



ESL TEACHER PERCEPTIONS OF USING EDUCATIONAL MOBILE APPLICATIONS TO DEVELOP THE LANGUAGE SKILLS OF ESL ELEMENTARY SCHOOL STUDENTS

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Abstract:

The purpose of this qualitative study is to explore the perceptions of ESL teachers regarding the use of educational mobile applications to help ESL elementary school students develop their language skills. Qualitative data were collected through in-depth interviews from eight ESL teachers from different schools in Carbondale. Participants reported positive perceptions of using educational mobile applications to develop the language skills of students. This study provides some recommendations for the successful integration of technology in English learning and teaching.

Keywords: perceptions, educational mobile applications, integration, technology

1. Introduction

In the last three decades, digital technology has made great changes in our lives, particularly in the field of education (Mollaei & Riasati, 2013). Many studies have investigated the impact of integrating digital technology (e.g., computers, tablets, digital cameras, smart phones, and iPads) on the learning and teaching process. According to Zydney and Warner (2016), digital technology offers an interactive and

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engaging learning environment in which the learner is an active participant rather than a passive receiver of knowledge. It also helps learners enhance their ability to organize their own learning and improve their time management skills (Tabuenca, Kalz, Drachsler, & Specht, 2015). The success of integrating technology in the classroom requires positive perceptions and attitudes toward that technology and some awareness about its benefits. Because of the importance of the individual's beliefs in the educational process, this study aims to investigate teachers' perceptions regarding the use of educational mobile applications to help ESL elementary school students develop their language skills.

2. Problem Statement

With the rapid increase of immigration to the United States and other English-speaking countries, many challenges face minority-language students who enter public schools, as well as their parents, teachers, curriculum designers, and majority-language classmates. Minority-language students need to improve their English skills, particularly academic language, in order to integrate into mainstream curriculum and to achieve linguistic, social, and academic success. Mastering academic language is important to all learners, not just minority-language students, as their mastery of academic language determines reading comprehension required to understand academic content. Although ESL students can acquire social language in two years, it usually takes five to seven years to catch up with the academic language and literacy levels of their academically successful English L1 peers (Duff, 2001).

In recent years, digital technology has been widely used to help ESL students master the academic English, literacy skills, and subject matter knowledge needed to achieve academic success. Although a large number of teachers believe in the potential of new technology in improving the learning and teaching process, they are not taking full advantage of such technology. According to Al Aamri (2011), different factors may affect the success of integrating technology in ESL classrooms. Especially important are individuals' beliefs (Merç, 2015). Therefore, more research is needed to identify individuals' perceptions about integrating technology into the teaching and learning process. The present study aims to investigate ESL teachers' perceptions regarding the use of educational mobile applications to help ESL elementary school students develop their language skills.

2.1 Significance of the Problem

Mobile learning is still an emerging field and more research is required to more fully understand its nature (Vázquez-Cano, 2012; Traxler, 2007; Şad & Gökteş, 2014). This study contributes to the body of research in this field and the knowledge about teaching and learning English as a second language. Additionally, ESL teacher beliefs about mobile learning might provide a better understanding of their actual practices inside and outside the classroom (see Merç, 2015). Furthermore, this study could raise

awareness among ESL teachers and curriculum designers regarding mobile devices and applications as an education tool (see Ozdamli & Uzunboylu, 2015).

3. Technology Use in the ESL Classroom

English language skills can be classified as input skills (listening and reading) and output skills (writing and speaking). Constantinescu (2007) mentioned that reading is an important input skill that depends on reading a text, processing it, and understanding its meaning to improve vocabulary, acquire new ideas, and enhance real-world knowledge. Using different educational programs can improve learners' reading ability and increase motivation to improve vocabulary and reading skills; and technology devices can likewise increase learner interest in reading skills. Reading-based software programs can be utilized to enable English language learners to interact with texts and help users pay more attention to individual needs when reading (Ybarra & Green, 2003).

According to Nomass (2013), English language students can benefit from technology to learn English as a second language. She found that 60% of English language students consulted used technology in their daily life, 98% believed that technology could improve their English vocabulary, and 66% preferred using technology to develop their second language skills. Different methods of employing technology can be utilized in improving and developing the language skills transferred to learners. A Chinese proverb states, *"Tell me, I'll forget. Show me, I'll remember. Involve me, I'll understand"* and similarly in relation to technology, the following could be stated: *"Differentially instruct me, I'll internalize. Use technology with me, I'll participate, I'll transfer, I'll employ and I'll create"* (Erben et al., 2009, p. 65).

Various empirical studies have proposed a connection between mobile learning and second language learning in the areas of writing (Silver & Repa, 1993), speaking (Peterson, 1990), listening comprehension (Grezel & Sciarone, 1994), grammar (Swann, 1992), and vocabulary (Kang, 1995). Mobile learning and ESL language instruction are associated because mobile learning makes ESL material more accessible to ESL learners. Meskill and Mossop (2000) stated that ESL learners have a greater opportunity to participate in the daily instructional activities by using mobile learning. When ESL teachers work with students who have different levels of English-language ability, mobile learning offers more tasks and materials that support individual learning needs.

3.1 Research Purpose and Question

The purpose of this qualitative study is to explore the perceptions of ESL teachers regarding the use of educational mobile applications to help ESL elementary school students develop their language skills. This study collected qualitative data through interviews. I gathered qualitative data through semi-structured interviews with ESL teachers to fully explore their perceptions of using educational mobile applications to improve their language skills.

This study is significant because it contributes to the body of research on using mobile learning in ESL instruction, which is still an emerging field (Şad & Göktaş, 2014). It could also raise awareness among ESL teachers and curriculum designers regarding mobile devices and applications as an education tool that can be used to help ESL students in mainstream English classrooms (see Ozdamli & Uzunboylu, 2015). Additionally, ESL teachers' beliefs about integrating technology in the ESL classroom could provide a better understanding of their actual practices (Merç, 2015). Gathering quantitative data using multiple data sources, and involving different perspectives could provide a fuller understanding of using mobile applications to improve ESL students' language skills (see Creswell, 2014). Furthermore, the qualitative analysis of ESL applications reveals some of their strengths and weaknesses and reflects their educational and pedagogical values.

3.2 Research Question

The following question guided this study, what are the perceptions among ESL teachers regarding the use of educational mobile applications to help ESL elementary school students develop their language skills?

These questions are appropriate because they are supported by several studies that investigated teacher perceptions of using mobile learning in ESL classrooms (e.g., Lin & Yang, 2011; Al-Fahad, 2009; Al Aamri, 2011; Şad & Göktaş, 2014; Shifflet & Weilbacher, 2015; Yüksela & Kavanoz, 2011; Mollaei & Riasati, 2013). This study adds to the growing body of knowledge in this field by analyzing certain aspects of ESL learning and teaching in greater depth. It also investigates parents' perceptions in addition to those of teachers, which increases awareness about the role of parents in second language learning and teaching (Kanthawongs & Kanthawongs, 2013).

4. Literature Review

This section reviewed relevant literature on mobile learning; technology integration in ESL classrooms; teacher perceptions; educational applications (apps); and second language literacy in the ESL classroom.

4.1 Technology Integration in ESL Classrooms

Teachers are an essential part of the integration process as they are considered the gatekeepers to technology integration in the classroom. This means that they play a vital role in the success or failure of mobile phones in the integration process (O'Bannon & Thomas, 2015). Additionally, integration is based on the teachers' experience in effectively facilitating the use of technologies in ESL classrooms (Bitner & Bitner, 2002). In Hismanoglu's study (2012a), the lecturers were shown to increase ESL teachers' motivation in the teaching and learning process and make the class more student-centered by integrating a variety of educational tools into the ESL classroom.

Radich (2013) outlined principles to guide the appropriate use of technology and interactive media as tools in early childhood programs serving children from birth through age 8; a list of these principles is quoted below:

- 1) Above all, the use of technology tools and interactive media should not harm children.
- 2) Developmentally appropriate practices must guide decisions about whether and when to integrate technology and interactive media into early childhood programs.
- 3) Professional judgment is required to determine if and when a specific use of technology or media is age appropriate, individually appropriate, and culturally and linguistically appropriate.
- 4) Developmentally appropriate teaching practices must always guide the selection of any classroom materials, including technology and interactive media.
- 5) Appropriate use of technology and media depends on the age, developmental level, needs, interests, linguistic background, and abilities of each child.
- 6) Effective uses of technology and media are active, hands-on, engaging, and empowering; give the child control; provide adaptive scaffolds to ease the accomplishment of tasks; and are used as one of many options to support children's learning.
- 7) When used appropriately, technology and media can enhance children's cognitive and social abilities.
- 8) Interactions with technology and media should be playful and support creativity, exploration, pretend play, active play, and outdoor activities.
- 9) Technology tools can help educators make and strengthen home-school connections.
- 10) Technology and media can enhance early childhood practice when integrated into the environment, curriculum, and daily routines.
- 11) Assistive technology must be available as needed to provide equitable access for children with special needs.
- 12) Technology tools can be effective for dual language learners by providing access to a family's home language and culture while supporting English language learning.
- 13) Digital literacy is essential to guiding early childhood educators and parents in the selection, use, integration, and evaluation of technology and interactive media.
- 14) Digital citizenship is an important part of digital literacy for young children.
- 15) Early childhood educators need training, professional development opportunities, and examples of successful practice to develop the technology and media knowledge, skills, and experience needed to meet the expectations set forth in this statement.

- 16) Research is needed to better understand how young children use and learn with technology and interactive media and also to better understand any short- and long-term effects. (pp. 5–11)

4.2 Teachers' Perceptions

Understanding teachers' beliefs about integrating technology in foreign and second language classrooms is important (Chaklikova & Karabayeva, 2015). According to Merç (2015), teachers' beliefs about the usefulness of technology in the second language classroom influence their teaching choices (e.g., strategies, procedures, and materials) and provide us with a better understanding about their actual practices. Shifflet and Weilbacher (2015) stated, "*Beliefs about the benefits of technology for teaching and learning may in fact be the strongest predictor of use in the classroom*" (p. 368). Additionally, teachers' beliefs reflect their understanding of their new role as a facilitator who provides learners with tools to acquire knowledge, rather than purely being a transmitter of knowledge (Mollaei & Riasati, 2013).

Different factors influence teachers' beliefs about integrating technology in the classroom, including availability of technology, personal and cultural experiences, and cognitive insight (Chaklikova & Karabayeva, 2015). In a correlational study, Sadik (2006) used a questionnaire to investigate the relationship between teachers' beliefs about technology integration and other factors. The results indicated that teachers' beliefs and attitudes toward using technology in the classroom positively correlated with training, teaching experience, technology expertise, and personal use. Hismanoglu and Hismanoglu (2011) used a true experimental design to investigate the impact of training in perceptions and attitudes of English teacher candidates toward technology integration in ESL classrooms. The results indicated that prospective ESL teachers in the experimental group that received technology training showed a significant increase in positive beliefs and attitudes toward integrating technology in ESL classrooms. Sadik (2006) and Hismanoglu and Hismanoglu (2011) used strong quantitative designs with large random samples that provided strong evidence for the validity and reliability of their instruments. However, quantitative data alone is not sufficient to understand individual attitudes and beliefs (Mollaei & Riasati, 2013). Thus, in this study I use a mixed-methods design in which both quantitative and qualitative data are integrated in order to provide a more complete picture about the issue of interest (Creswell, 2014).

Several studies have discussed teachers' perceptions about integrating technology in second or foreign language classrooms. Yüksel and Kavanoz (2011) surveyed 200 ESL pre-service teachers from Turkey about their perceptions of integrating technology in ESL classrooms. Most of the participants had a positive attitude toward integrating technology in ESL classrooms. However, they were not confident enough about their abilities to use technology in their prospective classrooms. In a mixed-methods study, Mollaei and Riasati (2013) used a survey and interviews to investigate Iranian ESL teachers' perceptions about integrating technology in ESL classrooms. In the surveys, most of the teachers had positive perceptions about this

practice, and in the interviews, they described its effectiveness. They stated that technology provides authentic materials, supports student motivation, facilitates learning and teaching, and increases student participation. It also minimizes the teacher's role in the classroom and shifts the classroom to a learner-centered environment. On the other hand, some ESL teachers discussed barriers that may hinder teaching and learning, including limited access and time as well as inadequate training and technical support.

4.3 Educational Applications (Apps)

A criteria model for educational app evaluation focuses on four areas: teaching and learning, screen design, technology, and economy and ethics was suggested by Lee and Kim (2015). Teaching and learning evaluates the educational quality of the app (whether it supports motivation, authenticity, cognitive development, and self-centeredness). Screen design is related to clarity, consistency, and ease of use. Technology evaluates the quality of the system (e.g., fast loading and error-free functionality). Economy is related to the appropriateness of the app price given its quality and the simplicity of payment; while ethics is related to eliminating morally biased, violent, and inappropriate content.

Kim and Kwon (2012) adapted Hubbard's analytical framework (1988; 2006; 2011) for CALL courseware evaluation in order to analyze 87 ESL applications. Hubbard's framework has three main categories: content, procedure and approach, and technological features. The content focuses on the appropriateness of the content for the target learners. Procedure and approach focuses on the activities, methodological approaches, and teacher needs. The technological features consist of the following elements: "*simplicity of direction and usage, platform compatibility, multimedia, and exploitation of computer potential*" (p. 39). Kim and Kwon's results indicated that most of the ESL apps they analyzed focused on cognitive skills (e.g., recognition, recall, and comprehension) rather than socio-cognitive learning, which refers to how one thinks and learns about people. Additionally, almost half of the apps provided traditional teacher-directed activities (e.g., tutorials and drills). Only a few of the apps provided scaffolding tools (e.g., dictionary, spellchecker, and pronunciation). Looking at technology features, most of the reviewed applications were technically well developed. They also provided simple directions and employed multimedia features (e.g., sound and video).

4.4 Second Language Literacy in the ESL Classroom

The number of non-native English speaking learners in U.S. public schools has increased remarkably. By 2000, the number of learners in public schools had risen to 44 million (National Council of La Raza, 1990). Due to this growth in ESL learners, language and literacy assistance are needed along with teachers and technologies in ESL instruction. This means that the role of ESL software products has become essential in promoting language and literacy among ESL learners (Meskill & Mossop, 2000).

Learners who have difficulties with language in U.S. schools often face challenges from the loss of contextual clues as they progress, as explained by Collier (1989) below:

“Language in school becomes increasingly complex and less connected to contextual clues as students move from one grade level to the next. Language becomes the focus of every content-area task, with all meaning and all demonstration of knowledge expressed through oral and written forms of language.” (p. 512)

ESL students must learn and develop language, cognitive academic skills, understanding, expression, communication skills, problem solving, critical thinking, academic literacy proficiency, and knowledge (Meskill & Mossop, 2000). According to language teaching methodologies, the ESL teacher clarifies language concepts and enhances content. Consequently, in five to seven years ESL learners are required to reach Cognitive Academic Language Proficiency, in contrast to the amount of time required for Basic Interpersonal Communication skills (Collier, 1989). Additionally, many factors affect second language learning and academic skills, such as motivation (Crookes & Schmidt, 1991) and the negative influence of language learning concern (Gardner, Day, & MacIntyre, 1992). Meskill and Mossop (2000) identified several different kinds of teacher uses for computer programs, which are quoted in the list below:

- 1) Emergent literacy (K - early elementary): Alphabet and spelling programs are used in developing basic literacy skills. Additionally, graphics programs are used to support learners in making connections between images and text. Graphics often serve as a springboard for discussion and writing in the target language.
- 2) Literacy through stories (elementary): Teachers use programs that allow students to choose environments and graphics to support the stories they write. There is a preference for software that allows students to write, voice record their stories, and listen to the playback as they follow the text on the screen. Some use of book-length reading programs was also reported. Here, while reading the story, learners can access explanations and animations through hypertext links.
- 3) Literacy through personal journal writing (elementary - middle): Word processing is used as the medium for interactive dialogue journals. Personal entries and responses are saved on disk.
- 4) Literacy through content (upper elementary - middle): Social studies, science, and math programs are used by ESL teachers as part of interdisciplinary, theme-based activities. Multimedia encyclopedias are also used for content research.
- 5) Literacy through publishing (upper elementary - middle): Word processors and desktop publishing packages are used to create booklets and newsletters. Multimedia presentation tools are also used by students to create slide shows and photo displays.

- 6) Literacy through problem solving (upper elementary - middle - high): Interactive games and simulations are used in conjunction with content-based work. In such programs students make thoughtful choices based on their understanding of text and visual materials. These choices entail immediate consequences.
- 7) Literacy through telecommunications (middle - high): Email is used to connect students to other schools, to experts, and to shared problem-solving hubs. There is also a growing use of the Internet for accessing information relevant to students' native language and culture, to the interests of individual students, and to support mainstream classroom work.
- 8) Autonomous usage with integration across the curriculum (high): Here computers are used as tools by students as they work on their own projects. When the system is networked, students are able to access their work in a variety of content areas from a number of locations in the school building. (pp. 16–17)

5. Theoretical Framework

Theories are commonly used in educational and social research to build frameworks for studies and offer deeper explanations of individuals' beliefs, attitudes, and behaviors (Creswell, 2014). In the current study, I used Vygotsky's social constructivism and Krashen's second language acquisition theory to provide broad explanations of ESL student, parent, and teacher perceptions about using educational mobile applications to improve the language skills of elementary school students. Based on these two theories, I expected that the use of educational mobile applications would influence the language acquisition process of ESL students because they provide students with varied input in a low-anxiety environment, in which the learner is the center of the learning process (Al-Jarrah, Talafhah, & Al-Jarrah, 2019; Zhang, 2009).

A. Constructivism

During the last three decades, constructivism has gained growing attention in educational research and practice. Although constructivism has been defined differently in the literature, most definitions agree upon certain underpinnings related to the source of knowledge, the role of the learner, the role of the teacher, and the reality. According to Barrett (2008), learners should be active contributors in the learning process rather than passive receivers of the knowledge transmitted by the teacher. Also, the teacher should be a facilitator of the learning process rather than a knowledge owner, because knowledge is constructed by the learner based on his/her previous knowledge or experiences, as knowledge is subjective and there is no single reality.

According to Hultgren (2008), cognitive constructivism and social constructivism have acquired great interest in the constructivist literature. Piaget's cognitive constructivism proposes that knowledge is internally constructed by an individual through interaction with the components of the environment and it varies in agreement

with an individual's previous knowledge and experiences (as cited in Hultgren, 2008). Although both cognitive and social constructivism agrees upon the idea of knowledge construction, social constructivism has provided more attention to the role of social interaction in knowledge construction. According to Vygotsky, interaction with others in a social context helps learners construct new knowledge in agreement with their previous knowledge and experiences (as cited in Hultgren, 2008). Vygotsky used the concept of the zone of proximal development (ZPD) to confirm the role of collaboration and interaction in knowledge construction. According to Vygotsky, there are two levels of development, the first one is what the learner can do individually without any support, while the second is what the learner can do with support (e.g., instruction, tutoring, additional resources).

In the current study, I supposed that mobile learning, particularly educational applications, would be potentially useful for ESL elementary school students because they support a learner-centered environment as well as autonomous learning and allow learners more control over their learning. Thus, learners can choose tasks and activities that meet their needs and build on their previous knowledge. In addition, the use of educational mobile applications supports the concept of the ZPD because they provide ESL students with additional resources and alternate learning strategies until they can achieve tasks without help.

B. Krashen's theories of second language acquisition

Krashen (1981) distinguished between two processes: language learning and language acquisition. According to Krashen, language learning is related to the formal instruction of language and usually focuses on the linguistic forms rather than the communicative purposes of language. On the other hand, language acquisition is the natural absorption of language as a result of authentic interaction with others in a natural low-anxiety environment. Krashen stresses the role of acquisition in language development over language learning, as he stated that language acquisition supports the communicative purposes of the language, while language learning plays the role of monitor for the acquired system.

However, exposure to the target language is not sufficient for language development. According to Krashen (1981), for successful language acquisition to occur, learners need to be exposed to comprehensible input ($i+1$), i.e., input that is slightly beyond the learner's current level. In the current study, I predicted that using educational mobile applications would support Krashen's comprehensible input hypothesis because it allows learners or teachers to choose the input or tasks that meet learners' level (not too difficult, not too easy), particularly in classrooms with a native speaker majority, in which input does not always fit the language level of language minority groups.

Krashen (1981) also confirms the role of affective and emotional factors (e.g., motivation, self-confidence, and anxiety) in the language acquisition process. For instance, higher motivation and self-confidence with low anxiety facilitate language

acquisition, while lower motivation and self-confidence and high anxiety hinder language acquisition. Thus, comprehensible input is not sufficient for successful language acquisition because the affective filter might block the comprehensible input to reach the part of the brain responsible for language acquisition. In other words, comprehensible input should be supplied in a low-anxiety, motivating environment. In line with Krashen's affective filter hypothesis, I predicted that using educational mobile applications could improve ESL students' motivation because they allow learners to choose a variety of tasks and activities that meet their language level and interests. They also allow learners to move through tasks at their own pace without feeling pressure to catch up with peers.

6. Methodology

This section describes qualitative design, the rationale for its selection, the sampling method, data collection procedures, and data analysis plan.

6.1 Research Methodology

A qualitative design was an appropriate approach to this research. This design allowed me to collect a large amount of data about individual beliefs in a short period of time with little expense (see Creswell & Plano Clark, 2011). I used a case study design that involves the use of in-depth interviews. Additionally, the interview data helped explain and explore the factors that shaped these perceptions because this design gives participants an opportunity to reflect on their responses and to provide more details than those collected solely by quantitative methods (Mollaei & Riasati, 2013). It is hopefully provided a general understanding of using educational mobile applications to help ESL learners and bridge a gap in previous studies in this field that only used one type of results (see Valk, Rashid, & Elder, 2010; Al Aamri, 2011; Vázquez-Cano, 2014).

6.2 Population and Sample

This study entirely took place in Carbondale, Illinois, in the academic year 2016/2017. There were six elementary schools in Carbondale including Unity Point Elementary School, Giant City School, Lewis School, Thomas Elementary School, Parrish Elementary School, and Carbondale Middle School. To select the sample for the qualitative phase, I first identified the target and the accessible population. According to Gliner, Morgan, and Leech (2009), the target population included "*all of the participants of theoretical interest to the researcher and to which he or she would like to generalize,*" while the accessible population was "*the group of participants to which the researcher has access*" (p. 117).

The target population of this study included all ESL teachers in public elementary schools from 4th to 8th grade located in southern Illinois, while the accessible population consisted of ESL teachers in public elementary schools from 4th to 8th grade in Carbondale, Illinois. Because there was a small number of ESL teachers in

Carbondale public elementary schools that could participate in this study, the sample included all of them.

Although the teacher sample size was not as large as many of the previous studies (e.g., Yüksela & Kavanoz, 2011; Mollaei & Riasati, 2013; Hismanoglu, 2012b ; Hismanoglu & Hismanoglu, 2011, Al-Jarrah et al., 2019), it was appropriate because the main goal of this qualitative methods study was to obtain a deeper insight into the problem rather than to generalize the results to a larger population (see Onwuegbuzie & Collins, 2007; Al-Jarrah, Talafhah, & Al-Jarrah, 2019).

I used purposive sampling to choose eight participants in order to collect qualitative data through in-depth interviews. This process involved choosing the participants who would provide a richness of data (Patton, 2002), and it also addressed the purpose of the study, which aimed to explore the criteria used by ESL teachers to choose suitable and effective mobile applications for ESL instruction.

6.3 Data Gathering Procedures

Because only a small number of ESL teachers could participate in this study, the sample included all of them. After receiving approval from the SIU IRB, I requested permission from selected schools to begin data gathering procedures through an interview. I asked the public school administrations to send consent forms and cover letters to ESL teachers asking them to sign and provide their email address if they agreed to be participants.

I used purposive sampling to choose eight participants in order to collect qualitative data through in-depth interviews during the 2016-2017 academic year. This number of participants was chosen to enrich the data. Lincoln and Guba (1985) stated, "*in purposeful sampling, the size of the sample is determined by informational consideration*" (p. 202). Furthermore, Creswell and Clark (2011) stated, "*The sample size relates to the question and the type of qualitative approach used*" (p. 174).

Interviews took place at a place and time most convenient to the participants. Most of the teachers took place in their schools. Before the interview, interviewees provided demographic information. I notified the interviewees that all information they provided was for research purposes only. The primary language used in the interviews was English. The average duration of each interview was 30–40 minutes. They were recorded for accurate data transcription. I avoided guiding the interviewees toward any particular answers and encouraged them to express their opinions freely. The interviews were conducted over a two-week period.

6.4 Rigor and Trustworthiness

I used several strategies to increase my study's rigor and trustworthiness. To ensure credibility, I used member checking by reviewing the transcriptions of the interviews with the participants. To ensure dependability, I described in detail the methodology, including the research site, participants, and data collection methods. Additionally, I asked an experienced researcher to review and examine the data collecting and coding

process. To increase transferability, I provided very detailed descriptions of the research, such as the context in which the data were collected, the sampling method, and participants' characteristics. Lastly, to increase conformability, I undertook an audit in which I reviewed several other elements, such as notes, taped data, and interview transcripts.

For the purpose of this study, I first sought the approval of the SIUC IRB. Prior to any survey or interview, each participant signed a formal statement of consent form. For students, since they were minors, the consent form was sent to their parents or guardians. The participants' signature on the consent form indicated that they understood and agreed to participate in the study, understood that they could refuse to participate at any time, and could refuse to answer any question that they were not comfortable with. In addition to the consent form, the information provided by participants was kept strictly confidential and was only used for the research purposes. To encourage individuals to participate, I provided them with information about the purpose and potential benefits of the study.

7. Results

Question was, "What are the perceptions among ESL teachers regarding the use of educational mobile applications to help ESL elementary school students develop their language skills?" Teachers' perceptions and beliefs about using mobile technology in the teaching process affect the successful integration of technology in the classroom (Pepe, 2016; Al-Jarrah et al., 2019). Teachers with negative or poor perceptions toward technology integration are less likely to effectively integrate technology. This study did not examine a large sample of ESL teachers, so they were only interviewed without completing the survey. The teacher sample consisted of eight female teachers with over six years of teaching experience from different elementary schools in Carbondale, Illinois. Two of them stated that they had never attended a professional workshop on integrating technology into the teaching process, while the rest reported that they had attended 1-5 technology workshops. Table 32 presents detailed information about the interviewees.

Table 32: Background of Interviewees (ESL Teachers)

No.	Name	Years teaching	Educational background	Grade currently teaching	Years of teaching with mobile technology	Professional training workshops attended in last 5 years	Technology workshops
1	ESLT 1	11 to 15	Master	5, 6	11 to 15	10+	1 to 5
2	ESLT 2	6 to 10	Bachelor	4, 7	1 to 5	1 to 5	none
3	ESLT 3	16+	Bachelor	4, 8	1 to 5	1 to 5	1 to 5
4	ESLT 4	11 to 15	Master	5, 6	1 to 5	1 to 5	1 to 5
5	ESLT 5	11 to 15	Bachelor	7, 8	11 to 15	10+	1 to 5
6	ESLT 6	6 to 10	Bachelor	5, 7	1 to 5	1 to 5	none
7	ESLT 7	16+	Master	6, 4	6 to 10	6 to 10	1 to 5
8	ESLT 8	11 to 15	Master	8, 7	6 to 10	6 to 10	1 to 5

The interviews revealed that most of the ESL teacher participants had positive perceptions about using educational mobile applications to improve elementary school students' language skills. These participants indicated that using educational mobile applications in the ESL classroom was useful because it increased student motivation and engagement. ESLT2 stated, *"Kids enjoy using educational apps, they feel excited to do more tasks than in a regular classroom."* ESLT4 also commented that *"I feel students continue working more actively."* In addition, ESLT1 indicated that *"educational mobile applications supported the individual learning needs of ESL children because some applications provided varied activities that addressed students with different proficiency levels."* They also provided different types of materials (e.g., audio, videos, photos, and text) that could respond to different learning styles. ESL T7 stated, *"Using apps can help students to work at their own pace. There are slower learners who need more time to conduct a task and there are students who like to practice the same task several times before moving to the next task."*

Participants also stated that using mobile applications can help students improve multiple skills simultaneously. ESLT1 stated the following:

"I sometimes use storytelling applications. They help kids improve their listening and planning skills... They also support creativity and critical thinking as students think about the upcoming events of the story [...] some storytelling apps also give learners the opportunity to create their own stories."

ESLT4 said, *"I use an 'English conversation' application. It provides real-life scenarios and gives students the opportunity to practice listening, reading, and speaking together."* Furthermore, ESLT 8 argued that using these applications improves retention rate: *"they provide a lot of repetition drills so students still remember the words even after two weeks."*

Although most of the teacher participants indicated that they felt comfortable with using educational mobile applications in their classroom, they also expressed some concerns related to classroom management, lack of knowledge, and pedagogical practices. ESLT5 stated, *"Preparing mobile devices and apps takes much of the class time."* Likewise, ESLT 6 said, *"When I use online applications, I waste time solving problems of network connectivity."* Teacher participants pointed out that they can overcome these problems if they have fast and continuous technical support. ESLT1 stated, *"Getting immediate technical support in updating devices, preparing network connections, and installing applications will save their time and increase their motivation for technology integration."*

Participants stated that they would feel more comfortable using educational mobile applications in their classrooms if they had more professional training focusing on technology integration in ESL classrooms. ESLT4 noted, *"I sometimes feel that my classroom practices could not support collaboration or critical thinking [...] Gaining continuous training can help us find resources, know about new apps, improve our pedagogical practices, and manage time effectively."* Furthermore, they indicated that continuous training and workshops would give them an opportunity to share their experiences and benefit from other teachers' experience and accomplishments using educational mobile applications

in language classrooms. ESLT5 mentioned, *“I think that training increases my self-efficacy and motivation toward technology integration... It can also help me identify my goals and get strategies to achieve these goals.”* They recommended that professional training programs address the personal needs of the teachers to enable them to overcome their weaknesses and improve upon their strengths. On the other hand, one of the teacher participants who had never received training for technology integration showed low regard for educational mobile applications to teach ESL elementary school students. ESLT6 argued, *“I think that using educational mobile applications does not add any extra benefit for students [...] as a teacher, I have a lot of responsibilities and using mobile technology will make me feel overwhelmed.”*

Overall, most ESL teacher participants showed a positive perception of integrating educational mobile applications with teaching English to ESL elementary school students. They indicated that using such applications would add an extra benefit for students and help them improve different language skills. It would also help ESL teachers address students' varied levels, learning styles, and needs. However, the participants pointed out that peer and administrator support, continuous training, and technical support are important for effective technology integration.

8. Discussion and Conclusions

This chapter discusses the findings of the study and how the results relate to the existing literature. This study explored the perceptions of teachers regarding the educational mobile applications used to help ESL elementary school students develop their language skills. Qualitative techniques were used for data collection to answer the following research question, What are the perceptions among ESL teachers regarding the use of educational mobile applications to help ESL elementary school students develop their language skills?

To answer these research questions, the qualitative results are discussed below.

8.1 Discussion of the Findings

A. Teacher Perceptions

During the in-depth interviews with eight ESL teachers, most of the teacher participants had positive perceptions about using educational mobile applications to improve elementary school students' language skills. They stated that using these applications in the ESL classroom was useful because it increased student motivation and engagement. This result supported many studies in mobile learning fields (e.g., Al-Jarrah, Talafhah, & Al-Jarrah, 2019; Granito & Chernobilsky, 2012; O'Bannon & Thomas, 2015; Shifflet & Weilbacher, 2015; Riasati, 2012). According to Granito and Chernobilsky (2012), technology provides varied activities to learners with immediate feedback so they feel more excited to finish the activities. In addition, mobile technology allows learners more power to choose the tasks that meet their learning needs. When activities meet learners' level and learning style, they become more excited and motivated.

Participants also stated that mobile applications could help students improve retention rate. This result was consistent with Granito and Chernobilsky (2012) and Merç (2015), which suggested that using mobile technology in language learning improved long-term retention of the target vocabulary and structures. In the present study, teacher participants also reported that using mobile applications in language learning allowed learners to improve multiple skills simultaneously. According to Mollaei and Riasati (2013), mobile technology allowed the integration of different language skills through content-based, theme-based, and task-based instruction. For instance, in task-based instruction, mobile applications might provide activities that require the learners to comprehend, produce, and interact in authentic language situations. This integration helps learners use language for meaningful communication and shift from focusing on language forms to focusing on meaning and function.

Although most teacher participants felt comfortable using educational mobile applications in their classroom, they expressed some concerns related to classroom management, lack of knowledge, pedagogical practices, and technical support. These findings were consistent with Shifflet and Weilbacher (2015), Mollaei and Riasati (2013), and O'Bannon and Thomas (2015). According to Mollaei and Riasati (2013), teachers' concerns about classroom management were related to teaching and learning time or loss of control over the learning process. There are some possible interruptions when using technology in classrooms related to technical problems or students' lack of knowledge. When learners are unfamiliar with mobile technology or the applications, it takes time away from learning and teaching time to explain and give directions about how to use these devices or applications. In regards to loss of control, mobile applications allow learners to choose the activities and move through tasks at their own pace, so some teachers feel that they lose their authority as a teacher. Mollaei and Riasati (2013) stated that some teachers found it difficult to abandon their authority as a provider of knowledge and play the role of facilitator in the classroom with technology. Teachers' concerns have great influence on the use of technology in language classrooms. Negative beliefs or concerns might cause unsuccessful integration of technology or increase teachers' reluctance toward integration. According to Pepe (2016), teachers' concerns about mobile technology integration can be overcome through professional and continuous training that meet their needs or through workshop meetings that give them opportunities to share their experiences and benefit from other teachers' experiences and accomplishments.

8.2 Conclusion

This study contributes to the integration of technology in the teaching and learning process of ESL elementary school students. Understanding teacher perceptions, beliefs, and concerns helps address their individual needs. According to Pepe (2016), positive changes in teacher perceptions and motivation lead to successful technology integration and enhance the teaching and learning process.

Understanding teacher perceptions and concerns may contribute to promoting professional training programs and workshops related to technology integration in language learning and teaching. According to Pepe (2016), professional development and training programs require understanding individual needs and concerns. As she stated, *“Examinations of the teachers’ perceptions are relevant to technology integration because discovering teachers’ needs relative to technology gives them a line of communication that helps schools improve staff development procedures”* (p. 10).

Addressing teachers’ perceptions may encourage meaningful collaboration to achieve successful language learning and teaching. According to Chaudhry, Khaliq, Agha, and Hassan (2015), involving parents in education plays a significant role in student success and contributes to bridging the gap between home and school. In addition, it improves the relationship between parents, children, and teachers and helps parents encourage positive attitudes toward the teaching and learning process.

Finally, it was also suggested that professional training programs be designed to meet teachers’ needs and be accompanied with further support. According to Pepe (2016), continuous professional training helps teachers increase their knowledge and self-efficacy using technology. As a result, they develop positive attitudes and beliefs about technology integration. Furthermore, teachers should be given more opportunities to talk about their innovative strategies and successful experiences using educational mobile applications to teach ESL children and raise awareness about the risks of using such technology and strategies to avoid those risks.

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