ESL Teachers' Perceptions of Using Technology in Their Teaching

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LING 8640 – Applied Linguistics Research

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December 12, 2012

Abstract

Technology has emerged as a useful tool in second language teaching, yet its role in the classroom is a debatable issue amongst educators. This paper reports on the findings of our study investigating whether there are differences between novice and experienced native-English-speaking ESL teachers working in the United States in terms of their perceptions on using technology in their language teaching. Data were collected using an online questionnaire consisting of 35 Likert scale and open-ended questions. Results showed that there were statistically significant differences between novice and experienced teachers as well as between age groups on 5 out of 35 items. The results of this study shed light on the differences between various groups of ESL teachers who chose to implement or avoid technology in their teaching. The implications of this study can influence the development of teacher training on incorporating technology into language teaching.

Keywords: perception, technology, novice and experienced teachers

ESL Teachers' Perceptions on Using Technology in Their Teaching

Since the introduction of computers into the classrooms in the 1980's, a debate has been ongoing about the role of technology in learning and the job of teachers in implementing technology. Technology has become a remarkable presence in the field of education (Arnold & Ducate, 2006), but questions remain as to how teachers are using technology to optimize students' learning.

Research into the field of CALL (Computer-Assisted Language Learning) has followed current trends in second language acquisition (SLA). In general, the field of language teaching in the 1960s and 1970s was dominated by behaviorist models of language learning and therefore technology at that time was seen primarily as a tool for drill and practice (Fotos & Browne, 2004). By the early 1980s, the communicative approach to language teaching had become popular and therefore, computers and the Internet were then seen as tools for providing language learners with authentic communicative interaction with native speakers (Brett & Gonzalez-Lloret, 2011). By the 1990s, the view of technology had once again evolved, and it was seen as a facilitator for "motivation, critical thinking, creativity, and analytical skills" (Fotos & Browne,

2004, p. 5-6). As task-based language teaching has come into popularity, technology is now an even more viable tool for helping students contend with tasks that promote language learning (Warschauer & Healey, 1998).

In the 21st century, the use of technology in teaching has become more important because teachers may feel pressured to keep up with technological advances and with the technological knowledge of their students (Arnold & Ducate, 2006). Young learners today have more access to information and more tools available to them to manage their own learning than ever before. Reinders (2009) suggests that "the challenge for teachers will be more one of helping learners develop the skills to deal successfully with the increased control and independence that technology demands" (p. 236).

Literature Review

Technology has become ever more integrated into our daily lives due to the technological changes of the 20th and 21st centuries. The development of the field of CALL and the implications of technology integration for educational purposes has become an important part of the field of second language teaching. As technology continues to advance, educators will likely encounter and need to contend with technological changes that can positively influence language teaching and learning (Arnold & Ducate, 2006). Borko, Whitcomb, and Liston (2009) state that there are two main issues with using technology in the classroom: instability and unreliability. Because technology is evolving at such rapid speed, it often comes and goes before users are able to fully integrate it into teaching and learning. Such innovation can be challenging because it "ensures that the knowledge required to use digital technologies is never fixed" (Borko et al., 2009, p. 4). Technology can also be unreliable. Given that technology is constantly evolving, there can often be "bugs" in new software that must be fixed, causing frustration for language

educators. Donaldson and Haggston (2006) argue that "while schools may have easy access to technology, both its newness and rapid evolution make it difficult for instructors to meet the challenge of effectively incorporating these technologies into the language curriculum" (p. 1). Since there are so many challenges facing language teachers in integrating technology into teaching, it is no wonder why so many teachers choose not to use technology at all.

Previous research is abundant on the effectiveness of using technology to help learners develop fluency and accuracy. Current CALL theory suggests that technology can have positive learning outcomes, such as facilitating learner autonomy (Blin, 2004), promoting motivation (Evans, Mulvihill, & Brooks, 2008), and potentially even increasing satisfaction and self-confidence in the language classroom.

Despite positive learning outcomes with using technology, hundreds of thousands of teachers have yet to put into practice the use of technology in their classrooms. Although there have been plenty of innovations in recent years in terms of technological development, Van den Branden (2011) states that "few of them have been completely institutionalized in daily classroom practice" (p. 659). Beyond issues of access, why is there a disconnect between research and practice when it comes to technology integration? One possible explanation is that teachers have not been sufficiently convinced that the positive impacts of using technology outweigh any potential challenges they may face. Teachers are simply not fully educated on what Borko et al. (2009) call the "transformative power" of technology integration (p. 3). McMeniman and Evans (1998) assert that new evidence about positive influences of new technologies on learning can encourage teachers to adopt these technologies in their teaching. Thus, language teachers need to see evidence that technology is useful for accomplishing certain learning goals and technology is helpful for their specific students in order for them to start incorporating such

tools into their teaching. Another important explanation for the lack of technology integration by language teachers is that they may not be sufficiently trained on how to implement technology into their teaching. Lack of training translates to teacher discomfort and avoidance with exploring and implementing technological tools in the classroom (e.g., computers and the Internet).

As Van den Branden (2011) states, "What language teachers do in the classroom is inspired by what they know, believe, and think about the different aspects of their profession" (p. 663). Therefore, teachers' perceptions about the effectiveness of using technology largely determine to what extent they will take up the task of implementing such technology. Technology expertise can make teaching and teacher-related tasks easier and more time efficient (Arnold & Ducate, 2006). However, not all teachers may hold the same beliefs about using technology in their teaching.

Investigations into teachers' perceptions of technology and how they make choices about using technology in their teaching could impact the field of CALL field of CALL. Such studies could influence not only the direction in which the field heads, but could also have pedagogical implications for teacher training in CALL. Given that integrating technology into language teaching can be a complex and challenging process, it is no wonder that so many teachers choose not to take up the challenge. Borko et al. (2009) state that "the rapid growth of digital technologies, coupled with the complexity of classroom life, increases both the potential transformative power and the difficulty of problems" surrounding technology integration into language teaching (p. 3). Digital technology is constantly changing as new developments are made. These changes can result in confusion and frustration for teachers trying to develop curricula using technology. Technology can be used in a variety of ways; however specific tools

are often more effective for specific tasks (Koehler & Mishra, 2009). Finding those matches between tool and task can be overwhelming to a novice technology user.

Another important factor that influences whether a teacher chooses to use technology is the context in which a teacher is working. If the administration is unsupportive or restricts the use of technology in the classroom, then the teachers' chances of using technology will decrease. Given the challenges of technology integration, it comes as no surprise that some teachers "do not appreciate its value or relevance to teaching and learning" (Koehler & Mishra, 2009, p. 62).

Age may be another potential factor that determines whether a language teacher chooses to use integrated technology in her curriculum. Prensky's (2001) conceptualization of *digital natives*, or those who have grown up in an atmosphere saturated in digital technology, suggests that digitally native teachers are more likely to use and integrate technology into their own teaching. There are many factors that contribute to the pedagogical decision-making processes about whether to use technology or not, including the context in which a teacher is working and how the administration feels about technology. However, for the purposes of this study, we've chosen to focus only on the differences between novice and experienced language teachers and the variable of age.

The differences in pedagogical practices between novice and experienced teachers have been heavily researched in the field of education and applied linguistics. Previous research has found that there were significant differences in the ways that novice and experienced teachers make decisions in the language classroom (Leinhardt & Greeno, 1986) and the ways in which they recognize and contend with learners as individuals (Johnson, 1996).

Adding technology into the mix, there are various studies that point out the pedagogical differences between teachers who are comfortable with technology and use it in their teaching

versus those teachers with lesser abilities in implementing technology. A study by Meskill, Mossop, DiAngelo, and Pasquale (2002) used interview data to qualitatively investigate the differences in "technology talk" between ESOL teachers that were expert and novice technology users. Despite all of the teachers having taken courses in instructional technology, the interview data results showed there were stark discourse differences relating to teachers' beliefs and use of technology in their teaching. Some of the important differences that Meskill et al. found were that expert teachers spoke about technology as being inanimate objects or "tools" to guide teaching and learning while referring to themselves and the students as the doers. Novice teachers tended to anthropomorphize computers and referred to technology as the *agent* of teaching; they credited learning and teaching to the machine rather than to the students and the teacher. The two groups differed strikingly in their views of the power and usefulness of technology in the classroom. Expert technology teachers viewed technology as a way of empowering learners, while the novice technology teachers were preoccupied with classroom management and used technology as a way of managing the behavior of the learners. The focus of the instruction was another important difference revealed by Meskill et al. They determined that novice teachers emphasized the *product* that they expected their learners to produce, whereas experienced teachers focused on whether learners understood the *process* by which to get to the final product.

Other studies looking at technology and teachers' perceptions have focused on the knowledge and skills that teachers need in order to effectively integrate technology into their teaching (Koehler & Mishra, 2009; Lim & Chai, 2007). A case study by Lim and Chai (2007) investigated six math, English, and science teachers from Singapore primary schools that reported high levels of computer integration. Interviews with the teachers included discussions of

their beliefs about education and "the affordances of computers for teaching and learning" (p. 815). The interviews revealed that almost all of the teachers had strong pedagogical beliefs towards teaching that is output-focused and saw computers as tools for mediated learning. Yet, after conducting classroom observations the researchers found that the lessons and the use of computers took a traditional approach. Computers were mostly used for information gathering or drill-and-practice. Lim and Chai's findings suggest that despite teachers having certain pedagogical beliefs, their practice is often in contradiction with those beliefs. They state that "until teachers' pedagogical beliefs are transformed, there may not be changes in the way they use computers in the classroom" (p. 808). Their findings reveal that teachers' perceptions of the usefulness of technology as a tool for learning is only one piece of a complex and dynamic puzzle as to why teachers use or avoid technology in their teaching.

One of the critical questions that has been posed by researchers including Chappelle and Hegelheimer (2004) is what are the main skills that language teachers need in order to participate in "technology-related teaching issues?" (p. 300). Building on Shulman's (1986) idea of pedagogical content knowledge (PCK), researchers Mishra and Koehler (2006) developed the concept of technological pedagogical content knowledge (TPCK) as a way of explaining the knowledge teachers need to integrate technology into their teaching. TPCK is used as a way of explaining the complexities of integrating knowledge of content, pedagogy, and technology into the task of teaching. The TPCK framework was designed to investigate thought processes and knowledge involving technology in relation to teachers' actions in their teaching. Reinders (2009) points out that a teacher's level of technological expertise could involve "being able to first, use a certain technology; second, being able to create materials and activities using that technology; and third, being able to teach with technology" (p. 231).

Research on teachers' beliefs about their own competencies, self-efficacy, or confidence with using technology has also been important in looking at teachers' decision-making processes of using technology in the language classroom (Wang, Ertmer & Newby, 2004; Abbitt & Klett, 2007; Lee & Tsai, 2010; Kessler & Plakans, 2008; Hegelheimer, 2006). Lee and Tsai (2010) designed a new questionnaire based on the TPCK framework (Koehler & Mishra, 2006) that included Web pedagogical content knowledge (TPCK-W). They conducted a study in which they surveyed elementary to high school teachers in Taiwan about their perceived self-efficacy in terms of TPCK-W and using the Internet in their language teaching. Their findings suggested a strong correlation between teachers' self-efficacy in terms of TPCK-W and their attitudes towards web-based pedagogy; teachers with more experience using the web tended to have high self-efficacy while teachers with less experience using web based pedagogy were likely to have low self-efficacy in terms of their TPCK-W. A study by Kessler and Plakans (2008) investigated how teachers' confidence with CALL relates to their integrated technology practice in the language classroom. The researchers logged the use of CALL by seven language teachers at universities in the United States and then followed-up with interviews to examine their confidence with CALL. Results suggested that high confidence with technology did not necessarily equate to high levels of integrated technology use in the classroom. Such findings reveal the complexities at play in regards to teachers' decisions about whether to use technology in their language teaching.

Much research has been done on teachers' beliefs about their own self-efficacy with technology integration (Abbitt & Klett, 2007) and how teachers' discourse mirrors their beliefs about technology (Meskill et al., 2002). Other research has been done on the types of knowledge needed in order to effectively use technology in language teaching (Mishra & Koehler, 2006;

Lee & Tsai, 2010). However, how novice and experienced teachers differ in their perceptions on technology in language teaching have not been as well researched. Thus our study attempted to address this gap in the field of CALL by surveying current groups of ESL teachers' perceptions on using technology.

Rationale

Our research is heavily influenced by recent trends in CALL and more specifically, the ways in which technology is currently being used by in-service teachers in their language classrooms. From this general interest came a desire to learn about teachers' *perceptions* of using technology in the classroom. As researchers, we sought to determine whether teachers believe that using technology is an effective tool for learning or if they find technology integration to be too complex to use with language learners. We wanted to determine if there was a statistically significant difference between native-English-speaking novice and experienced ESL teachers working in the US in terms of their perceptions of using technology and also whether the variable of age plays a role in the differences between novice and experienced teachers in our study. Given the relationship between teachers' beliefs and their classroom decisions about using technology, we feel it is important to investigate how current full-time teachers feel about the use of technology in the language classroom and what factors influence their tendency to use or avoid technology. In our research, the survey questions were designed to determine if there were differences between various groups of ESL teachers in their perceptions on using technology in language teaching.

Research Questions and Hypotheses

The primary research question for our study is: *Do novice and experienced native-English-speaking ESL teachers working in the United States differ in their perceptions on using technology in language teaching?* A second research question asks: *Does the age of the ESL teachers play a role in their perceptions on using technology in language teaching.*

Based on our review of previous research, we hypothesize that there will be a statistically significant difference between novice and experienced native-English-speaking teachers in terms of their perceptions on using technology in the classroom. We also hypothesize that there will a statistically significant difference between age groups in terms of their perceptions on using technology in language teaching.

Key Constructs

For the purposes of our study we have operationalized *digital technology* as mechanical tools used to aid learning through obtaining information and/or achieving goals. In our study when we refer to technology we are referring to the following technological tools: computers, Internet, recording devices, LCD projectors, TV's and DVD players, smart boards, tablets, E-Readers, and cell phones.

We have operationally defined *novice* teachers as any teachers working full-time for less than 3 years, while *experienced* teachers are any teachers working full-time for 3 years or more. We have operationally defined *perception* as: "a way of regarding, understanding, or interpreting something" (New Oxford American Dictionary, 2005). In this case, we are interested in how ESL teachers regard, understand, or interpret using technology in their language teaching.

Method

Participants

Our research participants were 85 native-English-speaking ESL teachers who are currently working in the United States. We chose this group of teachers because we are studying in the United States and have access to this population of teachers. We had two control variables in our study: the native language of the teachers and the country in which the teachers were working. By focusing on the specific population of *native* speaking ESL teachers that were currently working in the United States, we were able to avoid any confounding variables that differences of first language or country in which a teacher is working may have had on teachers' perceptions of using technology.

In order to guarantee that we had participants who represented our target population, we included demographic questions about whether the participants were native English speakers and which state they were currently working in. Since our research questions were looking at the differences between novice and experienced ESL teachers, we also included a question that asked how long the participant had been teaching. The demographics section of the questionnaire also included questions about age since we hypothesized that this variable could have influenced participants' perceptions on using technology. Taking advice from Dornyei and Csizer (2012), who state that "starting the questionnaire with a rather forbidding set of personal background questions is off-putting" (p. 78), we chose to put our demographic questions at the end of our survey.

Instrument

Our instrument for gathering data was a self-designed questionnaire consisting primarily of 35 Likert scale items, each of which was followed by a text box where participants could

respond with their open-ended comments (see Appendix A for the complete questionnaire). We chose to use a 9-point Likert scale instead of the typical 5-point scale because "wider scales encourage more precision in rating and thus approach equal intervals" (Hatch & Lazaraton, 1991, p. 570). Responses to the Likert scale items were required; the participants had to answer them in order to move on to the next item, whereas the open-ended comments were optional. However, we asked participants to clarify their answers or share experiences with open-ended comments on at least three questions. The Likert scale items asked participants about their perceptions on the effectiveness of using technology, the difficulties associated with teaching with technology, and their comfort level with using technology in their teaching. Researchers carefully constructed the survey questions to guard against revealing our own biases.

Following the Likert scale items was a question where participants were asked which technological tools they were using in their language teaching. The participants were then asked to rate how often they use each technological tool using a 9-point Likert scale between "never" and "3 or more times per week."

The questionnaire was sent electronically to ESL teachers via email through our personal email contacts, local professional organizations (e.g., TESOL and CATESOL), a listserv at a graduate TESOL program in Washington, D.C., the United States certified ESL centers directory, and the Facebook pages for MIIS TESOL/TFL and MIIS incoming 2012 students. We also asked one of our MATESOL professors to send the questionnaire to her ESL teacher contacts. Although the questionnaire could not reach ESL teachers who were working in all regions of the United States, we were able to get responses from teachers working in 19 states.

Questionnaire responses were automatically recorded using the online questionnaire program Google Forms. This questionnaire format allowed us to efficiently collect the results

from the participants. We chose to use Google Forms because unlike other online questionnaire sites, this format is free and does not restrict the number of questions you can ask. Google Forms also allows multiple authors to modify the questionnaire at the same time, which allowed us to collaboratively draft and revise the questionnaire.

Data Collection

The questionnaire was pre-piloted by a TESOL instructor who is a technology expert as well as a professor in the graduate TESOL department at the Monterey Institute of International Studies (MIIS). Based on their feedback, the questionnaire was revised to yield information to help us answer our research questions. Following the pre-piloting stage, the questionnaire was then piloted on sample members of the target population: two native-English-speaking ESL teachers in the Intensive English Program at MIIS. These teachers who piloted our questionnaire provided valuable insights into the surveying process, which prompted further revisions to our questionnaire, resulting in its final version.

Results

Our research has been conducted according to the psychometric tradition (survey research) in the ex-post facto class using the factorial criterion groups' design. For the independent variable there were two levels: novice and experienced. The dependent variable was perceptions about using technology in language teaching. Age was a moderating variable in our study. We split the ages of the participants into two groups (29 and under and 30 and above) in order to more easily work with our data. Although we collected both qualitative and quantitative data, for the purposes of this study, we only analyzed the quantitative data. We first calculated the descriptive statistics to find the mean, median, mode, range, and standard deviation for the four main groups (novice, experienced, age 29 and under, age 30 and above). We then squared

the standard deviations of each group to calculate the variances for each of the 35 Likert scale items (see Appendices B, C, D, E, F, G, and H for charts of the descriptive statistics). We then created frequency polygons for each of the 35 items, which revealed that our data were not normally distributed. While most of the items were obviously skewed, there were three items that we thought could possibly be normally distributed (numbers 3, 11, and 12). We used the Shapiro-Wilk test, which tests normality, to determine if these three items were normally distributed. The results showed that the three items were not normally distributed. Although we had originally intended to use two-way analysis of variance (ANOVA) to determine if there were differences between the novice and experienced groups while also looking at the moderating variable of age, our data did not meet the assumptions of normal distribution that ANOVA requires. We instead used the two-samples Wilcoxen test (also called Mann–Whitney U), which is a nonparametric test for data that are not normally distributed (see Appendices H and I). We set alpha at 0.05 given that it is standard in linguistic research (Hatch & Lazaraton, 1991).

The two-samples Wilcoxen statistic tests the truth of the null hypotheses, but does not determine the directionality of the differences among the groups. Therefore, we referred to the means to determine which group had more positive perceptions about using technology in language teaching. The results of the Wilcoxen test determined that there were statistically significant differences between novice and experienced teachers on 3 out of the 35 items (see Table 1). The statistically significant items were: Item 2, *I use technology in my teaching at least once per week*, Item 6, *I never use technology in my teaching*, and Item 31, *Please rate how often you use TV's and DVD players in your teaching* (1=never, 9=3 or more times per week). For Item 2, the experienced teachers' mean was 8.1 while the novice teachers' mean was 7.6. This shows that the experienced teachers in our study use technology more frequently than the novice

teachers. For Item 6, the experienced teachers' mean was 1.4 and the novice teachers' mean was 1.3. This result illustrates that experienced teachers in our study are slightly more likely to use technology in their teaching. For Item 31, which asked participants how often they used TV's and DVD players in their teaching (1= never, 9= three or more times per week) the experienced teachers' mean was 3.5 while the novice teachers' mean was 3.1. These results show that the experienced teachers in our study are more likely to use TV's and DVD players in their teaching versus their novice teacher counterparts.

Table 1. Mean and P value for level of experience

Statistically significant items	Novice Mean	Experienced Mean	P value
2. I use technology in my teaching at least once per week.	7.6	8.1	0.02
6. I never use technology in my teaching.	1.3	1.4	0.05
31. TV's and DVD players	3.1	3.5	0.05

We were also able to determine that there were statistically significant differences between the two age groups (29 and under, 30 and above) on two items (see Table 2). The statistically significant items were: Item 11, *Using technology can distract students from participation in the lesson,* Item 31*, Please rate how often you use TV's and DVD players in your teaching*. For Item 11, the mean for age group 29 and under was 5.4 while the mean for age 30 and above was 4.7. This shows that the younger participants are more likely to believe that technology can distract students from participating in lessons. We believed that because younger teachers are likely more familiar with technology than older teachers, the younger teachers would answer more positively on each of the survey items. However, this item shows that our assumptions were contradictory to the responses.

Table 2. Mean and P value for age groups

Statistically significant items	29 and below Mean	30 and above Mean	P value
11. Using technology can distract students from participating in the lesson.	4.7	8	0.02
31. TV's and DVD players	3	3.3	0.01

Discussion and Limitations

Our study focused on the perceptions on the usefulness of technology amongst novice and experienced teachers. Our findings showed a slight inclination of experienced teachers in our study to have more positive perceptions on technology over the novice groups on 3 out of the 35 items. The findings also showed that teachers in the 30 and above age range had more positive perceptions on using technology than the ESL teachers in the 29 and under age groups on 2 out of 35 items.

The results of our study showed that a large majority of our participants are not using technology frequently in the classroom and are often using basic types of technology such as TV's and DVD players. The last nine items of the questionnaire asked participants to rate how often they used certain tools in their teaching (computers, Internet, recording devices, LCD projectors, TV's and DVD players, smart boards, tablets, E-Readers, and cell phones). The Likert scale for these items was 1 = never, 3 = once or fewer times per month, 5 = two to three times per month, 7 = one or two times per week, 9 = three or more times per week. In comparing the novice and experienced teachers' means for these items, the results showed that the experienced teachers use each of these tools more often than their novice counterparts. In looking at the means (see Appendix F) for the two age groups (29 and under, 30 and above), we determined that the older teachers in our study are using each of the tools more often than the

younger teachers. We also noticed that these nine items showed that in all four groups the only technological tools that are being used multiples times per week are computers and the Internet. This finding reflects the assertion by Van den Braden (2011) that although there are a large number of technological tools available for language teachers, few have been incorporated into classroom teaching practices.

As with any study, there are some limitations that are important to address. In our study, the number of participants was disproportionately small in relation to the entire population of ESL teachers working in the United States. Another important factor is that the participants in our study were not randomly sampled. The low number of participants and the lack of random sampling means that our findings may not be generalizable to the population at large. Despite the fact that our findings may not be generalizable they may still reflect the perceptions on using technology amongst novice and experienced teachers in the US.

Despite these limitations, we believe our study has interesting implications about the differences between novice and experienced teachers' perceptions on technology. We originally thought that the novice participants would have more positive perceptions on using technology primarily because they have had more exposure to technology in their personal lives and in their formal education. However, the results showed that there were no significant differences between the groups except on 3 items. In fact, these 3 items showed that the experienced teachers had more positive views of using technology than the novice teachers. We believe that the results of our questionnaire would have yielded greater differences had we set the independent variable of experience to more than three years of experience. For example, had we defined novice teachers as teachers who have been working full-time for less than 5 years while experienced teachers as those with 10 years of experience or more, our results would have likely shown more

statistically significant differences on more than 5 questionnaire items. We also speculate that we would have found statistically significant differences between the groups had we had a larger sample of the population. While both of the groups used technology, experienced teachers used it more frequently. We think that the main reason novice teachers response to using technology less frequently has to do with their preoccupation with lesson planning, classroom management and perfecting their teaching tasks (Leinhardt & Greeno, 1986; Johnson, 1996). However, experienced teachers may be more comfortable with their teaching practices so they are less likely to be intimidated by incorporating technology into their teaching.

Another important finding was the rate of use of cell phones in language teaching. The experienced group had the highest mean of cell phone use at 3.1 compared to the other groups' use, which were novice = 2.5, 29 and under = 2.5, and 30 and above = 2.9. Although these differences were not statistically significant we were surprised that the experienced teachers had the most frequent use of cell phones in the classroom. We think this difference again relates to novice teachers' focus on classroom management; perhaps they believe that cell phones are a distraction in the classroom and therefore do not let their students use this tool.

Conclusion

Although previous research on novice and experienced teachers beliefs about technology showed significant differences (Meskill et al., 2002; Lee & Tsai, 2010), our results showed a small number of differences between these two groups as well as between age groups. Despite the fact that our findings did not support our hypotheses, the results may shed light on the differences in perceptions on using technology in language teaching between 4 groups (novice, experienced, 29 and under, 30 and above). Building on research thus far, we think that a further study could be done by analyzing the qualitative data (in the form of the open-ended comments)

and focusing specifically on the 5 items that showed statistical significance in order to find patterns of perceptions amongst the groups. Future research could delve deeper into *why* these differences in perceptions on technology exist amongst groups and whether classroom practices align with perceptions by conducting observations of survey participants' teaching actions.

Despite the fact that technology is becoming ever more important to discuss in the field and contend with in the classroom, technology will not replace the vital role of teachers in language learning. Based on our review of the literature, we found multiple authors and researchers calling for more contextualized and intensive CALL teacher training in graduate coursework. For both novice and experienced teachers, it is important to learn about various types of technology and how they can be used in the classroom to foster language learning. Teachers can find ways to improve their knowledge and skills of integrating CALL into their teaching by taking CALL courses, doing self-explorations of technology, and using their colleagues as resources for knowledge about technology integration (Egbert, Paulus, & Nakamichi, 2002).

Lafford (2009) suggests that an important next step in CALL investigations should include "research on the efficacy of various ways of training instructors to use technology and their motivation to do so" (p. 692). CALL specialists suggest that technology will continue to become ever more important to the language teaching classroom. Warschauer (2004) argues that when it comes to the future of CALL and technology integration, "the most important developments may not be those that occur in the technological realm, but rather those that take place in our conceptions of teaching and learning" (p. 24). In previous literature we found CALL experts suggesting that technology will redefine teaching and learning processes in the future.

Exploring teachers' beliefs about technology may help to bridge the gap between novice and experienced teachers to open new horizons for technology integration in the ESL classroom.

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Appendix A:
Technology Questionnaire

We are researching teachers' perceptions of using technology in their teaching. If you are a native- English-speaking ESL teacher currently working in US, we need your help! (If you are NOT a native-English-speaking ESL teacher working in the US, thank you very much but please disregard this survey). The survey should only take around 10 minutes. For our purposes, we are defining "technology" as: computers, the Internet, recording devices, LCD projectors, TV's and DVD players, smart boards, tablets, E-Readers, cell phones, etc.

Please answer the questions using this scale:
1= Strongly disagree
3= Disagree
5= No opinion
7= Agree
9= Strongly agree

Please answer these questions honestly and to the best of your knowledge. Below each survey question is a blank space where you can share your opinion if you wish to. If you could clarify your answer or share an experience with your open-ended comments on AT LEAST THREE QUESTIONS, we would greatly appreciate it.

Your answers will remain confidential. We appreciate your participation in our study. Once you have completed this survey, you will be entered to win a $20 gift card to Subway!

Thank you!

* = required

1. Technology is a useful tool for language teaching.*
2. I use technology in my teaching at least once per week.*
3. Using technology in my teaching is challenging.*
4. Using technology can promote language learning both inside and outside the classroom.*
5. Using technology is fun but doesn't actually help learners acquire language.*
6. I never use technology in my teaching.*
7. Using technology is not worth the time and effort during language lessons.*
8. Using technology facilitates my students' learning.*
9. Using technology provides me with many resources for teaching and learning.*
10. Using technology in lessons can increase students' motivation to learn.*
11. Using technology can distract students from participation in the lesson.*
12. With so many options for using technology in my teaching, it is impossible to know which

ones are the most effective.*
13. Using technology helps students accomplish classroom tasks.*
14. I have had success using technology in my ESL teaching.*
15. Some of my attempts to use technology in my ESL teaching have failed.*
16. Using technology allows me to give my students options in their learning.*
17. I am satisfied with the technology that I use and I don't want to explore new tools.*
18. Using technology can extend students' learning outside the classroom.*
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).*
20. I use technology to present materials to my students.*
21. My students have choices about how to use technology in their learning.*
22. I have access to technology in my classroom or at my school.*
23. My students get hands-on experience using technology during my lessons.*
24. In order to access technology, I have to reserve a dedicated lab space.*
25. My students bring their own technology devices to class.*
26. My school or administration requires the use of certain technologies.*
27. What technological tools are you using in your teaching? (Check all that apply)*
    - Computers
    - Internet
    - Recording devices
    - LCD projectors
    - Smart boards
    - LCD screens
    - Tablets
    - E-Readers
    - Cell phones

Please rate how often you use each of these tools in your teaching.*

Please answer the questions using this scale:
1= Never
3= Once or fewer times per month
5= Two to three times per month
7= One or two times per week
9= Three or more times per week

- Computers
- Internet
- Recording devices
- LCD projectors
- Smart boards

- LCD screens
- Tablets
- E-Readers
- Cell phones

Please answer a few demographic questions about yourself so we can get a better picture of our survey participants. Again, your responses will remain anonymous.

Which state do you currently live in?* _____
Are you a native speaker of English?*

- Yes
- No

What is your gender?*

- Male
- Female

What is your age?*

- 19 and under
- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70 and above

What level of English are you currently teaching? (Check all that apply)*

- Beginners
- Intermediate
- Advanced

What grade level are you currently teaching? (Check all that apply)*

- Grade school
- Middle school
- High school
- Adult school
- Community college
- University
- Independent ESL program
- Other

Please add any further description you feel is relevant to the context to which you are working.

How long have you been teaching full-time?*

- Less than 3 years
- 3 years or more

Can you please give us your email address and if you are the winner, we will email you about the $20 Subway card.

Would you be willing to let us follow-up with a brief interview?*

- Yes
- No

Appendix B:
Novice Teachers - Descriptive Statistics

Total ($N = 37$)

Item	Mean	Median	Mode	Range	SD	Variance
1. Technology is a useful tool for language teaching.	7.8	8	9	4	1.1	1.3
2. I use technology in my teaching at least once per week.	7.6	8	9	8	1.9	3.7
3. Using technology in my teaching is challenging.	4.2	3	3	8	2.2	5
4. Using technology can promote language learning both inside and outside the classroom.	8.1	9	9	4	1	1.1
5. Using technology is fun but doesn't actually help learners acquire language.	2.6	2	2	6	1.5	2.3
6. I never use technology in my teaching.	1.3	1	1	4	0.8	0.7
7. Using technology is not worth the time and effort during language lessons.	2.4	2	1, 2	7	1.6	2.5
8. Using technology facilitates my students' learning.	7.2	7	7	5	1.3	1.7
9. Using technology provides me with many resources for teaching and learning.	8.2	9	9	5	1	1
10. Using technology in lessons can increase students' motivation to learn.	7.3	7	7	5	1.3	1.7
11. Using technology can distract students from participation in the lesson.	5.4	5	5	8	2.2	4.8
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	4.1	4	3, 7	8	2.1	4.6
Item	Mean	Median	Mode	Range	SD	Variance
13. Using technology helps students accomplish classroom tasks.	6.5	7	7	6	1.6	2.6
14. I have had success using technology in my ESL teaching.	7.8	8	9	8	1.5	2.4
15. Some of my attempts to use technology in my ESL teaching have failed.	5.8	6	7	8	2.4	6
16. Using technology allows me to give my students options in their learning.	7.6	8	9	6	1.3	1.7

17. I am satisfied with the technology that I use and I don't want to explore new tools.	3	3	2	6	1.3	1.7
18. Using technology can extend students' learning outside the classroom.	8.1	9	9	4	1.3	1.7
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).	8.6	9	9	2	0.6	0.3
20. I use technology to present materials to my students.	7.7	9	9	8	1.7	2.9
Item	Mean	Median	Mode	Range	SD	Variance
21. My students have choices about how to use technology in their learning.	5.6	6	7	8	2.1	4.8
22. I have access to technology in my classroom or at my school.	7.4	9	9	8	2.2	4.8
23. My students get hands-on experience using technology during my lessons.	6.1	7	9	8	2.6	7.2
24. In order to access technology, I have to reserve a dedicated lab space.	4.6	5	1	8	3	9
25. My students bring their own technology devices to class.	6.3	7	9	8	2.5	6.4
26. My school or administration requires the use of certain technologies.	4.9	5	9	8	3	9
Please rate how often you use these tools in your teaching:	Mean	Median	Mode	Range	SD	Variance
27. Computers	7.2	9	9	8	2.3	5.4
28. Internet	7	9	9	8	2.5	6.7
29. Recording devices	3.6	3	1	8	2.5	6.4
30. LCD projectors	4.7	5	1, 9	8	3.3	11.4
31. TV's and DVD players	3.1	1	1	8	2.7	7.4
32. Smart boards	1.6	1	1	8	1.9	3.6
33. Tablets	1.4	1	1	5	1.2	1.6
34. E-Readers	1	1	1	1	0.2	0.07
35. Cell phones	2.5	1	1	7	2.2	4.9

Appendix C:
Experienced Teachers - Descriptive Statistics

Total ($N = 48$)

Item	Mean	Median	Mode	Range	SD	Variance
1. Technology is a useful tool for language teaching.	8.1	9	9	4	1	1.1
2. I use technology in my teaching at least once per week.	8.1	9	9	7	1.9	3.6
3. Using technology in my teaching is challenging.	4.9	5	5	8	2.2	5.1
4. Using technology can promote language learning both inside and outside the classroom.	8.2	9	9	6	1.3	1.7
5. Using technology is fun but doesn't actually help learners acquire language.	2.5	2	1	7	1.6	2.6
6. I never use technology in my teaching.	1.4	1	1	8	1.7	2.9
7. Using technology is not worth the time and effort during language lessons.	1.4	1	1	8	1.6	2.7
8. Using technology facilitates my students' learning.	7.7	8	9	5	1.4	2
9. Using technology provides me with many resources for teaching and learning.	7.7	8	9	5	0.9	0.9
10. Using technology in lessons can increase students' motivation to learn.	7.7	8	9	6	1.4	2.1
11. Using technology can distract students from participation in the lesson.	4.8	5	3, 5	8	2.4	6.1
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	4.4	5	6	8	2	4
Item	Mean	Median	Mode	Range	SD	Variance
13. Using technology helps students accomplish classroom tasks.	6.7	7	7	6	1.6	2.8
14. I have had success using technology in my ESL teaching.	8.1	9	9	4	1.1	1.2
15. Some of my attempts to use technology in my ESL teaching have failed.	6.6	7	7	7	1.8	3.5
16. Using technology allows me to give my students options in their	7.9	9	9	7	1.4	2.1

learning.						
17. I am satisfied with the technology that I use and I don't want to explore new tools.	3	3	3	7	1.6	2.8
18. Using technology can extend students' learning outside the classroom.	8.2	9	9	6	1.2	1.5
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).	8.4	9	9	3	0.8	0.6
20. I use technology to present materials to my students.	7.9	8.5	9	6	1.2	1.6
Item	Mean	Median	Mode	Range	SD	Variance
21. My students have choices about how to use technology in their learning.	6.3	7	5, 8, 9	8	2.1	4.5
22. I have access to technology in my classroom or at my school.	7.9	9	9	7	1.5	2.2
23. My students get hands-on experience using technology during my lessons.	6	6	5, 9	8	2.2	5
24. In order to access technology, I have to reserve a dedicated lab space.	4.7	5	1	8	2.9	8.6
25. My students bring their own technology devices to class.	6.2	7	5, 7, 9	8	2.3	5.3
26. My school or administration requires the use of certain technologies.	4.9	5	9	8	3	9
Please rate how often you use these tools in your teaching:	Mean	Median	Mode	Range	SD	Variance
27. Computers	8	9	9	7	1.9	3.8
28. Internet	7.7	9	9	7	1.9	3.8
29. Recording devices	4.1	4	3	8	2.4	5.8
30. LCD projectors	5.2	5	9	8	3	9.1
31. TV's and DVD players	3.5	3	1	8	2.3	5.6
32. Smart boards	1.5	1	1	8	1.5	2.5
33. Tablets	1.8	1	1	8	1.7	3.2
34. E-Readers	1.8	1	1	8	1.7	3.2
35. Cell phones	3.1	2	1	8	2.5	6.2

Appendix D:
Teachers Age 29 and under - Descriptive Statistics

Total ($N = 25$)

Item	Mean	Median	Mode	Range	SD	Variance
1. Technology is a useful tool for language teaching.	8.0	8.0	27	3	1.2	1.2
2. I use technology in my teaching at least once per week.	7.5	8	9	8	2.1	4.5
3. Using technology in my teaching is challenging.	4	3	3	8	2.2	4.9
4. Using technology can promote language learning both inside and outside the classroom.	8.3	9	9	2	0.8	0.7
5. Using technology is fun but doesn't actually help learners acquire language.	2.5	2	1	6	1.6	2.6
6. I never use technology in my teaching.	1.3	1	1	4	0.9	0.8
7. Using technology is not worth the time and effort during language lessons.	2.3	2	1	7	1.6	2.6
8. Using technology facilitates my students' learning.	7.5	7	7, 9	4	1.2	1.5
9. Using technology provides me with many resources for teaching and learning.	8.2	9	9	5	1.1	1.3
10. Using technology in lessons can increase students' motivation to learn.	7.5	8	7	5	1.3	1.8
11. Using technology can distract students from participation in the lesson.	5.4	5	5	8	2.1	4.6
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	4.1	4	3	8	2	4
Item	Mean	Median	Mode	Range	SD	Variance
13. Using technology helps students accomplish classroom tasks.	6.6	7	5	6	1.7	3
14. I have had success using technology in my ESL teaching.	7.8	8	9	8	2	4.2
15. Some of my attempts to use technology in my ESL teaching have failed.	5.6	6	6	8	2.5	6.7
16. Using technology allows me to give my students options in their	7.7	8	9	6	1.4	2

learning.						
17. I am satisfied with the technology that I use and I don't want to explore new tools.	3.5	3	2	6	1.6	2.8
18. Using technology can extend students' learning outside the classroom.	8.1	9	9	4	1	1.2
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).	8.7	9	9	2	0.59	0.3
20. I use technology to present materials to my students.	7	7	9	8	2.3	5.5
Item	Mean	Median	Mode	Range	SD	Variance
21. My students have choices about how to use technology in their learning.	5.7	6	7	8	2	4
22. I have access to technology in my classroom or at my school.	7	9	9	8	2.5	6.7
23. My students get hands-on experience using technology during my lessons.	6	7	9	8	2.7	7.3
24. In order to access technology, I have to reserve a dedicated lab space.	5	5	1, 9	8	2.9	8.7
25. My students bring their own technology devices to class.	6.8	7	9	8	2.2	5
26. My school or administration requires the use of certain technologies.	4.6	4	1, 9	8	3.1	9.7
Please rate how often you use these tools in your teaching:	Mean	Median	Mode	Range	SD	Variance
27. Computers	7.5	9	9	8	2.3	5
28. Internet	7	9	9	8	2.6	6.9
29. Recording devices	3.6	3	1	8	2.5	6.5
30. LCD projectors	4.7	5	1, 9	8	3.4	11.7
31. TV's and DVD players	3	1	1	8	2.7	7.6
32. Smart boards	1.6	1	1	8	1.9	3.8
33. Tablets	1.4	1	1	5	1.2	1.5
34. E-Readers	1	1	1	1	0.2	0.07
35. Cell phones	2.5	1	1	7	2.2	5.1

Appendix E:
Teachers Age 30 and above - Descriptive Statistics

Total ($N = 60$)

Item	Mean	Median	Mode	Range	SD	Variance
1. Technology is a useful tool for language teaching.	8	9	9	4	1	1.2
2. I use technology in my teaching at least once per week.	8.1	9	9	7	1.8	3.3
3. Using technology in my teaching is challenging.	4.8	5	5, 2, 7	8	2.2	5.2
4. Using technology can promote language learning both inside and outside the classroom.	8.1	9	9	6	1.3	1.7
5. Using technology is fun but doesn't actually help learners acquire language.	2.5	2	1	7	1.5	2.4
6. I never use technology in my teaching.	1.4	1	1	8	1.5	2.4
7. Using technology is not worth the time and effort during language lessons.	2.4	2	1	6	1.6	2.6
8. Using technology facilitates my students' learning.	7.5	8	9	5	1.4	2.1
9. Using technology provides me with many resources for teaching and learning.	8.2	9	9	3	0.9	0.8
10. Using technology in lessons can increase students' motivation to learn.	7.5	8	9	6	1.4	2.1
11. Using technology can distract students from participation in the lesson.	4.7	5	3, 5	8	2.3	5.6
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	4.3	5	6	8	2.1	4.4
Item	Mean	Median	Mode	Range	SD	Variance
13. Using technology helps students accomplish classroom tasks.	6.6	7	7	6	1.6	2.6
14. I have had success using technology in my ESL teaching.	8	9	9	4	1.1	1.4
15. Some of my attempts to use technology in my ESL teaching have failed.	6.5	7	7	7	1.9	3.7
16. Using technology allows me to give my students options in their	7.7	8	9	7	1.3	1.9

learning.						
17. I am satisfied with the technology that I use and I don't want to explore new tools.	2.8	3	3	7	1.6	2.6
18. Using technology can extend students' learning outside the classroom.	8.2	9	9	6	1.2	1.4
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).	8.4	9	9	3	0.7	0.6
20. I use technology to present materials to my students.	8	9	9	6	1.2	1.5
Item	Mean	Median	Mode	Range	SD	Variance
21. My students have choices about how to use technology in their learning.	6	6	8	8	2.2	4.9
22. I have access to technology in my classroom or at my school.	7.8	9	9	7	1.6	2.4
23. My students get hands-on experience using technology during my lessons.	5.9	6	9	8	2.3	5.3
24. In order to access technology, I have to reserve a dedicated lab space.	4.4	5	1	8	2.9	8.8
25. My students bring their own technology devices to class.	6	7	7	8	2.4	6
26. My school or administration requires the use of certain technologies.	4.8	5	1, 9	8	2.9	8.8
Please rate how often you use these tools in your teaching:	Mean	Median	Mode	Range	SD	Variance
27. Computers	8	9	9	7	1.9	3.9
28. Internet	7.7	9	9	7	1.9	3.9
29. Recording devices	3.8	3	1	8	2.5	6.4
30. LCD projectors	5.6	5	9	8	2.9	8.9
31. TV's and DVD players	3.3	3	1	8	2.3	5.3
32. Smart boards	1.5	1	1	8	1.7	3
33. Tablets	1.7	1	1	7	1.4	2.2
34. E-Readers	1.3	1	1	8	1.2	1.6
35. Cell phones	2.9	2	1	8	2.3	5.5

Appendix F:
Chart of Mean, SD and Variance for Novice and Experienced

	Novice			Experienced		
Item	Mean	SD	Variance	Mean	SD	Variance
1. Technology is a useful tool for language teaching.	7.8	1.1	1.3	8.1	1	1.1
2. I use technology in my teaching at least once per week.	7.6	1.9	3.7	8.1	1.9	3.6
3. Using technology in my teaching is challenging.	4.2	2.2	5	4.9	2.2	5.1
4. Using technology can promote language learning both inside and outside the classroom.	8.1	1	1.1	8.2	1.3	1.7
5. Using technology is fun but doesn't actually help learners acquire language.	2.6	1.5	2.3	2.5	1.6	2.6
6. I never use technology in my teaching.	1.3	0.8	0.7	1.4	1.7	2.9
7. Using technology is not worth the time and effort during language lessons.	2.4	1.6	2.5	1.4	1.6	2.7
8. Using technology facilitates my students' learning.	7.2	1.3	1.7	7.7	1.4	2
9. Using technology provides me with many resources for teaching and learning.	8.2	1	1	7.7	0.9	0.9
10. Using technology in lessons can increase students' motivation to learn.	7.3	1.3	1.7	7.7	1.4	2.1
11. Using technology can distract students from participation in the lesson.	5.4	2.2	4.8	4.8	2.4	6.1
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	4.1	2.1	4.6	4.4	2	4
Item	Mean	SD	Variance	Mean	SD	Variance
13. Using technology helps students accomplish classroom tasks.	6.5	1.6	2.6	6.7	1.6	2.8
14. I have had success using technology in my ESL teaching.	7.8	1.5	2.4	8.1	1.1	1.2
15. Some of my attempts to use technology in my ESL teaching have failed.	5.8	2.4	6	6.6	1.8	3.5
16. Using technology allows me to give my students options in their learning.	7.6	1.3	1.7	7.9	1.4	2.1
17. I am satisfied with the technology that I use and I don't want to explore new tools.	3	1.3	1.7	3	1.6	2.8
18. Using technology can extend students' learning outside the classroom.	8.1	1.3	1.7	8.2	1.2	1.5
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and	8.6	0.6	0.3	8.4	0.8	0.6

networking).						
20. I use technology to present materials to my students.	7.7	1.7	2.9	7.9	1.2	1.6
Item	Mean	SD	Variance	Mean	SD	Variance
21. My students have choices about how to use technology in their learning.	5.6	2.1	4.8	6.3	2.1	4.5
22. I have access to technology in my classroom or at my school.	7.4	2.2	4.8	7.9	1.5	2.2
23. My students get hands-on experience using technology during my lessons.	6.1	2.6	7.2	6	2.2	5
24. In order to access technology, I have to reserve a dedicated lab space.	4.6	3	9	4.7	2.9	8.6
25. My students bring their own technology devices to class.	6.3	2.5	6.4	6.2	2.3	5.3
26. My school or administration requires the use of certain technologies.	4.9	3	9	4.9	3	9
Please rate how often you use these tools in your teaching:	Mean	SD	Variance	Mean	SD	Variance
27. Computers	7.2	2.3	5.4	8	1.9	3.8
28. Internet	7	2.5	6.7	7.7	1.9	3.8
29. Recording devices	3.6	2.5	6.4	4.1	2.4	5.8
30. LCD projectors	4.7	3.3	11.4	5.2	3	9.1
31. TV's and DVD players	3.1	2.7	7.4	3.5	2.3	5.6
32. Smart boards	1.6	1.9	3.6	1.5	1.5	2.5
33. Tablets	1.4	1.2	1.6	1.8	1.7	3.2
34. E-Readers	1	0.2	0.07	1.8	1.7	3.2
35. Cell phones	2.5	2.2	4.9	3.1	2.5	6.2

Appendix G:
Chart of Mean, SD and Variance for Teachers Age 29 and below and Teachers Age 30 and above

	29 and below			30 and above		
Item	Mean	SD	Variance	Mean	SD	Variance
1. Technology is a useful tool for language teaching.	8.0	1.2	1.2	8	1	1.2
2. I use technology in my teaching at least once per week.	7.5	2.1	4.5	8.1	1.8	3.3
3. Using technology in my teaching is challenging.	4	2.2	4.9	4.8	2.2	5.2
4. Using technology can promote language learning both inside and outside the classroom.	8.3	0.8	0.7	8.1	1.3	1.7
5. Using technology is fun but doesn't actually help learners acquire language.	2.5	1.6	2.6	2.5	1.5	2.4
6. I never use technology in my teaching.	1.3	0.9	0.8	1.4	1.5	2.4
7. Using technology is not worth the time and effort during language lessons.	2.3	1.6	2.6	2.4	1.6	2.6
8. Using technology facilitates my students' learning.	7.5	1.2	1.5	7.5	1.4	2.1
9. Using technology provides me with many resources for teaching and learning.	8.2	1.1	1.3	8.2	0.9	0.8
10. Using technology in lessons can increase students' motivation to learn.	7.5	1.3	1.8	7.5	1.4	2.1
11. Using technology can distract students from participation in the lesson.	5.4	2.1	4.6	4.7	2.3	5.6
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	4.1	2	4	4.3	2.1	4.4
Item	Mean	SD	Variance	Mean	SD	Variance
13. Using technology helps students accomplish classroom tasks.	6.6	1.7	3	6.6	1.6	2.6
14. I have had success using technology in my ESL teaching.	7.8	2	4.2	8	1.1	1.4
15. Some of my attempts to use technology in my ESL teaching have failed.	5.6	2.5	6.7	6.5	1.9	3.7
16. Using technology allows me to give my students options in their learning.	7.7	1.4	2	7.7	1.3	1.9
17. I am satisfied with the technology that I use and I don't want to explore new tools.	3.5	1.6	2.8	2.8	1.6	2.6
18. Using technology can extend students' learning outside the classroom.	8.1	1	1.2	8.2	1.2	1.4
19. I am comfortable using technology for	8.7	0.59	0.3	8.4	0.7	0.6

personal use (e.g., emailing, making professional presentations, and networking).						
20. I use technology to present materials to my students.	7	2.3	5.5	8	1.2	1.5
Item	Mean	SD	Variance	Mean	SD	Variance
21. My students have choices about how to use technology in their learning.	5.7	2	4	6	2.2	4.9
22. I have access to technology in my classroom or at my school.	7	2.5	6.7	7.8	1.6	2.4
23. My students get hands-on experience using technology during my lessons.	6	2.7	7.3	5.9	2.3	5.3
24. In order to access technology, I have to reserve a dedicated lab space.	5	2.9	8.7	4.4	2.9	8.8
25. My students bring their own technology devices to class.	6.8	2.2	5	6	2.4	6
26. My school or administration requires the use of certain technologies.	4.6	3.1	9.7	4.8	2.9	8.8
Please rate how often you use these tools in your teaching:	Mean	SD	Variance	Mean	SD	Variance
27. Computers	7.5	2.3	5	8	1.9	3.9
28. Internet	7	2.6	6.9	7.7	1.9	3.9
29. Recording devices	3.6	2.5	6.5	3.8	2.5	6.4
30. LCD projectors	4.7	3.4	11.7	5.6	2.9	8.9
31. TV's and DVD players	3	2.7	7.6	3.3	2.3	5.3
32. Smart boards	1.6	1.9	3.8	1.5	1.7	3
33. Tablets	1.4	1.2	1.5	1.7	1.4	2.2
34. E-Readers	1	0.2	0.07	1.3	1.2	1.6
35. Cell phones	2.5	2.2	5.1	2.9	2.3	5.5

Appendix H:
Wilcoxen Test P values for Novice vs. Experienced

Item	Wilcoxen test P value
1. Technology is a useful tool for language teaching.	0.29
2. I use technology in my teaching at least once per week.	0.02
3. Using technology in my teaching is challenging.	0.15
4. Using technology can promote language learning both inside and outside the classroom.	0.41
5. Using technology is fun but doesn't actually help learners acquire language.	0.66
6. I never use technology in my teaching.	0.05
7. Using technology is not worth the time and effort during language lessons.	0.66
8. Using technology facilitates my students' learning.	0.12
9. Using technology provides me with many resources for teaching and learning.	0.94
10. Using technology in lessons can increase students' motivation to learn.	0.19
11. Using technology can distract students from participation in the lesson.	0.30
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	0.67
13. Using technology helps students accomplish classroom tasks.	0.84
14. I have had success using technology in my ESL teaching.	0.29
15. Some of my attempts to use technology in my ESL teaching have failed.	0.27
16. Using technology allows me to give my students options in their learning.	0.16
17. I am satisfied with the technology that I use and I don't want to explore new tools.	0.68
18. Using technology can extend students' learning outside the classroom.	0.78
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).	0.19
20. I use technology to present materials to my students.	0.91
21. My students have choices about how to use technology in their learning.	0.13
Item	Wilcoxen test P value
22. I have access to technology in my classroom or at my school.	0.54
23. My students get hands-on experience using technology during my lessons.	0.70
24. In order to access technology, I have to reserve a dedicated lab space.	0.89
25. My students bring their own technology devices to class.	0.59
26. My school or administration requires the use of certain technologies.	0.99
Please rate how often you use these tools in your teaching:	Wilcoxen test P value
27. Computers	0.32
28. Internet	0.42
29. Recording devices	0.07
30. LCD projectors	0.53
31. TV's and DVD players	0.05
32. Smart boards	0.71

33. Tablets	0.25
34. E-Readers	0.10
35. Cell phones	0.19

Appendix I:
Wilcoxen test P values for Teachers 29 and under vs. Teachers 30 and up

Item	Wilcoxen test P value
1. Technology is a useful tool for language teaching.	0.49
2. I use technology in my teaching at least once per week.	0.27
3. Using technology in my teaching is challenging.	0.36
4. Using technology can promote language learning both inside and outside the classroom.	0.45
5. Using technology is fun but doesn't actually help learners acquire language.	0.61
6. I never use technology in my teaching.	0.88
7. Using technology is not worth the time and effort during language lessons.	0.64
8. Using technology facilitates my students' learning.	0.98
9. Using technology provides me with many resources for teaching and learning.	0.90
10. Using technology in lessons can increase students' motivation to learn.	0.48
11. Using technology can distract students from participation in the lesson.	0.02
12. With so many options for using technology in my teaching, it is impossible to know which ones are the most effective.	0.71
13. Using technology helps students accomplish classroom tasks.	0.12
14. I have had success using technology in my ESL teaching.	0.84
15. Some of my attempts to use technology in my ESL teaching have failed.	0.72
16. Using technology allows me to give my students options in their learning.	0.22
17. I am satisfied with the technology that I use and I don't want to explore new tools.	0.80
18. Using technology can extend students' learning outside the classroom.	0.49
19. I am comfortable using technology for personal use (e.g., emailing, making professional presentations, and networking).	0.94
20. I use technology to present materials to my students.	0.23
21. My students have choices about how to use technology in their learning.	0.18
22. I have access to technology in my classroom or at my school.	0.54
23. My students get hands-on experience using technology during my lessons.	0.49
24. In order to access technology, I have to reserve a dedicated lab space.	0.22
25. My students bring their own technology devices to class.	0.82
26. My school or administration requires the use of certain technologies.	0.08
Please rate how often you use these tools in your teaching:	Wilcoxen test P value
27. Computers	0.71
28. Internet	0.54
29. Recording devices	0.48
30. LCD projectors	0.81
31. TV's and DVD players	0.01
32. Smart boards	0.52
33. Tablets	0.48
34. E-Readers	0.95
35. Cell phones	0.44