2.6 Spring 2021: Germany

Finally, in Germany, a study to examine the lessons learned from the pandemic used semi-structured interviews of 20 foreign language instructors in order to determine the most prevalent challenges and the most important competencies from the ERT period (Werner & Küplüce, 2021, p. 297). This was conducted in the Spring and early Summer of 2021, which was "shortly after schools in Germany were reopened" (Op. cit.). The top competencies identified were the "ability to integrate digital tools into language teaching. ... open-mindedness and frustration tolerance .... Other interdisciplinary skills that were highlighted

included the ability to organise and structure workload in ERT" (Werner & Küplüce, 2021, p. 299). Overall, the participants, who were using a combination of synchronous and asynchronous instruction, found that this arrangement was "beneficial for individualising learning since students could decide on their own how much time they would spend on tasks," and that some "individual students were more active in video-conferences than in [in-person] class[es]" (Op. cit.). The specific challenges that were identified included those related to the pandemic and ERT, as well as those that could be considered for planning for the future: "inconsistent organisation and social isolation. ... a lack of digital expertise, which resulted in an overwhelming workload, difficulties to engage students in speaking activities, and problems to provide students with feedback" (Werner & Küplüce, 2021, p. 300). While the study's authors recommended that digital literacy skills be considered for future language teacher training, the study did not consider the professionalization that instructors undertook on their own during the ERT period.

3.2.7 Summary of pandemic studies

The seven studies that were considered above were conducted over a 16-month period, from the beginning of the pandemic and the shift to ERT, January 2020 in China and March 2020 in the Western Hemisphere, until June of 2021. Two of the studies were open to language instructors around the world, although one of those had a focus on Europe. Two other studies focused on language instructors in the USA and China, respectively, while another was directed to all teachers, regardless of the subject, in the Canadian province of Quebec. Two other studies focussed on languages teachers in Europe, specifically in Belgium and Germany. Five of the studies considered were questionnaires which received

more than 5,000 responses; the other two were based on interviews. Taken as a whole, the studies considered different aspects of ERT, from stress and coping to instructors' cognition, working experience, prior online teaching experience, and lessons learned. They show that the pandemic "accelerated ongoing changes" that had been previously identified regarding integrating technology (MacIntyre et al., 2020, p. 11), rather than allowing instructors time to "learn and practice at their own pace" (El Shaban & Egbert, 2018, p. 236). Language instructors continued to prioritize their learners' needs, but although there was still some hesitancy, they used digital tools more quickly. Differently from pre-pandemic, instructors did not rely on formal professional development opportunities, but rather they engaged in autonomous trial and error, made selections of technology based on their knowledge of their students' needs, and were able to 'practice' in their classes (Gao & Zhang, 2020). Likewise, their professional development depended to some degree on "expert" support, in the form of resources, but not necessarily the "administrative support" that was, pre-pandemic, identified as a requirement (El Shaban & Egbert, 2018, p. 242). The minority who had online teaching experience going into the pandemic found it helpful, although they were not able to plan their classes in the same way when they were in ERT mode (Moser et al., 2021, p. 7). Similarly to the pre-pandemic studies, the pandemic studies identified that instructors could be placed on a spectrum regarding their feelings and reactions to teaching online in an ERT context, from positive to reserved to less enthusiastic (ECML, 2021).

3.3 Summary of all studies

All twelve studies, the five pre-pandemic studies along with the seven pandemic studies**,** are summarized in the table below with six criteria: the author(s) of a study, the time

period in which the study was conducted, the geographic location of the participants, the methodology, the number of participants, and finally the focus of the study.

Table 2
Summary of pre-pandemic studies

Author(s)	**Time period covered by Study**	**Location of Participants**	**Methodology**	**Number of Participants**	**Focus**
Hampel and Stickler	2008-2013	Europe	Questionnaires (three)	500+	Professional views on technology
Hamel	2015-2016	Ottawa, Canada	Questionnaire and interviews	3	Attitudes and practices on hybrid language courses
El Shaban and Egbert	2017	USA	Literature review and workshops	8	Mapping the Diffusion of Innovation theory to language teachers and providing a new model for professional development
Observatoire de la langue Française	2018	*La francophonie*	questionnaire	2,445	Technological competencies and professional development
Caws et al.	2019	Canada and France	survey	100	Digital resources and didactic posture

Table 3
Summary of pandemic studies

Author(s)	**Time of study**	**Location of Participants**	**Methodology**	**Number of Participants**	**Focus**
Gao & Zhang	March 2020	China	interviews	3	Instructors' cognition
MacIntyre et al.	April 2020, November 2020	worldwide	questionnaire	634; 245	Stress and coping; the role of hope
Delforge et al.	May 2020	Belgium	questionnaire	331	Digital usage by language teachers in initial ERT
Moser et al.	July 2020	USA	questionnaire	377	Prior online teaching experience
ECML	February 2021	Europe and worldwide	questionnaire	1,735	Lessons learned
Heilporn	March 2020 - June 2021	Quebec, Canada	questionnaire	2,443	Working experience and conditions
Werner & Küplüce	Spring and Summer 2021	Germany	Interviews	20	Prevalent challenges and important competencies

The twelve studies that were reviewed here, from both the before the pandemic and the early pandemic, were chosen because of how they discussed instructors' need for time, planning, and technological or pedagogical support (MacIntyre et al., 2020, 2022; Moser et

al., 2021). As noted earlier, MacIntyre et al. observed that the pandemic had precipitated "ongoing changes in language pedagogy," and that "it is important to study how these trends play out in the longer term both for language teacher stress and wellbeing" (2020, p. 11). Our review of studies emerging from the initial period of pandemic ERT provided a look at some of the research being done around the world.

Building on that, the aim of this master's thesis is a project that seeks to further our understanding of how language instructors have coped, adapted their teaching practices, engaged in professional development, and built digital competencies. It also seeks to give language instructors a voice, by means of interviews, to produce empirical data that will be analysed qualitatively and focus on language instructors' stance as online professionals during the pandemic period of change.

3.4 Research questions

The research questions we wish to investigate for this thesis study are hence as follows:

1. How did French language university instructors cope with the transition to emergency remote teaching at the beginning of the pandemic?
2. How has the online teaching experience been transformative for language instructors in terms of their professional development and techno-pedagogical practice? More specifically:

    2.1 What digital competencies and literacies have they developed, and how?

    2.2 How do they perceive themselves as online language instructors?

    2.3 What aspects of their digital practice are they going to retain when they have the option to return to in-person teaching?

These questions led to the design of a qualitative study based on interviews of language instructors, which was able to take fit under a larger study that consisted of two questionnaires, both prior to and during the pandemic, with a focus on language instructor's written corrective feedback practices (Hamel & Bibeau, 2021). The interview format chosen for this study enabled the instructors to reflect on and articulate their experiences more comprehensively.

4. Methodology

The following sections will detail the methodology adopted for this study, first by outlining the theoretical framework that grounds this study, followed by the data collection and analysis procedure that took place.

4.1 Theoretical framework

The theoretical framework I chose to ground this study is professional didactics, which provides a way to study work by looking at professional development, as this is very salient in the models, the studies reviewed, and the analysis of the corpus to come. The framework, also translated into English as vocational didactics (Mayen, 2015, p. 201), was developed in France and is widely known and discussed in French-language research. Professional didactics "emerged to address the issue of training for industrial workers faced with evolving work conditions and the need to develop diagnostic and adjustment skills" (Mayen, 2015, p. 202), and it has been used in many fields of work since then.

Professional didactics views and defines professional work as training and transformation opportunities (Mayen, 2012, p. 60), both within and outside of formal professional development training contexts. In this way it is conceived as an intersection of work, learning and training. Professional didactics does not view training or professional development as separate from the regular demands of professional work; rather as something that is wholly integrated into the routine as well as the exceptional demands of the professional tasks. This framework combines formal professional development with on-the-

job or “workplace learning” (Mayen, 2015, p. 201), not just for those new to a position but even for experienced professionals.

Professional didactics considers, and values, what is done at, through, and for work (Mayen, 2015, p. 202). It views a professional’s ongoing development and expertise as a continuum, “to understand what and how workers learn in the everyday circumstances of their professional practice” (Filliettaz & Billett, 2015, p. 2). Recognizing that work in all settings is dynamic, the framework of professional didactics analyses ‘how competencies are constructed and developed in and for work’ (Pastré, 1999, p. 109). With that in mind, professional didactics will provide a lens through which to analyse the developments of online language instructors as they constructed their own professional development during the switch to ERT and the first year and a half of online teaching due to the Covid-19 pandemic. One of the early developers of professional didactics, Pierre Pastré, noted that the framework puts the researcher ‘a little in the position of a historian who risks confusing the surface traits and representative characteristics with a long-term evolution’ (Pastré, 1999, p. 110). In the evolving context of Covid-19, the virus which is still circulating at the time of this writing, researchers are still adapting, and no firm conclusions have been drawn; the lessons learned in ERT and online language teaching during the pandemic are still being discovered and defined.

It appears from the above definitions that the concept of professional didactics is different from professional development or on-the-job training. Professional didactics includes both of those in a holistic way, as well as self-reflection on the part of professionals who are trying to advance their practice because in this way “learning is constructed in action within a situation, in and through experience with a professional environment that is,

first and foremost, a cultural world created by humans" (Mayen, 2015, p. 204). In that manner, research has shown how, when professionals have autonomy with a new situation but the same "expected goals…. new forms of action can be learned and constructed by an identical population" (Mayen, 2015, p. 215).

4.2 Participants, procedures, and data analysis

The corpus for this project was collected by conducting semi-guided interviews with ten language instructors, followed by a thematic qualitative analysis (Miles et al., 2020). This approach allowed for further exploration of interesting subtopics as they arose (Gillham, 2005, p. 4). Following are the details of the context, participants, procedures, and tools used for the analysis.

The interviews were organized under the umbrella of a larger, ongoing study on digital practices during times of pandemic. That study, under the supervision and design of Dr. Marie-Josee Hamel at the University of Ottawa, began in February 2021. In the first stage of the study, language instructors at the university level were invited to respond to an online questionnaire regarding their written corrective feedback, with an option to indicate if they were willing to be contacted for follow-up. Of those who provided their contact details, ten were invited to participate in interviews of no more than one hour, and all of them agreed.

The interviews were scheduled, conducted, and recorded on Microsoft Teams. Louis-David Bibeau, a research assistant of Dr. Hamel, read the interview protocol (see Appendix), after which I began my portion of the interview by asking a variety of a series of nine questions. The number and sequence of the questions were sometimes adapted, for example

if the instructor had already anticipated and included an answer to a question in a previous answer. Instructors had the space to speak without interruption. Where appropriate, follow-up questions were posed by me or Bibeau. After I concluded my questions, Bibeau continued the second half of the interview with his set of questions to gain more information specifically regarding online written corrective feedback practices.

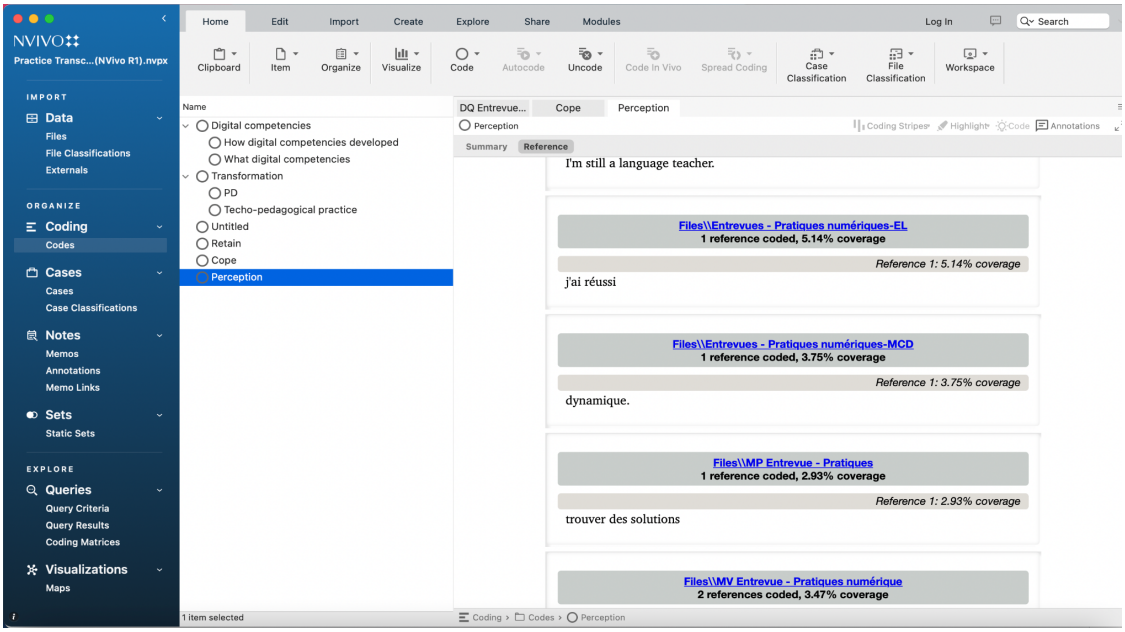
Of the ten interviews, four were conducted in English and six in French. The four interviews in English were automatically transcribed using that feature in Microsoft Teams. The French interviews were automatically transcribed by uploading the recordings to the Sonix.ai application. I then reviewed and manually edited the transcriptions in both English and French while listening to the recordings. The interview questions were developed based on the research questions for this study, and in most cases matched them very closely. Instructors provided in-depth responses with details and examples of their experiences. In only a few cases was it necessary to ask a follow-up question for clarification.

The videos and transcripts were uploaded into NVivo for thematic coding (Miles et al., 2020; Saldaña, 2021) according to the research questions. NVivo was chosen for its affordances in grouping the coded words and phrases together, as well as for the practical reason that the University of Ottawa already had a licensing process in place to use the software. NVivo does not code automatically but allows for careful reading and manual coding. As well, it automatically generates word clouds (see Appendix), from which some of the most frequently mentioned words were used as themes for the coding and analysis that followed.

The codes identified were “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-

based or visual data" (Saldaña, 2021, p. 5). The coding method used was Descriptive and In Vivo codes. Once I had these codes, I would review them and add codes for positive, negative, or neutral responses, and use other tools such as colours, arrows, or groupings in other to understand the responses holistically and better see, visually, the patterns and themes that emerged. This process was cyclical, and often led me to go back to the responses for another careful reading, and re- or sub-coding as necessary, in order to uncover "participant processes, emotions, and value systems" (Op. cit. p. 19).

Figure 6
Screenshot of NVivo showing coded words and phrases



Several software updates and other technical difficulties added some delays to the coding process. As well, some of the features of NVivo, such as automatically coding

emotions or sentiments, were not available on the version of NVivo for Mac that I used. The codes used were as follows: cope; digital competencies, divided into to what and how developed; transformation, divided into professional development and techno-pedagogical practice; retain and perception. The coded words and phrases could then be viewed grouped under each heading, regardless of which interview they were from. Within the functionality of my version of NVivo, I downloaded the lists of coded words into a .docx file and copied them into a spreadsheet. Key words were also extracted from the transcripts to create automatically generated word clouds in English and French.

The participants and the interviews can be summarized in the table below:

Table 4
Chart of the participants, universities (anonymized), languages taught during the interviews, length (in minutes) and language of the interviews

Participant (Pseudonym)	**University**	**Language taught during the pandemic**	**Length of interview (my section) in minutes**	**Language of the interview**
Beatrice	Ontario 1	French	35 minutes	English
Danielle	Quebec 2	French	48 minutes	French
Emily	Brazil	French	31 minutes	French
Evelyn	Quebec 2	French	28 minutes	French
Leah	Ontario 1	French	45 minutes	English
Madeline	Ontario 1	French	23 minutes	French
Margaret	Ontario 2	French	29 minutes	French
Melanie	Quebec 1	French	32 minutes	French
Roxanne	Ontario 3	French	43 minutes	English

Sarah	Ontario 1	French	37 minutes	English
Total time			***5 hours 51 minutes***	

All of the language instructors who participated in the interviews were female. Demographic information such as their age, educational background, or years of teaching experience, were captured as part of the larger study on written corrective feedback (Hamel & Bibeau, 2021); while this information is not considered specifically here, the instructors all had more than ten years' of experience teaching language at the university level (Op. cit.). Most of the instructors, six out of the ten, were from universities in Ontario, three were based in Quebec, and one was at a university in Brazil. Although some of the instructors taught other subjects as well, all of them taught French as a second, additional, or foreign language during the pandemic. The average duration of my portion of the interview was 35 minutes.

The results section of this thesis will consider the responses according to the research questions; to recall: how did French language instructors cope with the initial transition to Emergency Remote Teaching; how has the online teaching experience been transformative for them in terms of their professional development and techno-pedagogical practice, and, along with that, what digital competencies and literacies did they develop and how, how do they perceive themselves as online instructors, and which aspects of online teaching they would like to retain when classes can be held in person? Following that, in the Discussion section, these responses will also be considered in light of some of the models of online competencies that were considered in Section 2.3, as well as some of the empirical studies that were reviewed.

5. Data analysis and interpretation

The instructors shared many details from their experiences with online teaching, from early in the pandemic and the abrupt switch to ERT until the time of the interviews in October 2021; a period encompassing 18 months. In the following sections, we will consider the answers to the research questions. First, in Section 5.1, how instructors coped with the immediate change to ERT. In Section 5.2, we will consider their transformation as online instructors, divided into subsections of digital competencies, how those were developed, the participants' self-perception as online instructors, and concluding with which digital affordances they would like to continue using, assuming a return to teaching in-person.

5.1 (RQ1) Coping strategies

The first interview question asked instructors to 'think back to March 2020 when university classes first went online until now [and remember] how did you ... cope during this pandemic period?' This question was inspired by the studies by MacIntyre et al. about coping, which considered that "switching to online teaching was done under emergency conditions...[that] blurred lines between work and home" (MacIntyre et al., 2020, p. 11) and the follow up which showed language instructors "appear[ed] to settle into a 'new normal'" (MacIntyre et al., 2022, p. 22). The responses to this first question helped to contextualize and see any potential informal connections between the instructors' perceived coping strategies in an emergency context and their perceived development. Unlike in pre-pandemic studies, this question needed to be asked first given the unique, emergency circumstances that instructors found themselves in. Although much of the focus of this thesis is on instructors' technological practices and adaptations, this first question intentionally did not

mention technology, but was left open in order to allow for a range of responses that could include feelings, emotions, and the instructors' well-being. Indeed, compared with the responses to the other questions from the interview, the instructors spent by far the majority of their time answering this question and sharing their experiences.

Beatrice said, "I don't even know where to start with a question like that" and noted that she "had never taught a four-skills language course online, completely online, before." In her responses, the key word was "challenge," which she used six times throughout her response to this question. Melanie and Evelyn each used a form of the word "adapt" three times in their responses. Evelyn also highlighted that the initial switch to ERT happened "*rapidement, de manière très très très intensive*." Likewise, Emily used the expression "*m'adapter*" three times. Teaching in a different semester system, "*j'avais donné deux semaines de cours présentiel. Et d'un jour à l'autre, j'ai dû passer aux cours en ligne et voilà*." Margaret mentioned three times how quick the switch to ERT was for her – "*littéralement un week end*" – but with that she felt that "*je me suis débrouillé*." Leah repeated "we managed," twice, and added that "I didn't particularly enjoy the situation…it generated a lot of anxiety." Regarding the Fall of 2020 and Winter of 2021, she said the feeling was "we'll do the best we can, but it is not the real way we usually do it." She acknowledged that it got easier and easier with every semester, but "two challenges of online were and still are evaluation and presence of the students; to be very active and keep it alive."

"Cope is a very good word," said Sarah, and proceeded to describe herself as "never really technologically savvy." She had a very detailed recollection of moving her final exam online and said that preparing a "multiple choice exam" with the help of a relative was "very

time consuming" and "broke [her] heart" because it "wasn't fair" to students. "I'm really looking forward to being back in the classroom."

Roxanne "wasn't in panic mode" because she had already "been involved in online teaching projects for over ten years," so the switch to ERT "didn't faze [her] at all." She referred to "panic" three more times, in once reference to her colleagues and twice for her students. She recalled that her "colleagues that started [more recently] … concerned me more than anything else, and students' mental health…so that was more worrisome than the teaching." For herself, she felt prepared with many materials already uploaded and "lucky in that sense…I was more relaxed…personally, mentally, and professionally."

Danielle spoke the longest in response to this question at seven and a half minutes, and in fact incorporated much of the information that was sought from the other questions and will be included in responses to those in the following sections. Although Danielle noted that in March 2020, she was not teaching the French language, but rather, teaching how to teach French, she began teaching French in a later semester and noted that "*il y a eu beaucoup plus d'adaptations pour l'enseignement du français langue seconde*" compared with teaching the pedagogy class. Danielle described the experience as "*un défi*," but overall, she used the word "*bien*" four times in response to this question; twice at the beginning: "*ça s'est bien passé*," "*moi, je l'ai très bien vécu*," and twice again near the end: "*ça avait plutôt bien marché*," and "*ça s'est plutôt bien passé*."

Hence, in response to the question about coping, the most frequently used word was a form of "adapt", in English or French, which was used nine times by three instructors. "Challenge" was used six times by one instructor. Next was a form of "manage," used three times by two instructors. Three instructors emphasized how little time they had to switch to

ERT. Three instructors described negative feelings (panic, anxiety, “it broke my heart”), although in one case, Roxanne, that was in reference to her colleagues and students. For herself, she described the experience positively (“I was more relaxed”). Another instructor likewise used the word “*bien*” to describe the overall coping experience.

Similarly, looking at language instructors’ coping in April 2020 and again in November 2020, MacIntyre et al. found that “in the interval ... language teachers appear to settle into a ‘new normal’ ... the pandemic and associated changes to language pedagogy may have also been an opportunity for hope to exert its influent on well-being and even growth” (2022, p. 22).

Beginning with coping and throughout the interviews, two of the most frequently recurring emotion words were *frustration* and *empathy.* The feeling of frustration was tied not only to the learning of new technology, but also to the pandemic situation and its corresponding uncertainties as a whole. However, some of the instructors expressed frustration about students attending class with their cameras off, and the subsequent strangeness of teaching to a black screen. Looking at the second noteworthy emotion, empathy motivated instructors to, in many cases, design tasks that would include collaboration and build community, perhaps to a degree and extent that was greater than what the instructors would have done in an in-person class. Therefore, by adding empathy to the frustrating situation of teaching to black squares, it could be suggested that language instructors reconsider whether keeping the cameras on is necessary for the pedagogical goals of the class, or if it is related to the instructor’s own professional posture. Indeed, research shows that “the participant’s voice seems to be sufficient to make the rhythm of the interaction fluent enough without requiring visual support” in a study on teacher – student

synchronous online interactions in a language classroom (Guichon & Cohen, 2014, p. 351). By empathetically reflecting on this, the instructor may consider allowing students the agency to leave their cameras off for privacy, shyness, to rest their eyes, to eat, or for other personal reasons, at least at some points during the class.

This consideration of coping leads to the next research question and sub-questions about the instructors' experience of transformation.

5.2 (RQ2) Transformation

The following questions are concerned with instructors' transformation over the 18-month period from the initial switch in March 2020 until the time that the interviews were conducted. First, we will consider which digital competencies were developed, after which we will consider how they were developed. After that, we will look at the instructors' self-perception as online language teachers. Finally, we will look at which aspects of their digital practice they would like to maintain when they are safely able to return to in-person teaching. Although the following questions were asked specifically, in many cases participants addressed these topics in response to other questions, particularly the previous question about coping.

5.2.1. (RQ2.1a) Digital competencies - which ones and why

The first questions which related specifically to the digital competencies used by instructors were: "How has your online language teaching experience changed your pedagogical practice?", "What digital competencies and literacies have you developed?"; and "How have your day-to-day teaching practices changed or evolved during the Covid

pandemic?" In their responses to these questions, instructors for the most part described first their reasons for wanting to make particular choices, and then the tools that they used to make the changes. In the following paragraphs, we will consider the individual experiences of language instructors in their own words. In each case, we will hear what the instructor's considerations were when deciding which technology to incorporate in the classroom, as well as the specific digital tools and reconsidered tasks.

Beatrice had taught a writing and grammar course online before, but not a low-level four-skills course, so she assessed that the main challenge was to "evaluate which platform I should use at the beginning" "encourage interaction among the students," who were in several different time zones. She also knew that her learners were dealing with other challenges, not related to her classes but specific to the pandemic, from not having access to "reliable Internet [to those] who had children running around. One person for some reason … always seemed to be in their car ... And so they weren't in optimal circumstances to take the course…it's not just that it was online." As a change to her pedagogical practice, she introduced fun, collaborative games such a Kahoot grammar quiz that learners could join from their cell phones, in order to "help to build motivation." As well, she used a conversation chain to promote interaction among the 20 learners, 16 of whom would typically have their cameras off: "it was an ice-breaker, but it was a way for us to chain responses for them to practice interaction." Over time, the warm-up question evolved from "How're you doing?" to describing photographs, to sharing recipes, and so "we were able to generate a feeling of a kind of class culture…just forcing people to participate even though it's just much easier to hide." Regarding new competences that she developed, Beatrice

considered that she gave “additional interactive feedback” using audio recordings and became “in terms of…communication… more responsive.”

Evelyn was also teaching low-level students, and, in line with Beatrice’s experience, the key word for Evelyn was compassion. This can also be considered as an active coping strategy, which can include “concentrating efforts on doing something about the situation, and taking action to try to make it better” (MacIntyre et al., 2020, p. 3). In Evelyn’s case, the students had recently arrived in a brand-new city from their countries of origin, and their French language course was a small component of a professional major. For her the change was “*donc essayer de comprendre pourquoi il est absent, pourquoi il ferme sa caméra, pourquoi il n'a pas fait ses devoirs soudainement….et j'ai cherché à plutôt faire en sorte que le travail se fasse quand même, en encourageant, en suivant*.” Evelyn was already very technologically competent, and familiar with a lot of digital tools, but she said that “*j'ai appris à donner des cours sur Zoom et à utiliser de manière de plus en plus efficace les break out rooms dans Zoom qui étaient qui étaient très très importants dans les cours de langues*.”

Roxanne similarly discussed the importance of timing in her responses. She said that “in terms of assessment style and methodology,” her pedagogical practice “changed dramatically,” and she highlighted several specific examples. A key aspect was the timing, both for her and the students: “something that can be done in 20 minutes in person. I have to give double.” This was because she observed that “the directives and explanation instructions about [a] procedure needs to be done at least three times a week…it's just information doesn't seem to…students don't get information right away as they would do in person.” For evaluations, she found that “when it comes to testing, they seem to panic a little

bit more than they usually [do]. So, the…time management got drastically, dramatically changed." As well, her own time outside of the classroom altered as she adapted course content to create multiple choice exams and "add more communicative pieces," which took "lots of time. So, in terms of preparation, it's changed my practice." As far as developing new digital competencies or using new tools, she did not think that she "developed anything new…it's because I'm relatively comfortable with the instructional technology." In fact, prior to the pandemic she had a pronunciation platform that she had developed, as well as a video podcast assessment, so "the only thing that I added will be Zoom and to be honest I use less technology this year and last year than before...that was a deliberate choice that I made." This was because:

> I thought since the format is in remote delivery … and I'm not seeing my students in person and face to face and I don't have that human interaction; I decided this last year and this year will be the year that I concentrate more on content than technology…so in fact I went kind of backwards.

Melanie found that her pedagogical practice became "*un peu plus carré*" because "*synchrone permet un peu moins de flexibilité dans l'adaptation des stratégies pédagogiques des professeurs parce qu'on a une moins grande marge de manœuvre, c'est à dire que c'est plus difficile d'interpréter les signaux qu'on a d'habitude en classe.*" Part of the reason given for this was that the learners had their cameras off. Although before the pandemic she had used "*des petites applications en fait, qui permettent de donner aux étudiants de l'interaction instantanée.*" What she added was "*des activités à distance, synchrone, collaborative avec les étudiants.*" She also highlighted giving a video commentary as part of her corrective feedback practice as "*un changement*."

Pre-pandemic, Leah had been accustomed to using digital tools for asynchronous tasks. It was a change for her to be on-camera, but she appreciated the ease of taking attendance with every student's name already clearly visible. Leah named shared documents, recordings, and break-out rooms as the tools she used synchronously, and she took more advantage of her institution's LMS in order to download documents or receive homework assignments. Regarding the platform, she used Adobe Connect, MS Teams, and Zoom before her institution directed them to use one particular platform. She said the "need to keep the attention of the students" meant "somehow you revisit your objective, somehow you revise your material. So [the switch to ERT] was beneficial in that respect…otherwise it's easy to fall into a repetitive model."

In describing professional didactics, Pastré wrote that "*il semble bien que l'analyse de l'action, quelles que soient ses formes (debriefing, retour d'expérience, autoconfrontation) soit un instrument particulièrement puissant*" for workers on the job; in this case language instructors (Pastré, 1999, p. 118). Echoing this, Madeline said that the change forced her to reflect a lot on her teaching practice, and "*à réfléchir aussi beaucoup à mes étudiants, donc aux apprenants, à leur style, à leur défi, à toutes les contraintes qu'impose ce nouveau mode d'enseignement. Donc, ça m'a amené beaucoup à me mettre dans la perspective des apprenants*." The digital skills that she already had were enriched, and she reflected that she developed "*beaucoup plus d'aisance en général à naviguer à travers la panoplie d'outils, à maîtriser des outils*," and she specifically listed the LMS Brightspace. She also redefined how she prepared questionnaires online: "*J'ai intégré des appariements, des questions en développement avec tableaux, des images et j'ai essayé de diversifier pour pas que l'activité soit uniforme*."

Danielle described herself as a "*sceptique au début*." She felt that many language teachers had always tried to avoid teaching online, "*moi, j'ai trouvé que c'était beaucoup plus positif que ce qu'on me disait.*" The challenge "*j'ai trouvé ça très difficile pour les étudiants en retard sur le plan humain, parce qu'il y avait des gens qui vivaient des situations difficiles…mais sur le plan technique, apprentissages, etc, j'ai trouvé que c'était beaucoup plus positif que ce que j'imaginais.*" Prior to March 2020 she was "*déjà très à l'aise avec tous les logiciels de présentation et les outils que nous offre mon travail sur Moodle*," but the change came with looking for interactive tools; the pandemic "*m'a obligé justement à aller chercher des outils alternatifs et donc à développer beaucoup plus ma connaissance des outils interactifs qui sont interactifs pour l'apprenant mais aussi pour l'enseignant*."

Emily, who taught a beginner level as well as a high level course, said she adapted "*de manière complètement différente dans les deux cours*." Overall, however, she felt there was little change: "*Je ne sais pas si ça a vraiment changé ma pratique pédagogique. Ça, je ne suis pas sûr. Ce que je vois, ce que j'ai mieux compris, comment on peut assurer des interactions en ligne*." For her, the most important tools were Padlet and those for collaborative writing, in order to "*garder l'interaction orale ou écrite en ligne*." For the most part, these and other tools were already known to her, but she used them more during the pandemic, so the change was "*au niveau plutôt de la connaissance de nouveaux outils*." She noticed that her beginner students, in particular, were relying heavily on online translation tools for their responses. For that reason, she changed the course format from one synchronous and one asynchronous session per week to two synchronous sessions, a format that she continued with in the following semesters.

For Margaret, she had to reconsider the academic honesty of her students, and the fact that they could find an answer on their computer "*en trois clics*." Some had access to French-speakers in their home, community, or network, which was a learning advantage, and some did not, creating a situation with inequalities. Margaret added Padlet to her list of competencies, increased her use of Google Drive, and improved her use of Zoom. As well, she mentioned E-class: "*je l'utilise plus dans le sens ou j'ai appris à publier des ressources gratuitement, comment dire, des lectures pour mes étudiants plutôt que leur faire acheter un cours kit, ou un manuel*." Overall, she wanted to take the opportunity to redesign her classes: "*c'est ce que j'aimerais bien révolutionner dans mon enseignement, le moderniser, le rendre libre, ouvert*." However, keeping in mind the initial issues of inequality that she identified with the first switch to ERT, she chose not to teach language classes in 2021:

> *je préfère enseigner des cours de disciplines en ligne et là ça se passe magnifiquement bien. J'ai trouvé des stratégies etc mais les cours de langues, là je ne sais pas comment je vais faire. Donc je ne peux pas dire que la pédagogie est extrêmement évoluée malheureusement.*

When asked to describe how the experience changed her pedagogical practice, Sarah described feeling awful, horrible, "dread and fear" and "deathly afraid" of making mistakes with the breakout rooms. "I got into teaching because I like being with people, not little tiles with faces on them and you don't get a lot of faces." She recalled teaching in an in-person classroom, reading the room and knowing who to call on for an answer, and contrasted that with being online "and I don't have that ….and I think it changes the way you teach." She found that Brightspace "became a really good repository" of video lessons she had previously prepared "because now I can go back to last year and the year before…this is a really nice way also of organizing documents for courses that I'll be teaching again in the

future." Regarding assessments, she felt that "I didn't take the time, or I didn't make the time - probably a bit of both - to just kind of learn how to use the tests in Brightspace." All in all, Sarah felt her pedagogical practice had not changed: "I'm still really trying to take my old ways and fit them into this new way of doing things...I don't have the confidence [to add more technology] and the last thing I want to do is waste the students' time."

Therefore, in response to the first part of the research question "How has [language instructors'] online teaching experience been transformative for language instructors in terms of their techno-pedagogical practice," we can see that the situation led half of the instructors to consciously seek out additional tasks and tools that were collaborative or interactive. As well, over half of the instructors described deepening their knowledge of digital tools that they already used or knew of, or becoming more effective in choosing a specific digital tool. In two cases, the use of technology was minimized: Roxanne by taking into account her students' stress and overwhelm, and Sarah because of her own stress with using new digital tools, and her feeling of respect for the students' class time. Two other instructors reported dramatic changes: Margaret did not wish to teach language classes online anymore, although she was comfortable with teaching classes in other subjects, and Emily, who added an additional synchronous session each week. On the whole, we can see that all the participants reconsidered their classes by centring on the specific pedagogical and technological needs of their students in an ERT online environment, as well as the stress that students were facing as a result of other factors of the pandemic. This is in line with the findings from China, where English language teachers "chose appropriate platforms and adopted various teaching methods...through their clear understanding of students' learning needs" (Gao and Zhang, 2020, p. 12).

More information about the tasks and digital tools mentioned by the instructors will be discussed in Section 5.2.3. But first, let us consider a sub-question, which examines how language instructors were able to develop their digital competencies.

5.2.2. (RQ2.1b) Occasions for professional development

The second research question also included the aspect of professional development, specifically in order to consider how the language instructors were able to add the digital competences needed in the short amount of time afforded by ERT. Instructors were asked "How has your online language teaching experience changed your professional development?" and in some cases, as a later follow up, "How did you develop new digital competencies?" Although it could be thought that the intention of the first question was to ascertain "How has your online teaching experience been changed by your professional development?" the wording of the question allowed instructors to include many sources of professional development. In many cases, instructors had already referenced their professional development in the earlier cases, and those responses have been included here as well. In discussing this question, instructors referred to webinars, workshops, and seminars, both from inside and outside of their institutions, as well as using the collected resources of colleagues, or speaking with colleagues or other people in their network.

With the initial switch to ERT, Beatrice immediately identified that she was "going to have to do some research" about the type of interactions that she wanted to create, between herself and the students as well as between the students. A year and half later, she observed, "I'm always looking for resources to support my professional development, but I'm not looking in the same places that I was before [the pandemic]." One key difference is

that now she is focussed on looking for "resources for supporting online language teaching, which I hadn't really been focussed on as much before." She reached out to a colleague who had previously been hired "for her expertise in being able to teach online and hybrid courses." In the beginning she said, "there was a lot of trial and error" and she took into consideration "lots of feedback from the students themselves." Considering "*trop de suggestions*" that she was getting, or discovering "a sexy new tool," she felt that she became more discerning: "What I'm able to do is select appropriate technological tools for what I need for pedagogical purposes…It's evaluating and judicious use of technological tools."

Melanie was already in the habit of keeping herself up to speed with new technological developments before the pandemic, although she felt that "*le numérique n'a pas toujours été toujours assez présent dans mes cours.*" The change in her professional development came because "*avec la pandémie, il y a eu une accélération considérable et que j'ai passé une quantité importante d'heures l'été dernier. Surtout à lire beaucoup sur l'enseignement à distance via les cours à distance, les cours asynchrones-synchrones*." She identified that accelerated timeline as a challenge.

Danielle looked first for "*des ressources produites par d'autres professeurs, par des spécialistes en technologie.*" She said that the pandemic "*Ça m'a obligée aussi à aller chercher les ressources dans Moodle, c'est à dire ce qu'on en fait, il y en a beaucoup, y en a beaucoup, beaucoup, beaucoup qui sont déjà implantés.*" As well, she sought out digital tools that she had heard of but never tried before: "*On se rend compte qu'il y a beaucoup de choses qui existent déjà et donc par exemple que pendant longtemps les profs de langues, ils utilisaient Hot Potatoes.*" Like Beatrice, she found that there was an abundance of resources, and this led her to develop her selection process based on the affordances of various tools:

"*Ça a été d'affiner la précision de sélection d'un outil. Pour répondre à un besoin particulier. C'est vraiment le sens la que je pense que j'ai progressé sur le plan des pratiques numériques*."

Sarah had a helpful colleague who she described as a "very patient" "tech wizard" who supported her in developing her LMS "minimally compared to what it was [capable of]." She also attended a presentation on her LMS but found that the pace of the shared slides and screen caps of the presentation "just way too fast" so that, in spite of taking notes, she "didn't absorb" all of the details. Although she found the potential of her institution's LMS "magnificent," personally she said "I don't need any of that information now. It's not useful."

Margaret was on leave during the first switch to ERT, and she watched a lot of webinars in anticipation of her return to teaching a language course. She was aware of a lot of online courses for online teaching, both from her university and from other sources such as Coursera, and although she felt these would be interesting and beneficial, she said: "*Je n'ai pas eu le temps, je l'aurais bien fait.*" As the months of the pandemic went on, she felt that the quality of the offerings from her university improved. In the beginning, she felt it was "*presque nuls*" because for teachers with a basic knowledge of Zoom or an LMS, "*on n'avait rien à y apprendre… Je crois qu'on [les professeurs] a dépassé très rapidement les connaissances des teaching commons*." As 2021 drew close she recalled: "*j'ai eu l'occasion de suivre des cours qui finalement arrivaient à des problèmes vraiment concret*s." In the end though, she felt her own efforts in the online classroom was the most significant source of professional development: "*j'ai beaucoup plus appris par moi même, par l'expérience que par ce que j'ai pu lire ou suivre comme cours en ligne*."

Two other instructors also accessed training webinars, but through their university. Leah referred to her university as her main source of professional development, both at the institutional level and within her faculty, as well as a colleague who prepared videos and was available for "individual consultation." There were training sessions about the platform, the LMS, and "tools, which can be numerous." With so many opportunities for professional development available, she observed that "you could be in training part of your week, but I didn't have that luxury to have all that time available." Evelyn watched a lot of tutorials prepared by her university. She said that her institution is "*très très très très techno et très très encadré. Il y a du budget pour ça donc on a été chanceux de pouvoir suivre plusieurs formations aussi*." Most of this was focussed at the LMS level, but it covered nearly every aspect of a course:

> *Pour être capable de faire un environnement logique, visuellement intéressant, simple, convivial, organisez des nouveaux carnets de notes pour qu'on puisse travailler à distance, ...[et] pouvoir donner de la rétroaction à l'oral, à l'écrit, faire des groupes de conversation qui pourraient travailler à l'extérieur des groupes*.

Similarly, Madeline reported access to "*beaucoup de formations en ligne avec l'université*" in order to "*accéléré au niveau de la technol*ogie." but she described those that she had access to as "*generalement assez sommaire*." She took a half a year of leave in order to focus on her professional development: "*j'ai travaillé justement à partir de à étudier et à intégrer des outils pour l'enseignement en ligne. Donc oui, alors ça a accélérer finalement l'intégration d'outils technologiques dans ma pédagogie*."

Two teachers had slightly different responses regarding their professional development. Roxanne, who had already developed a variety of digital competencies over the preceding years, including her own tools, found that the pandemic limited her regular

routine of professional development; her own articles and projects were put on hold. She did take part in workshops and seminars, but these focussed on online teaching and not her areas of research. “It’s very different,” she observed, “from my usual research profile and professional development profile.” Emily did not reference using any outside resources at all, but rather she spoke to her transformation as a language instructor: “*je pense qu'on a tous appris en termes professionnels. Donc je pense qu'il y a eu un développement professionnel*.” She felt that she had not changed her teaching practice or outlook, but rather: “*j’ai appris à avoir des alternatives*.”

We recall that “Nobody making the transition to online learning under [extreme ERT] circumstances will truly be designing to take full advantage of the affordances and possibilities of the online format” (Hodges et al., 2020, np), however the passage of time from the first urgent days and weeks allowed instructors the opportunity to develop as professionals. When we considered the ways that they did that, the responses above suggest division into four categories: 1) Training by specialists or experts (conferences, courses, seminars, training sessions, workshops); 2) Self-training (articles, compilations of resources, tutorials, webinars); 3) Training by peers (colleagues, family members), and Unspecified (instructors who named trial and error, or nothing at all). To summarize results of the answer to the research question (R2), how has the online teaching experience been transformative in terms of professional development, the majority of instructors (n=7) mentioned expert-led training such as a workshop, seminar, or university-organized training session, followed by a self-training source (n=6). Most instructors (n=7) accessed two or more types of professional development. This shows a shift from the pre-pandemic survey we looked at earlier, which showed French language instructors mainly using conferences for their professional

development (Caws et al., 2021, p. 24); however, it harmonized with the pandemic findings from China, where instructors "ICT literacy...was facilitated by online teaching practice" (Gao & Zhang, 2020, p. 12). Pre-pandemic, the "need for professional development offered on a regular basis, ... [as well as] encouraging teachers to develop and participate in [professional learning] communities of practice" (El Shaban & Egbert, 2018, p. 236) had been identified as desirable, although none of the instructors in our study mentioned being or feeling a part of a community of practice. However, they did develop their competencies through a combination of formal professional development events, as well as by their own efforts, by searching out resources and by trial and error. This harmonizes with the view of professional didactics, which values the training done at and for work (Mayen, 2015).

5.2.3. (RQ2.2) Self-perception as online instructors

As described in the Methodology section (4.2) above, I conducted the first part of the interviews, which averaged 35 minutes for my questions, and then analysed the corpus independently. Near the end of my portion, the participants were asked to describe how they perceived themselves as an online language instructor. For most participants, this was the second last question that I posed, and it was always asked explicitly. The responses captured how the instructors positioned themselves after having the time to adapt to ERT over the course of a year and a half. That time period covered parts of six semesters: the end of the Winter 2020 semester, the Summer and Fall 2020 semesters, Winter, and Summer 2021, and the first half of the Fall 2021 semester, although not every instructor taught a language course every semester.

Three teachers used a form of the word "frustrated" when describing their self-

perception as online teachers. "*Je me perçois comme un professeur engagé et impliqué auprès de mes étudiants, mais limité quand même dans mon champ d'a*ction," said Melanie. She then asked and answered her own follow-up question:

> *Mais comment est-ce que je me perçois à part comme un professeur très frustré pendant la pandémie? Parce que je ne retrouve pas la qualité de lien que j'ai ou que je pensais avoir avec mes étudiants....Pas mal de frustration*.

Margaret also spoke of frustration: "*Je suis quelqu'un qui peut trouver des solutions...mais je me trouve pas particulièrement efficace ou particulièrement épanouie dans l'enseignement en ligne. Je suis plutôt frustrée et inquiète plutôt dans la survie*." Danielle echoed that:

> *Je pense que même si parfois il y a des frustrations que les étudiants ne trouvent pas toujours ça facile. Je pense que dans l'ensemble, ce que j'ai offert comme solution, ça a bien marché. Ma preuve, c'est leur performance.*

Danielle felt that technical issues were quickly and easily solved. She acknowledged: "*'il y a toujours place à l'amélioration mais, mon impression et les quelques rétroaction que j'ai de la part des étudiants donnent l'impression que ça va quand même bien.*" Her self-perception as an online teacher for whom things went well and who overcame the frustrations was validated by her students' performance in the course.

Other instructors spoke to their level of competence, and the continued need for professional development. Leah felt that she "still had a lot to learn," but overall, she said "I'm not too bad in the sense that my students get ... what they need." Similarly, Beatrice is "ready to put the time in to learn better ways of teaching online. However, she felt: "I'll never be fully happy with [teaching online] because I don't think that the way [students] should be taught [language]." In spite of that, she said "I feel like I'm competent...Under the circumstances I think I do a good job and I know that I can do better." Evelyn also described herself as competent, as well as empathetic and organized; her self-perception was informed

by surveys that she distributed in the middle and at the end of her course to get direct student feedback on what worked best for them.

Two instructors provided very different views of their level of comfort in the online classroom. At the beginning of her response, Roxanne said she felt that she was "not very effective...there's always that imposter syndrome and I feel like I'm [a] fraud," but as she continued talking, she said that "I guess I'm comfortable and that comfort level shows and puts students at ease." Following that she identified herself as "relatively confident and ...efficient and [a] good instructor." In contrast, Sarah said the online classroom "honestly, it's still not a comfortable place for me." She described herself as "very hesitant, unless it's something that I've used before and ... I'm familiar with it." She spoke of her students being "patient" and telling her that "you just have to click here," and said the experience made her feel that "I just have to put my pride in my pocket because there's no point getting all flustered over it... [The students] can bail me out [of technical difficulty] as long as they do it in French."

Madeline described herself as "*dynamique*." She explained how she prepares a cultural moment to greet her students from the moment they join the classroom platform: "*D'ailleurs, quand mes étudiants arrivent, je mets toujours une chanson quand ils sont dans la salle d'attente. Exemple il y a le plat du jour et il y a toujours de la musique, toujours de la musique canadienne française*." After that, she does not simply present a Powerpoint, but rather uses a variety of tools and tasks: "*J'essaie des break out rooms, je sors des sondages, petites vidéos ou capsules audio*." She noted that this was a transformation from her in-person teaching practice: "*Je ne faisais pas ça avant ça, ça m'a permis d'ajouter ça*." On the other side, Emily did not perceive a transformation as an online instructor, but rather a

transference of her teaching strategies: "*Je pense que ça n'a pas tellement changé à mon avis, parce que j'ai réussi à maîtriser les outils comme je maîtrise les outils en présentiel*." Even when she taught "*en présentiel, je n'aime pas venir avec un PowerPoint, avec des règles de grammaire pour présenter ç*a," but rather co-constructed the learning with the students. For her, the only difference was using digital tools, which is something she felt comfortable with:

> *Je ne sais pas faire des choses un peu qu'on ne faisait pas tellement dans les présentiels, mais moi je ne vois pas vraiment de différence maintenant entre ce que je fais. Maintenant, c'est ce que je faisais avant à part les outils qui sont, qui sont différents? ... Donc ma perception n'a pas tellement changé.*

After a year and a half of teaching online, the self-perceptions of the language instructors were wide-ranging. Their responses were complex and nuanced, and linked, not only to their perceived technical abilities, but also to a self-evaluation of how they performed during the period of ERT: "I did well" (Beatrice); "I succeeded" (Emily); "I'm very hesitant" (Sarah). These comments align with the experiences of the three instructors in the pre-pandemic planned hybrid course, in which they were found to be 'committed to innovation, … not afraid of risk and renewal of their practice. Collaboration with peers ... seems to be a key element of their success. Pedagogy is put forward, while technology remains at its service' (Hamel, 2017, par 71, paraphrase). For one instructor, the period of ERT did not seem to affect her self-perception as a professional at all: "I'm still a language teacher" (Evelyn). Although three instructors used a form of the word *frustrated*, this feeling related more to their initial experiences, as "when coping strategies fail, individuals may find themselves feeling stress, anxiety, and a suite of negative emotions" (MacIntyre et al, 2020, p. 3). After teaching in the ERT context and online for a year and a half, many of the

language instructors in our study used positive adjectives to describe themselves (competent, organized, efficient, comfortable); this correlates with the findings that "teachers reported an increasing sense of growth during trauma" (MacIntyre et al., 2022, p. 1), and "form[ed] new pathways to solve the problems presented by the switch to online teaching" (MacIntyre et al, 2022, p. 20).

5.2.4 (RQ 2.3) Aspects of digital practice to retain in in-person teaching

As the last question of my section, instructors were asked to think about which digital practices they would like to retain when it is safe to return to in-person classes. Of the ten participants, eight instructors identified digital aspects that could include tools, tasks, interactions with students, or feedback that they would like to keep, along with the reasons for which they would like to permanently adopt or reject these practices.

The responses can be considered along a spectrum. At one end, two instructors were not able to identify digital practices that they wished to keep after returning in-person, either because 1) the digital affordance is not transferable or 2) she did not wish to continue using any digital tools. In the first case, Leah noted that it was helpful to have the learners' names right there on screen in the video box which enabled her to name and include learners more easily in discussion, but that affordance is not transferable to an in-person classroom. In the second case, Sarah was not able to think of any online tools that she would like to retain, as she explained: "It's so tedious. It's additional screen time that I just do not need or want."

Three instructors identified the affordances of automated exercises or testing. One advantage of this is that such assignments or assessments can be corrected instantly: "that saves a lot of time" (Roxanne). These activities, including testing, have the additional benefit

for learners of being able to be completed asynchronously as a stress reducer, so that "even though their bus is late, or they can't come on campus, ... [having the assessments online will help in] reducing anxiety" (Roxanne). Another instructor specifically identified the advantage of having automated asynchronous homework assignments for learners to be able to repeat and practice what they want and need: "*je vais le garder parce que je pense qu'il y a vraiment un apport sur le plan de la répétition des savoir*s" (Danielle).

The next group of tools that instructors identified as wanting to retain after the pandemic can be collected under the heading collaborative; that is those tools that enable learners to connect with each other and interact on activities and tasks. These collaborative tools can be further considered in two sub-categories: tools for learner collaboration and tools for giving feedback. It is possible that the topic of giving feedback was given more attention and was influenced from the context of the interviews being done as part of the larger project that focussed on written corrective feedback (Hamel & Bibeau, 2021). Four instructors identified seven collaborative affordances that they would like to continue using for in-person classes. Roxanne named collaborative writing activities; she had already used these activities prior to the pandemic with in-person classes for many years before transferring them to an online class platform. Two instructors (Melanie, Roxanne) mentioned using a shared Google doc for writing activities with multiple learners to collaborate with each other, synchronously or asynchronously. Roxanne also named collaborative writing activities as something she wished to continue with; she had already used this prior to the pandemic with in-person classes for many online affordances for many years prior to the pandemic as well. She would also like to keep recording presentations, either in an audio or video format, so that learners could engage in self- and peer-evaluation.

The recordings had the additional benefit of saving class time, as the instructor could watch or listen to the presentations, assess them, and provide feedback asynchronously. Regarding feedback, Melanie also included doing this in a collaborative way by using audio or video, and Evelyn described a collaborative dialogue with her learners. The topic of giving feedback was explored in more depth in the second half of the interviews, where it was the focus of the questions posed by Bibeau.

In a separate category, Melanie transformed her pedagogical practice by designing more structured activities. Even without using a digital tool, she felt she would continue with this type of planning: "*Je dirais que c'est peut être ce que j'ai gardé ou ce que j'ai appris de la pandémie. C'est de planifier des activités de façon encore plus structurée, plus carrée*."

On the other end of the spectrum, four instructors wished to retain online learning in general as an option for their language classes, with preferences for different formats. Madeline talked about a bimodal class; Evelyn would like to keep a flipped classroom strategy. Both Melanie and Emily would like to retain a hybrid class structure; however, Melanie said that "*Je dirais que principalement la pédagogie en ligne pour les cours de langue, je ne sais pas si ça, s'il y a eu un impact très positif du passage en ligne. Pour moi en tout cas*."

Therefore, when thinking of the digital practices that they wished to keep, the majority of instructors (n=7) identified a range of digital tools that they would like to retain in on-campus language classrooms, with the top responses being synchronous collaborative tools for writing and offering feedback, followed by asynchronous automated tools for assessments and grammar exercises. Although instructors described a variety of tools and transformations that they added to their teaching practice from ERT onward, the list of what

they wanted to retain when they had the option to teach in person was, in comparison, shorter. Regarding the digital tools, there was no one single answer that was repeated, so that it could be identified as the best digital affordance used by language instructors during the pandemic. Rather, the majority of instructors named one or more tools that would be useful in their classes with the specific needs of their learners, considering automated tools, collaborative tools, and online platforms. The tools that were mentioned in the responses above have been collected and sorted into the three categories in the table below.

Table 5
Digital tools that instructors would like to retain for in-person teaching

Automated Tools (Asynchronous)	**Collaborative Tools (Synchronous)**	**Modes of delivery (Synchronous)**
Assessments	Corrective feedback (dialogical, audio, video, or written)	Break out rooms
Grammar exercises	Writing (such as in a Google Doc)	Bimodal class
	Recorded presentations (that allow everyone to watch, comment, and interact)	Flipped class
	Word clouds	Hybrid Class
	White boards	
	Padlet	

Some of the tools that the instructors referred to in this question had already been normalized pre-pandemic and can be found in the literature review, such as editing tools used asynchronously, learning and reflecting on how to teach a hybrid class (Hamel, 2017),

and doing collaborative writing activities (El Shaban & Egbert, 2018). Of these categories, the modes of delivery, and keeping elements of online class delivery, was perhaps the most unexpected, as well as the fact that the mode of delivery was also mentioned by instructors who were only somewhat comfortable with technology at the start of the pandemic.

6. Discussion

In this section, we will look back at some of the models considered in the previous sections (under Section 2.3), now in the light of the participants' responses to our research questions about their coping (RQ1), techno-pedagogical transformation (RQ2), digital competences (RQ2.1), self-perception (RQ2.2), and the practices they would like to retain (RQ2.3). This review will consist of one general model for the incorporation of technology in any field and then adapted for teaching, a model for the incorporation of technology in any teaching subject, and three models specifically for language teaching.

6.1. Models in the light of ERT

The experiences of the instructors can be summarized in the following table, which presents three profiles compiled from the results. Taken as a whole, it was evident to see three headings related to the instructors' digital competencies. There was an alignment between the instructors' digital competencies and their experiences with coping, transformation, professional development, and self-perception throughout the period.

Table 6
Results profiles

Level of comfort with technology	**High** (Beatrice, Emily Roxanne)	**Medium** (Danielle, Evelyn, Madeline, Margaret, Melanie)	**Low** (Leah, Sarah)
Initial coping response to ERT	"I wasn't in panic mode." (Roxanne)	"*Je me suis débrouillé*." (Margaret)	"I was never really technologically savvy." (Sarah)

		"*C'était un défi*." (Madeline)	
How the ERT experience has been transformative to teaching practice	'I made a deliberate choice to use less technology because of the students.' (Roxanne)	"*ça m'a amené beaucoup à me mettre dans la perspective des apprenants. Davantage, je dirais*." (Madeline)	"I don't know that there's necessarily been an evolution. I'm really still trying to take my old ways and fit them into this new way of doing things." (Sarah)
How new digital competencies were developed	"I don't see myself changed." (Roxanne)	*"webinars,...des cours...moi-même"* (Margaret)	"I ended up converting [resources] with the help of my niece." (Sarah)
Self-perception as an online teacher	'Comfortable, confident, efficient.' (Roxanne)	"*Dynamique."* (Madeline)	"Very hesitant." (Sarah)

These three profiles in fact align well with the generic profiles identified by Germain-Rutherford and Ernst in the pre-pandemic study: Dennis, the expert in everything ICT; Fatima, who was willing to try ICT; and Bogdan, who was not confident to try ICT (2015). Next, we will look at how the instructors' experiences in ERT align with some of the models of incorporating technology.

The first model we considered (in Section 2.3.1) was from the Diffusion of Innovation theory (Rogers, 2003). This was designed to describe the incorporation of technology in any field of study. The pre-pandemic study by El Shaban and Egbert (considered in Section 3.1.4 above), which used the Diffusion of Innovation Theory as a starting point to create "A Model for CALL Teacher Professional Development," assumed that instructors would have time, specialized administrative support, and formal, organized

professional development opportunities. For this reason, it does not capture the experiences of instructors in an ERT context, who must move quickly; for example, they often, whether consciously or unconsciously, had to perform the needs assessment themselves. As well, in many cases they were autonomous in their professional development: seeking out resources and implementing innovations by trial and error. As Beatrice said about her own professional development, it included the "evaluating and judicious use of technological tools." Danielle had a similar goal, when she said of her professional development: "*Ça a été d'affiner la précision de sélection d'un outil*." Recently, the Diffusion of Innovation theory was also used in a study called "The Pandemic as a catalyst for pedagogical transformation" by Luca Giupponi and Emily Heidrich Uebel from Michigan State University, which was presented at the CALICO 2022 conference in Seattle. In that work they looked at the "patterns of technology integration practices of post-secondary language instructors as they return to in-person instruction after ERT" (Slide 2). One of their research questions was to find "Which diffusion of innovation characteristics were most influential in the participants' decisions to implement their innovations?" (Slide 11). They discovered the top four factors to be compatibility "with the user's needs, values, and experiences" (Slide 13), results demonstrability (Slide 15), relative advantage (Slide 17), and ease of use (Slide 19). This seems to match the trend that was identified over the more than ten years of pre-pandemic studies in Europe, which had found that ICT training needed to focus on the "pedagogical considerations...to [help] overcome many teachers' resistance to using technology in their teaching and in developing confidence" (Germain-Rutherford & Ernest, 2015, p. 25). In my thesis study, all the instructors incorporated technology to some degree with the initial switch to ERT and the need to use an online platform to deliver their classes. When we look

at the table of instructors above in the three categories, we can see that, just as in the Diffusion of Innovation S-curve, the majority are in the middle, three are in the front (innovators/early adopters), and two are at the end (laggards). Although we did not specifically ask instructors for the factors that they considered when choosing other digital tools to use in their classes, several instructors mentioned the needs of their students, whether digital, emotional, or pedagogical, with pedagogical considerations being mentioned the most often. This is also in line with the Giupponi and Heidrich Uebel study (2022) using the Diffusion of Innovation theory.

When considering the participant responses alongside the four-step SAMR model (Smith, 2019, reviewed in Section 2.3.2), it suggests that, at least in the first few days of the pandemic, the majority of the instructor participants were thinking of the first step, Substitution. The instructors immediately needed to find a platform on which to move the classroom as a substitute for the physical classroom; the choice of platform may have been made by an institution based on security or licensing agreements, and necessitated a learning curve for the instructor, or the platform may have been chosen by the instructor based on other factors, including the ease of accessibility to her students. After that initial step, instructors needed to assess the most basic affordances or functions required in order to continue their classes and determine how to substitute those online. Those functions could include screen sharing to substitute a whiteboard, breakout rooms to substitute small group work, or the chat box to substitute a whole class discussion. Such functions that can substitute the activities of an in-person class are usually provided by conventional online meeting platforms, even if they are not designed with a language classroom in mind. Only after that initial and abrupt switch into ERT could an instructor try a different layer of

SAMR; as the days and weeks passed the language instructor may have become interested in the Modification, Augmentation, or Redefinition of tasks. For example, an instructor may have taken a closer look at the affordances offered by the institution's LMS, and then looked at other tools offered by outside developers. However, the SAMR model does not completely describe the experiences of language teachers in ERT; for example, Adaptation, Modification and Redefinition did not occur for every instructor or for every task. Another issue is that an instructor could feel, as Emily did, that she was completely able to transfer her classroom activities to the online environment, so that it was a straight Substitution with no transformation to her pedagogical practice, which already included effective time management and a variety of tasks. Other factors that could affect an instructor's progress through the Modification, Augmentation, or Redefinition steps could have been the time that she had available to learn a new tool or develop a new task. However, the model does not fully account for those instructors who already had a lot of digital tools in their toolkit, and who had already redefined the tasks; this put them in a position where they could simply select what was best for the needs of their students in the ERT context. For that reason, as part of another project with Hamel and Bibeau, we proposed adding another layer to the SAMR model to capture the ERT context. This layer, called Refining, was presented at the EuroCALL 2022 conference (Cf. Hamel & Bibeau, 2021; Hamel et al., 2022).

The TPACK (technological pedagogical content knowledge) model (Djiwandono, 2012, considered in Section 2.3.3) was designed specifically to describe the integration of technology in the language classroom, and considers the overlapping relationships between the three named knowledge elements. This model considers technology from the perspective of a CALL tool: adjacent to a human instructor and complementing his or her professional

teaching skills. The pandemic study from China (Gao & Zhang, 2020, reviewed in Section 3.2.2) considered three language instructors and their relationships and interactions with technology. In that study, one of the instructors viewed the use of technology in ERT negatively, and as a reduction of rather than a complement to her role as a teacher (Gao & Zhang, 2020). In that study, the authors concluded that the language instructor participants had acquired new digital competencies in the ERT period by understanding three factors: their students' specific needs, their own online teaching, and integrating their own traditional teaching practices (Op. cit.). The TPACK model and the conclusion of the pandemic study by Gao and Zhang harmonizes with the results from this thesis; that is, that instructors considered their students' specific needs, the instructors' own online teaching abilities (as considered through their digital competencies), and transferring, adapting, or updating their own teaching practices. However, the TPACK model does not specifically consider how instructors are able to develop new professional competencies.

Another model that was designed specifically for language instructors was the seven-step pyramid by Hampel and Stickler (2015), which we looked at in Section 2.3.4. Thinking of the revised model, it starts from the point of Basic ICT competence (0), which led to a "Specific technical competence and dealing with the constraints and possibilities of the medium (1)" (Stickler et al., 2020, p. 139); the revision of this pyramid allowed the possibility for the instructors to move up and down the steps. An understanding of what, exactly, basic ICT competence can shift in different scenarios such as when the technology develops or from institution to institution. Basic ICT competence can also be different within the various competencies that instructors are required to have, such as on meeting platforms (sharing screens and whiteboards, making breakout rooms), using LMSs (to share

documents, receive assignments, and give feedback and grades), as well as using collaborative tools such as Google Docs, Kahoot, or Padlet. As we saw in the context of ERT, at least one participant in this thesis study (Sarah) did not enter the period of ERT with 'basic' ICT competence, in the sense that her level of skill or comfort even with the existing LMS in her institution was very low. Due to the time constraints of ERT and her course, and her level of physical and mental comfort with technology, she was not able to move past that first step. In other cases, as in Hampel and Stickler's study (2015), the data showed that language instructors gradually incorporated new technology into the classroom only in the circumstances when instructors felt it was conducive to their goals for learners' outcomes. At the top of the pyramid, with "Creativity, choice, and own style (3)," we did see exactly that take place with Beatrice and Roxanne, who chose from the tools and practices that they had developed pre-pandemic, and even, in Roxanne's case, a reduction in the number of digital tools that she used due to a feeling of empathy for her students. All of this harmonizes with the label in the Hampel and Stickler revised model (2015), of "Negotiating online teaching spaces."

The Model of the pedagogical dimension of teaching for a hybrid course (Hamel, 2017) is a model that examines specific techno-pedagogical competencies used by language teachers: design, management, and intervention. This model depicts the many factors that are considered when an instructor is planning a mixed modality course, which is a unique challenge in both the physical and online classroom. These are the same elements that can be applied to the ERT context which indeed put language instructors in a mixed modality (online synchronous and asynchronous teaching). Hence, the skills needed for each of the three relationships: Teacher-Learner, Learner – Knowledge, and Teacher - Knowledge. This

model shows, attached to the Teacher, the dimension of the professional ideal, which captures and allows for

> *la perception qu'a l'enseignant de ses compétences, l'expression de ses valeurs et de ses croyances ainsi que ses objectifs professionnels. Cet idéal professionnel aura un impact sur la relation au Savoir et à l'Apprenant ainsi que sur les décisions technopédagogiques qu'il prendra* (Caws et al., 2021, p. 8).

An additional relevance of this model (Hamel, 2017) is that it is presented non-linearly. While some of the other models, for example Hampel and Stickler (2015), explain that different steps of the pyramid can be returned to, Hamel's model better represents, visually, "*un ensemble de compétences diverses à développer sans les prioriser, de manière plus holistique*." (Caws et al, 2017, p. 8). The Hampel and Stickler revised pyramid (2015), after accounting for "Basic ICT competence" lays the label "Negotiating online teaching spaces" vertically over the rest of the pyramid; this aspect of ERT is accounted for in the Hamel model (2017) under "*Organisation: Compétence de gestion*." For these reasons, one can imagine the Hamel model (2017), not only as a tool for researchers to understand how technology is incorporated in a hybrid or online language classroom, but also as a practical planning document. This could be used by individual or teams of instructors in ongoing ERT, planned online, or hybrid classes with new sets of students, new courses, or new requirements to consider, as well as for new ERT situations that may arise; it could also be used for professional development planning at the institutional, individual, or peer level, alongside the model for CALL Teacher Professional Development for example (El Shaban & Egbert, 2018), and the inclusion of the contextual dimension, makes this model (Hamel, 2017) relevant for ERT.

6.2 Adapting models to ERT

Based on the consideration of the answers to the research questions above, we can understand that the implementation of technology, especially in the first days and weeks of the pandemic, was different from a context of planned online teaching. When we revisit the competencies in the light of ERT, whether those models are specifically about the adoption of technology in language classrooms, in education in general, or in any field, we find that they do not wholly capture the experience of instructors who must adopt technology on a compressed timeline. In non-ERT settings, instructors might first encounter a new platform or digital tool in a PD session, an article or webinar, or from a colleague, and then leisurely plan how to implement it. However, during the first days, weeks, and months of any ERT period, instructors have to consider their immediate goals and outcomes in delivering their language classes, and then, on an accelerated timeline, find the platforms and tools to achieve it (MacIntyre et al., 2020). These platforms and other digital skills might be ones which instructors already know, or which they might need to learn in order to achieve their goals; the case where they need to learn new skills creates an additional time pressure in the context of ERT. The time, selection, and learning part of the process must be considered in models that describe the integration of technology in non-ERT contexts.

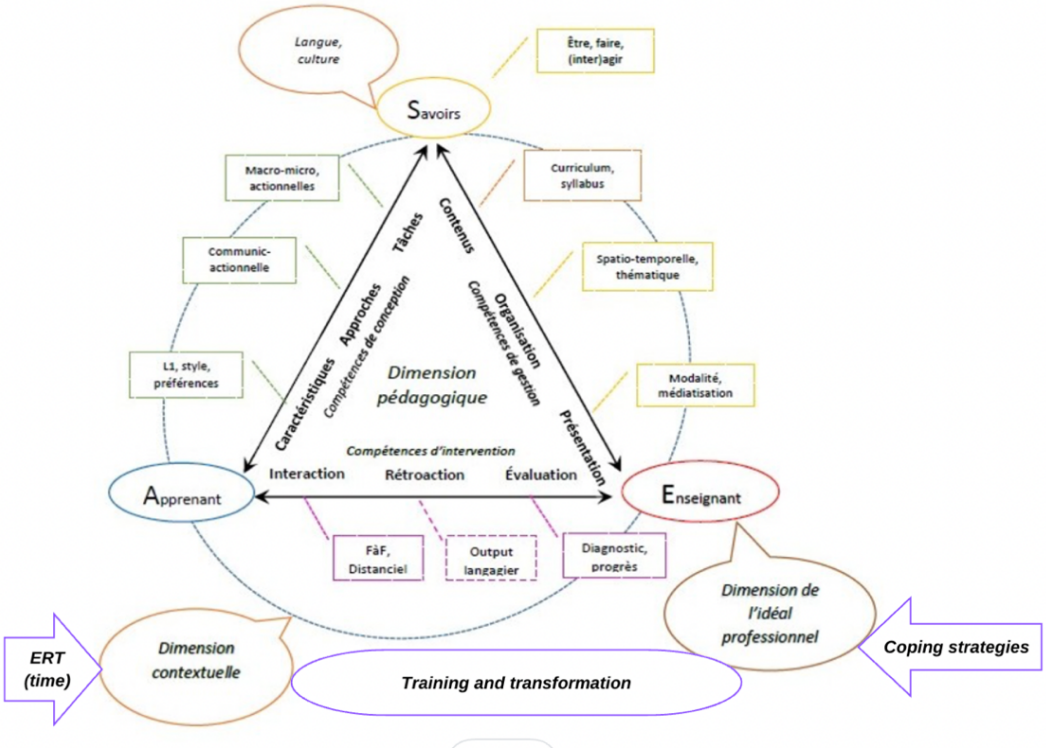
The data collected in this study and the answers to the research questions suggest that a different model, or adapted models, could be proposed to describe the shift to ERT. From the outset of this thesis, I had anticipated that the SAMR model would be chosen as the framework through which to view the instructors' responses in the interviews. With its four layers, the SAMR model can be easily grasped and remembered by all stakeholders in the field of language teaching. However, the reality was that the SAMR model does not render

or capture the complexity of the process in ERT, which is non-linear, and for which different elements of SAMR can apply to each task or tool that was previously part of an in-person language course. The very nature of ERT means that the instructor will have a limited amount of time to choose or learn a new technology. The interview responses highlighted that many instructors deepened their knowledge of tools that they already knew. Another important element was the instructors' own needs assessment of the class and subsequent identification of the online functions required to achieve that, which could include, for example, an assessment of the students' particular pedagogical, social, and technical needs; these elements are depicted in Hampel and Stickler's revised model (2015) and Hamel's model (2017); additionally, Hamel's model also targets the specific skills that are needed for techno-pedagogical tasks.

We felt that the model proposed by Hamel (2017) for a mixed modality course was the best suited to describe the ERT context in more depth, as it captures the management of an online platform for multi-modal delivery and includes a comprehensive representation that goes beyond digital skills. One factor that could be added to the model in order to relate it more closely to the ERT context is that of time: in other words, the instructor being under a time pressure while still needing to account for all the factors in the pedagogical and contextual dimensions before shifting a fully in-person course to a fully online course, especially in the initial days. The aspect of time in ERT was a key stress factor for instructors and should be taken into account in a proposed model. In the model for a mixed modality course, a block for time could be added under Management skills or alternatively, join the complete circle, which is labelled *Dimension contextuelle*. The contextual dimension "*prend en compte l'ensemble de la situation pédagogique et invoque aussi le contexte plus*

large, soit celui de l'institution et de la communauté" (Caws et al, 2021, p. 8). To the dimension of the professional ideal can be added "Coping Strategies." And between the two is "Training and transformation." These three proposed additions have been added in purple to the bottom of the model below.

Figure 7
Hamel's model (2017) with proposed additions for ERT



This model also takes into consideration an instructor's stance as an online professional, such as her ideals, her self-perception, and her goals for future professional development. This can be done formally by a self-evaluation or critical self-reflection about

her own competencies, skills, and needs. One way that instructors could engage in that reflection is by recording, or using the recording of, a portion of their own teaching and then watching it back, perhaps with a colleague or critical friend, and analysing their teaching against a grid that has been developed or adapted for such a purpose. Guichon and Tellier (2017) refer to this process as 'retrospection,' a portmanteau of retroactive introspection. A future task would be to make more formal modifications that capture the ERT context and include digital, pedagogical, time, and emotional elements and considerations.

6.3 Limitations and contributions

This thesis study had three clear limitations to be acknowledged at this time: the lack of focus on the students' experience, the small number of participants, and the increasing amount of literature in the field of ERT.

The first limitation is that this study did not include any voices from the students' side of the screen. While their experience is recognized as fundamental to understanding the development of digital practices from the onset of and during the pandemic period, the decision not to include students' experiences in this study is deliberate and conscious in order to focus the scope of the project on the language instructors' development of their own professional practices. Although it has not been considered here, it is understood that studies in the growing body of literature on the experiences in language classrooms during the pandemic are emerging which centre on the student experience as language learners (Back et al., 2022; Dewaele et al., 2022; Ducasse, 2022; Yeh et al., 2022). However, from an analysis of the word clouds that were generated from the transcripts of each interview, as well as by language and in total, in this corpus, it is evident that every language instructor had her

students and their needs front and centre. From the interviews, it is also clear that the instructors' decisions to use, or not use, specific types of technology in their language classrooms were often or nearly always taken with their students' needs and profiles in mind. Another angle, which has not been explored in this thesis, is the autonomy that online learning offers to students with learning differences, whether those are of a physical or neurological nature, and which as a result can be empowering; for example, to adjust the font size or the audio, to go back to recordings, or to maintain students' privacy and comfort by keeping their own cameras off. Hence, it would be valuable to revisit the material in this thesis in the light of recent or emerging studies that focus specifically on the experience of students and align that with the efforts of the language instructors.

Ten language instructors were interviewed, which has created a corpus of nearly six hours of audio interviews in two languages for this qualitative study. More could be interviewed in order to compare experience during the pandemic. For instance, it would be interesting to know if teachers of other languages had different transformational experiences, professional development, or digital affordances that they wish to continue using. It would also be worthwhile to go deeper in comparing the experiences across geographical regions, for example with language instructors in Europe and the United States, as well as the experiences of teachers working with children. It is hoped that this material can be revisited, perhaps in the light of the other studies that are being published on the experiences of language instructors from around the world, and new research questions that emerge from reviewing this literature.

Considering the growing body of research and literature that is emerging from the experiences of instructors around the world, and specifically language instructors starting

from the switch to ERT as well as over the course of the pandemic, it was not feasible to include every study as it emerged. This is why it was decided to have a cut-off date for the literature that was included in the review (Section 3.2), which was studies that were conducted up until the end of 2021.

This thesis shows that instructors were able to cope with the initial switch to ERT and the ongoing need to remain teaching online. Some experienced anxiety during the process, but that can be attributed to the necessarily short timeline of ERT. Although one instructor did not wish to continue teaching a language class online, and a few others expressed that teaching a language online was not their preference, all the instructors who we interviewed achieved the result of moving their language classes online. Going forward, if there is another need for ERT, instructors would already have this initial experience from the start of the Covid-19 pandemic on which to build. In other words, a future shift from in-person to online teaching would not require such a dramatic change in the use of technology as the one that instructors already successfully navigated in 2020.

Looking beyond the scope of this thesis, it would also be interesting to compare the professional development experiences of the 10 French language instructors in this study, who were in universities in Ontario, Quebec, and Brazil, with those at public schools or in other regions of the globe, in order to identify potential differences in the way that instructors are trained and the ways that they look for further professional development. For example, a study of French immersion teachers in Ontario found feelings of alienation during ERT:

> the teachers seem to express feelings of disconnect from their schools and boards yet note continued efforts on their part to try to collaborate and connect with their colleagues...These FSL teachers' professionalism and ability to adapt to teaching

> online were key to navigating the realities of the pandemic, yet their technology-focused competencies did not alleviate the persistent challenges they faced in their context (Smith and Arnott, 2022, p. 105).

Or considering language instructors at the university level in Finland, for example, a recent study on their professional development highlighted that their training always includes a pedagogical and digital component. While the Finnish universities provided a lot of support and top-down professional development in the switch to ERT, it was unpaid time, a situation which was different from their colleagues in other university subjects. The same study noted that there is no minimum standard of digital literacy that is expected for instructors when they take up their posts (Nguyen, 2022).

While it is to be hoped that the research summarized here will make its own small contribution to the body of literature available from the switch to ERT and developing practices for language instructors during the pandemic, it would certainly be interesting to revisit the material in the future in the light of other research that continues to emerge from around the world.

Hence, despite its limitations, we believe that thesis adds to the growing body of knowledge about the experiences of teachers, and more specifically, of language instructors, during ERT and the following year and a half of online teaching. It sheds light on the emerging qualitative studies by allowing us to hear the experiences of French language instructors at the university level, from coping to transformation, self-perception and retention in their own words. Additionally, it looked at how they achieved this feat, by examining their professional development from a professional didactics point of view and valuing the time they invested on their own and on the job. Finally, it considered which

model of digital competencies could best describe the ERT experience and proposed some modifications to an existing model.

7. Conclusion: Leaving ERT for planned online learning

The use of technology in the switch to ERT, which in the Northern Hemisphere took place in March 2020, has been unprecedented in the history of human education. Although many classes had already implemented features of CALL prior to the COVID-19 pandemic, instructors had to fully move their classes online, in some cases actually overnight. ERT must, by definition, be readily available when needed in a time of crisis (Jin et al., 2022). The availability of ERT at the start of the global Covid-19 pandemic meant that institutions had to pivot quickly, which situation created the need for instructors to consider or reconsider their use of online meeting platforms, LMSs, digital tools, and tasks. After two and a half years of the pandemic, at the time of this writing, it seems difficult to imagine an educational scenario that would strictly go back to in-person, paper and pen models without taking advantage of digital affordances, hybrid classes, or more planned online teaching.

Even with a return to campuses, we see the continued need for online classrooms, as well as the need for adaptation to different ERT scenarios. For example, a study earlier this year focussed on Ukrainian students learning Swedish in preparation to migrate to Sweden. The study found that many of the students lacked computers as they "left their laptops at home while fleeing to other parts of the country" (Berbyuk Lindstrom, 2022). The new situation meant that their instructor had to adapt the class to using smart phones only. Additionally, poor internet connections, air raid sirens, and other security concerns made many of the students reluctant to turn the camera on or even to speak during the class (Berbyuk Lindstrom, 2022). This is just one example that illustrates the need for continued

flexibility, adaptation, and professional development for language instructors should the need for future ERT arise.

ERT or planned online classes could also be the best option for students displaced by summer wildfires or other extended weather events, as well as a preference for the convenience offered to students juggling other aspects of their lives such as jobs, family responsibilities, illness, or storms. As well, online classes may have benefits by saving the time, cost, and environmental aspects of commuting and gathering in a physical space only for the purpose of learning.

While most language instructors and teacher trainees have now bridged the gap between an analogue, in-person class and an online class, some instructors are still hesitant about teaching online, for various reasons. This is in line with the trend that Hampel and Stickler identified in their years of pre-pandemic research, where they found that "many teachers still use the technology in predominantly 'old' ways," (Hampel & Stickler, 2015, p. 65), although perhaps now we can suggest updating the word "many" to "some." This thesis shows that instructors were able to cope with the initial switch to ERT and the ongoing need to remain teaching online. Some experienced anxiety during the process, but that can be attributed to the necessarily short timeline of ERT. Although one instructor did not wish to continue teaching a language class online, and a few others expressed that teaching a language online was not their preference, all the instructors who we interviewed achieved the result of moving their language classes online. Going forward, if there is another need for ERT, instructors would already have this initial experience from the start of the Covid-19 pandemic on which to build. In other words, a future shift from in-person to online teaching would not require such a dramatic change in the use of technology as the one that instructors

already successfully navigated in 2020.

For the most part, instructors' self-perception of their online teaching aligned with their technological competencies. However, one instructor (Beatrice), who had a high level of technical competency, still said that she did not prefer to teach French online because she felt that in-person is the best medium for language classes. Another teacher with a high level of technical competency (Roxanne), initially said that she felt like "a fraud." Sarah, with a low level of digital competency, said that after a year and a half she was still "very hesitant" to teach online. Interestingly, a recent study from the students' point of view suggested that instructors may be too hard on themselves in their self-evaluation, as students generally held positive views of their instructors' efforts within the constraints of ERT (Hatipoğlu et al., 2021). The study found that

> students' evaluations of L[anguage] T[eacher]s' computer literacy and online teaching skills mainly were positive…; teacher roles mostly remained the same as in the face-to-face teaching environment; and despite the hardships of the COVID-19 crisis, LTs tried to support their students' learning by being easy to reach and regularly prepared good quality materials that they shared with their students (Hatipoğlu et al., 2021, p. 124).

For the future, it could be helpful for instructors, especially those with a lower self-perception of their effectiveness in online teaching, to be aware of the perception and appreciation of students. It would also be interesting to do future studies in the same class, in order to consider the students 'and instructors' perception of the instructors' abilities.

For some instructors, the redefinition opportunities of ERT were transformative. Danielle's comments were specific about many transformations, at least some of which were experienced by a variety of instructors. Speaking about the possibility of assigning "*questionnaires de révision, des quiz, des travaux de révisions des tâches,*" as asynchronous

activities that can be automatically corrected, thereby saving the instructor time, as well as being able to be repeated by learners as many times as they want, Danielle commented "*ça change complètement la donne parce que le temps en classe, on va vraiment se concentrer sur l'acquisition et sur les pratiques d'interaction.*" Looking even further, Danielle proposed further redefinition at the level of the materials for the course —"*Le bon vieux modèle du livre avec le CD-ROM, c'est fini là?*" — and looked forward to setting up a digital book that would incorporate all the exercises, audio, and video for a course: "*Je pense que c'est un peu l'avenir et donc le fait d'avoir une modalité de travail hybride qui est offerte par la technologie…La pandémie m'a un peu donné l'excuse de pouvoir le mettre en place sans choquer mes collègues*."

Regarding the transformation of their teaching practices in the context of ERT, all the instructors based their changes on the particular needs of their students, in combination with their own knowledge of, and level of comfort with, technology. Instructors sought out new tools or exploited their use of tools that they were already familiar with. While instructors who were the most comfortable with technology, who had the largest tool kits as it were, could be selective with what to use in their classes, instructors with some degree of comfort with technology seemed to draw from the widest range of resources to support their own professional development, including trial and error. Instructors with the lowest levels of digital competencies going into ERT were the most likely to rely on help from people in their network. This is valuable information for language departments that traditionally focus on top-down formal professional development sessions. To start with, they can acknowledge the efforts of motivated instructors who turn to available resources on digital tools and tasks, and invest their own time and effort in reading, watching, and learning by trial and error. It

also suggests that language departments should appoint a specific resource person, who would have as part of their duties the mandate to conduct needs analysis with instructors who are less comfortable with technology, in order to understand which aspects of their teaching practice they find most difficult to achieve online, and then help to build the competencies and comfort needed to develop that teaching practice. A specific resource person would be someone from outside an IT department because it is necessary to have the knowledge of teaching languages online. Having this responsibility as part of one instructor's specific duties would mean that an instructor would not feel overwhelmed with extra time spent helping colleagues, and at the same time less tech-savvy colleagues would feel comfortable approaching him or her with their concerns. Furthermore, it would be interesting to research whether those instructors who are self-motivated to search out training resources are more hesitant to contact a colleague, or vice versa.

Overall, there is no one digital affordance that instructors identified that they wish to keep. Even though instructors spoke of many digital affordances that they used over the course of ERT for eighteen months, the number of affordances that they named for retaining was much smaller. Some appreciated the affordances of teaching online in general and wish to retain that. The experience led some to completely reconsider how they plan and deliver a class and course, and it would be interesting to revisit these instructors in two years and, considering the evolving situation with online, in-person, and hybrid instruction, interview them again to determine what they actually kept. Regardless of an instructor's individual experiences, the lessons of the pandemic for the online language classroom will not soon be forgotten. Perhaps Danielle summarized the situation best: "*la pandémie nous a formée,*

*nous a forcés à travailler un peu plus, mais ce n'est pas du travail perdu, donc c'est un travail qui va permettre d'être réutilisés. ... ça a été formateur pour tout le mon*de."

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9. Appendix

Interview Protocol

We contacted potential research study participants who had provided their email for follow up, in the context of their participation in the ongoing study on digital written corrective feedback during the pandemic. Following their confirmation to participate in semi-directed interviews, we scheduled 60-minute online sessions in October 2021. I asked my questions first, followed by my colleague Louis-David Bibeau will be asking specific questions about their digital written corrective feedback practices. We used the following consent and question protocols:

Request for consent

We obtained the consent of the participants in the audio recording. The research did not involve any risks for the participants. Louis-David Bibeau read the following text and then asked the participants to verbally confirm their consent:

"You are invited to participate in a research project on language teachers' digital practices in times of pandemic. It is understood that your participation is completely voluntary and that you remain free, at any time, to end your participation. All information collected during the course of the research project will be kept strictly confidential. In order to preserve your identity and the confidentiality of this information, the interview will remain anonymous. Interviews will be transcribed from the audio recording, and videos will not be used for research purposes.

Do you understand the project and the implications of your participation? Do you agree to have this interview recorded? Do you agree to confirm, on this recording, that you give your consent to participate in the project?"

Interview guide

Part 1 : Language teachers' digital practices in times of pandemic - an overview (

1. What is the most important thing to you / what do you love the most about teaching [the French or English language]? (*Ice-breaker question*)
2. Thinking from March 2020 when classes first went online until now:
    1. How have your day-to-day language teaching practices changed/evolved during the Covid pandemic? [Spring 2020, Fall 2020, Winter 2021] - *What digital competencies have you developed? teaching tasks, socialization, pedagogical preparation, management and intervention (inc. evaluation)*
    2. How do you feel about yourself as an online language teacher? - *What is the perception of the successes and the challenges?*
    3. Are there any digital teaching practices you want to keep post-pandemic?
    4. What were the formal and informal opportunities you had for professional development?

Part 2: Language teachers' digital WCF practices in times of pandemic (Louis-David Bibeau, RA, SSHRC project MyAnnotator) - three to five questions.

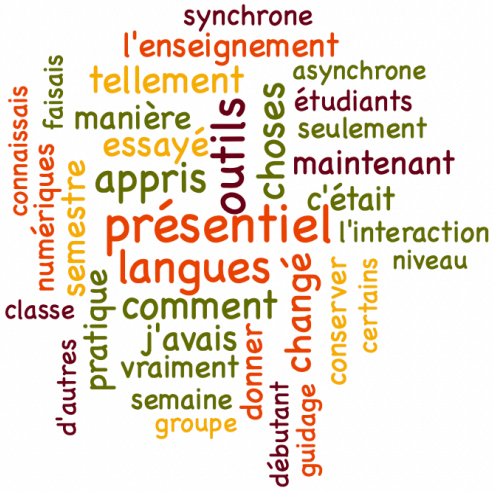
...

Word clouds

Danielle

Evelyn

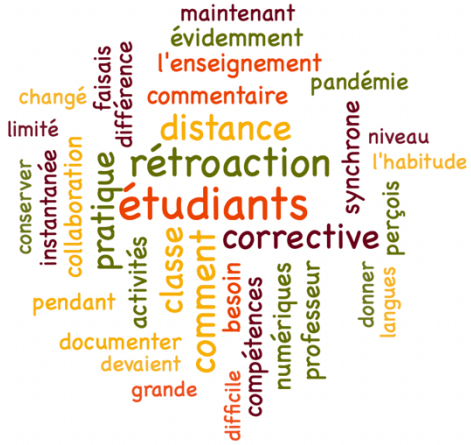
Emily



Madeline

Margaret

Melanie



Beatrice

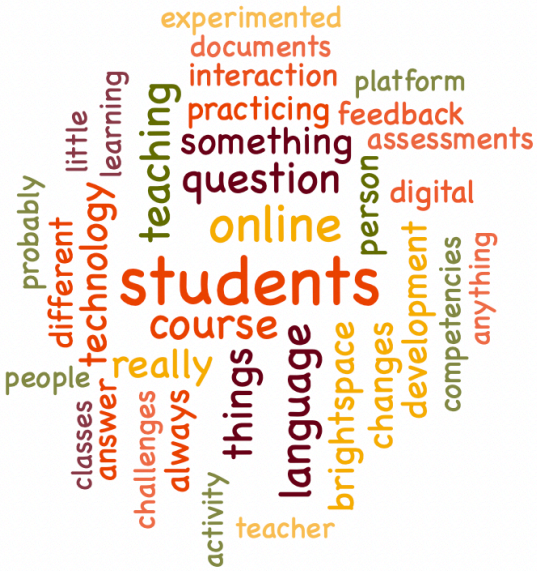
Leah

Sarah

Roxanne

Interviews in French (n = 6)

Interviews in English (n=4)



All interviews