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Reading tutors using the iPod to enhance and motivate struggling literacy learners' reading ability

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**Reading tutors using the iPod to enhance and motivate struggling literacy learners'
reading ability**

by

Wei Wang

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

Major: Education (Curriculum and Instructional Technology)

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Ames, Iowa

2008

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ABSTRACT

The rationale behind this thesis is to investigate the numerous influences of the iPod on the language skills of elementary students including oral fluency, reading comprehension and oral expressions. This research additionally aims to analyze the attitude of students along with in-service teachers towards the benefits of the iPod as a new tool of instruction. The results illustrated in the research will enable the readers to acquire a deeper understanding about the potential use of the iPod in elementary school Language Arts classes. This research could also possibly facilitate in-service teachers to discover how to incorporate new technology into the classroom environment by gaining valuable insight regarding students' reactions toward this tool.

CHAPTER 1. INTRODUCTION

The preparation of engaging learning experiences for use in classroom instruction is extremely important and fundamental for encouraging students to develop a positive attitude toward their academic studies. One crucial prerequisite to ascertain a good learning experience is developing students' interest in the subject being studied. The students' use of new technologies as learning tools might prove to be a viable way to gain their attention in class and to increase their motivation to learn. According to Prensky (2001), the current generation of students is represented as being the foremost generation to pursue academics with the aid of today's technology. This generation of students has spent a majority of its lifetime using computers, playing video games, listening to digital music, and possessing video cameras, cell phones, and other entertainment devices. In fact, the average contemporary high school graduate has spent less than 5,000 hours of his/her life in reading activities, while spending more than double that amount of time playing video games (Prensky, 2001). Needless to say, computers and other technology tools such as cell phones and iPods are now integral parts of the lives of today's youth and general population (Prensky, 2001).

With the introduction of diverse technology tools into our society, such devices have begun to appear in our K–12 classrooms. For many teachers, technology poses challenges for them in terms of skills expertise and use in classrooms. But technology also presents extraordinary opportunities for inculcating novel techniques in conventional teaching methods. According to Prensky (2001), students spend more time using technology than in the traditional practice of reading. Bearing this fact in mind, teachers have the opportunity of adopting new approaches that embrace these technologies while teaching subject area content such as literacy. Potentially, such approaches may motivate and encourage students to foster positive attitudes towards reading, thus influencing and enhancing their future academic and professional accomplishments. Galloway (1997) exposed the fact that a majority of teachers who utilized technology as part of their instructional methods also benefited by the use of this technology in their personal lives. Galloway found that the effective integration of technology into instruction was actually due to the teachers' acquaintance and familiarity with these devices in their daily lives, highlighting the fact that teachers are then more likely to use these tools for instruction.

As Farris, Fuhler, and Walther (2004) noted, the need to be knowledgeable about technology and its current and potential application is necessary for developing students'

literacy skills. It is also important to note that teachers should view technology as a tool that enhances learning, rather than as an isolated delivery system (Bitter & Pierson, 2002).

Teachers must critically evaluate hardware, software, and online resources to determine if these tools will assist them in meeting their instructional goals and will provide meaningful opportunities for children to develop, practice, and extend their literacy skills.

Pocket-sized MP3 players such as the Apple® iPod are marketed now for the sheer fun of downloading and listening to a personal, portable playlist of music. They are, however, transforming learning in K–12 schools as well. Already being used by some teachers as a way to collect students' assignments and access them at home, the iPod might have the potential to be an effective learning tool for students to use outside of the classroom. Vess (2006) emphasized the portability feature of the iPod, characterizing this as a positive aspect for students which can prove highly instrumental in promoting their constant commitment to the course topics. According to Vess, a student in her study stated that “the fact that you can listen to a podcast in the car, at the library, etc., makes it much easier to become immersed in the subject” (p. 488). Another benefit of using the iPod for academic purposes is that it allows students to save time in performing academic activities, so that they might use this extra time in pursuing extracurricular activities or for recreational purposes (Vess, 2006).

Blaisdell (2006) stated that iPods provide teachers with a chance to let their students listen to something educational for an additional 30 minutes a day on their way to or from school. The combination of using audio and images may help students stay focused and avoid distractions. In addition, Vess reported that podcasting has the ability to improve students' oral reading and writing abilities. With more students gaining access to iPods and similar portable technologies, it is critical to understand and explore how these tools might impact students' reading abilities.

Statement of the Problem

Technology has great potential to help both teachers and students. The use of iPods for augmented reading practices was chosen as the focus of this study because of the increasing number of iPod users of all ages. Corbeil and Corbeil (2007) indicated that iPods, with 87% of the MP3 market share, have become the most popular technology tool in our society and could therefore play an innovative role as an instructional tool. This cultural phenomenon has also occurred in the K–12 educational environment. Bull (2005) affirmed that:

MP3 players such as the Apple iPods have become the mechanism for distribution of music for today's youth just as the CD and vinyl records filled this role for previous

generations. Educational uses of podcasting build on the foundation of this cultural phenomenon. (p. 25)

How to use iPods in an educational environment has become the main issue. Some educators have started to focus their attention on iPods as instructional tools to motivate students (McHugh, 2005). McCarty (2005) attempted to reevaluate the significance, normally associated with Duke University's iPod experiment, where the devices were first given to students for pedagogical purposes. Later several universities used iPods as instructional tools as well. It seems, however, that most of the research focusing on iPod use in education has occurred in post-secondary schools rather than at the elementary level (McCarty, 2005). Nevertheless, Flanagan and Calandra (2005) stated that the potential uses for iPods in the K-12 environment are quite clear, and their value and effectiveness in elementary classrooms are obvious.

Purpose of the Study

This research study investigated the use of this technology in a graduate level reading tutoring class where three in-service teachers (tutors) used iPods regularly with their elementary student tutees while focusing on improving the students' reading comprehension, oral fluency, and expression. It also examined how this experience, the opportunity to use

iPods while tutoring elementary students, might impact the in-service teachers' (tutors) use of such tools in their future classroom.

Research Questions

The research questions this study sought to answer were:

1. What is the relationship between elementary students' motivation and attitudes towards reading when using an iPod for tutoring help?
2. What is the effect of using an iPod on improving elementary students' oral fluency, expression, and reading comprehension?
3. What are in-service teachers' attitudes towards using iPods with struggling reading learners and their future use of such a tool in their own classrooms?

Summary

Little is currently known about what effect iPods or similar devices might have on improving elementary students' reading ability. This study was designed to examine how in-service teachers and elementary students used iPods during a remedial literacy tutoring experience. Using a case study approach, elementary students were followed during a graduate level tutoring course designed for in-service teachers pursuing a reading endorsement. The next chapter provides an overview of the research related to this study.

CHAPTER 2. LITERATURE REVIEW

Prior to presenting a detailed explanation of each section in the literature review, the reasons for choosing the use of one specific instrument—the iPod—as the research focus will be discussed. In her book *Contributions of Technology to Reading Success*, Irwin (1974) discussed the impressive variety of technological devices used in reading education at that time. The innovations varied in form and complexity and included radio, television, videotape recorders, computers, film loop, cassettes, tape recorders, and microforms to name a few. The task facing educators today is to explore how instructional technology can make greater contributions to a student's success in reading. The choice of the iPod is not due to a fashion or trend, but is made in consideration of its convenience and diverse uses. The iPod is a newer and advanced version of the cassette tape recorder and is used to record and play music, videos, and podcasts, and also serves as an evaluation instrument and daily life tool for students and teachers. Corbeil and Corbeil (2007) indicated that iPods are more popular with students than ever before, and with 87% of the market share, iPods are readily available to both teachers and students. The iPod appears easier to use than more complex devices and programs. For these reasons, the iPod was chosen to be researched and discussed in this study.

This literature review focuses on topics concerning the use of technology in elementary reading classes. Based on the research questions, several themes will be discussed. The first section of the literature review provides a short introduction to current reading challenges in the United States. The second section contains an overview of how technology has been used in classrooms and has enhanced learning motivation among students. The third section documents how audio recording devices have been used in reading classes, including the educational use of the iPod. The final section describes how the use of iPods and podcasting might benefit students' oral and reading performances as well as discussing the special approach used in reading instruction.

In order to find suitable articles for the literature review, the following keywords were used while searching the ERIC and First Search databases: iPod, audio recording, repeated reading, oral fluency and expression. These two major databases are used by researchers worldwide. All the journal articles were found in these two databases. Back referencing was used to find other useful materials and to save time and locate related articles more easily. At the beginning of the search, several folders were created to contain the related articles. If I could not find a sufficient quantity of articles in the electronic database, I used the printed journals to find the appropriate articles or back referencing skills.

Reading Challenges and Struggling Literacy Learners

Jennings, Caldwell, and Lerner (2006) described how reading problems have impacted modern society. Although reading is a personal activity, professionals need to understand the impact of reading problems at the national level. Reading disabilities are not only difficult for students as individuals, but poor reading skills impact our nation and society as a whole.

How serious is the problem of illiteracy in the United States? National longitudinal studies show that more than 17.5% of the nation's schoolchildren, about one million children, encountered reading problems in the crucial first three years of their schooling (Lyon, 2003; National Reading Panel, 2000). Accumulating evidence indicated that many of America's schoolchildren are not mastering essential reading skills. The National Assessment of Education Progress (NAEP) that monitors student learning reported that more than 69% of fourth grade students in the United States performed below proficient reading levels (NAEP, 2003). Further, these problems persisted even in the upper grades—26% of eighth graders and 23% of eleventh graders read below basic skill levels. In light of this information, proper and adequate reading assistance should be provided. Unfortunately, many students with reading problems are in general education classes with little access to special assistance in

reading.

Using Technology for Reading Instruction

The National Reading Panel Report (National Institute of Child Health and Human Development, 2000) scrutinized the scientific research base on reading instruction to identify effective instructional reading approaches and their application to the classroom. Under pressure from politicians and corporations to generate a competitive global work force, teachers were pressured as never before to teach children how to read, even if it meant accomplishing the task without fostering the students' love for reading. Furthermore, with standardized tests being the criteria for monitoring the progress of children, many times teachers disregard innovative instructional methods because of the need to teach to the test. This constant pressure for students to successfully pass tests often leaves them viewing reading as a "subject" rather than something that they want to do for pleasure.

Many teachers have begun to adopt an approach of incorporating technology while teaching different subject matter. As Oblinger (2005) stated, "an increasing number of instructors are experimenting with alternative media formats in their classrooms" (p. 72).

Oblinger also declared that using technology in the classroom would be helpful in:

1. motivating students to participate in reading activities;

2. integrating multiple skills with the use of a single tool;
3. creating realistic grounds for reading, writing, and revising communication;
4. instigating students to investigate sources and think about evidence in new ways;
5. prompting critical thinking and problem-solving skills;
6. allowing teachers to address multiple intelligences and learning styles; and
7. leading teachers to think about their students, classes, and lessons in new innovative ways. (p. 72)

All of the reasons for employing technology mentioned above are appropriate for every content area, including reading and language arts classes. Oblinger (2005) strongly supported the notion that technology can help create healthy and positive attitudes in students and also encourage students to communicate with others in more dynamic ways. He asserted that technology might prove to be an ideal resource for teachers to integrate into their reading classes. Furthermore, digital sound recording may also be the suitable for teachers to use in their reading instruction.

Educational technologies that support the development of students' reading skills include audio books, electronic books, online texts, electronic talking books, and programmed reading instruction. Each will be discussed briefly in the next few sections.

Audio Books

Audio books, sometimes known as *books on tape*, are professionally recorded, unabridged versions of fiction or nonfiction books. Beers (1998) noted that audio books promote students' interest in reading and improve their comprehension of text. These technologies have also been used successfully by students who cannot read traditional printed books because of visual or physical handicaps.

When used in conjunction with written texts, audio books helped improve children's reading skills. Children can listen to the audio version of a book and follow along silently with the printed version. Students can gain practice in reading the text aloud in conjunction with the audio. Beers (1998) asserted:

Hearing text read aloud improves reading ability. The use of audio books with struggling, reluctant, or second-language learners is powerful since they act as a scaffold that allows students to read above their actual reading level. This is critical with older students who may still read at a beginner level. (p.33)

Electronic Books and Online Texts

Electronic books, also known as *e-books*, are electronic texts that are presented visually. Whether available on CD-ROM, the Internet, or special disks, electronic books provide the text as a visual component. Some electronic books incorporate text enhancements, such as definitions of words or background information on ideas. Others offer illustrations that complement the story. One disadvantage of electronic books is that they can be viewed only with a computer or a special palm-sized digital reader; often the text resolution is poor. In terms of their advantages, Anderson-Inman and Horney (1999) noted that electronic books are searchable, modifiable (i.e., font sizes can be increased to meet the needs of the reader), and can be embedded with resources such as definitions and details.

Online texts are those that are available on the World Wide Web. With access to an Internet-connected computer, students can find a wide variety of free online reading materials including books, plays, short stories, magazines, and reference materials. This benefit is especially useful for students in schools that have few resources for the acquisition of new books.

Electronic books and online texts often are equipped with *hypermedia*—links to text, data, graphics, audio, or video. As students read the text, they are able to click on the links to access definitions of words, additional information on concepts, illustrations, animations, and

video—all of which can increase their understanding of the material. Research indicated that hypermedia software has positive effects on student learning and comprehension (see Anderson-Inman & Horney, 1998; Anderson-Inman, Horney, Chin, & Lewis, 1994; Hillinger, 1992).

The use of hypermedia to improve student comprehension of text is likely related to its ability to respond to the needs of an individual learner for information, which results in an increased sense of control over the learning environment and higher levels of intrinsic motivation (Becker & Dwyer, 1994). That is, the interactive features of hypermedia and the users' control of their direction within these information environments may explain some of the learning gains in comprehension (Leu, 2000).

Electronic Talking Books

The term *electronic talking books* has been coined by researchers to refer to electronic texts that also provide embedded speech. The speech component offers a digitized reading of general sections as well as pronunciations of specific words within the text; it supports and coaches students as they read the text of the story (Leu, 2000; McKenna, 1998). Although research is ongoing about the effectiveness of electronic talking books, there already is much

to be said in their favor (for a review, see Leu, 2000; McKenna, 1998). Reinking and Bridwell-Bowles (1966) noted, “Computers, especially those equipped with devices that produce artificial speech, may provide an effective means for increasing decoding skills and reading fluency,” (p. 321).

McKenna (1998) indicated that electronic talking books increased motivation to read as well as promoted basic word recognition. According to research, the use of talking books has shown positive results as an aid to help children improve their comprehension of texts (Hastings, 1997; Lewin, 1997; McKenna, 1998; Reitsma 1988). In addition, children’s decoding skills have been shown to improve with the use of talking books (Miller, Blackstock, & Miller, 1994; Olson & Wise, 1992; Reitsma, 1988). For slightly older readers, talking books feature glossary entries, explanatory notes, and simplified rewordings that provide additional background information needed to understand new concepts in texts (Anderson-Inman & Horney, 1998).

In general, electronic talking books have been found to support reading instruction by providing background information, extended response actions, play actions, and explanatory notes. Talking books also show promise of accelerating reading growth by offering readers immediate access to a word’s pronunciation, thus easing the need of the student to rely on

context cues to understand new words. They also can be equipped with a tracking system for troublesome pronunciations; this system can provide feedback to teachers, enabling them to identify particular categories of words for further student study.

Audio Recording and Reading Instruction

Wikipedia (2006) stated that the invention of digital sound recording and the compact disc (CD) in 1982 brought significant improvements in the durability of consumer recordings. The CD initiated another massive wave of change in the consumer music industry, with vinyl records effectively relegated to a small niche of the market by the mid-1990s. The most recent and revolutionary developments in this industry have been in digital recording, with the invention of purely electronic consumer recording formats such as the WAV digital music file and the compressed file type, the MP3. This generated a new type of portable solid-state computerized digital audio player, the MP3 player. New technologies such as the Super Audio CD, DVD-A, Blu-ray Disc, and HD DVD continue to elevate even the higher standards already present in digital audio storage. This technology has a wide utility range for many associated fields including “Hi-Fi,” “Professional Audio,” “Internet Radio,” and “podcasting.”

More recent emerging technology enables easy voice recording functions on the

computer with many computers having built-in or free downloadable software (see Table 2.1). Microphones enable the process of recording voice narration by the simple click of a button. Once audio is recorded, it can be saved as a digital file and used for diverse purposes. Digital audio files can be: (a) played back on the computer, (b) copied to CDs and MP3 players, and (c) uploaded to websites as podcasts.

Table 2.1 Pre-installed and freely downloadable software (Skouge, Rao & Boisvert, 2007).

	Apple Macintosh	Windows PC
Audio recording	Apple iMovie	Microsoft MovieMaker
	Audacity	Audacity
	Garageband	
Video recording and editing	Apple iMovie	Microsoft MovieMaker

Thus, audio recording has become easy and convenient (Skouge, Rao, & Boisvert, 2007). Teachers, media specialists, librarians, and students can now easily record their own materials. Recording devices are also inexpensive and more accessible which facilitates personalized recordings for keeping the child's needs and aptitudes in mind. These types of audio files can also be easily saved on CDs or as podcasts which can be shared with a wider audience.

Due to the speed and ease of the recording and listening processes, students currently have the dual alternative of being able to listen to their own recording and also rerecording in

order to achieve perfection in the production of the voice files. This presents students with a “command of the moment that is tempered with deliberation and increased self-awareness” (Gamlin, 2005, p. 53). The process of listening to and assessing short student files is equally simple for the teacher, subsequently allowing her to get “frequent glimpses into students’ inter-language development” (Volle, 2005, p. 156).

Gamlin (2005) proposed many positive attributes of using digital voice files in classrooms. He believed that the practice of using these files facilitates:

1. a personalized content consequently making it more meaningful to learners;
2. the providence of permanence to learners’ creative, though not always original, recital;
3. the manipulation thereby reinforcing self-awareness;
4. an intrinsic and playful appeal to the learner;
5. opportunities to instructors allowing them to listen to the output of each individual student regardless of class size or time required, simultaneously ensuring that the students’ efforts will not go unnoticed; and
6. the transition from analog to digital voice media making possible an improved individualism for the learner plus expansion of the learner’s community. (p. 54)

Along with allowing the use of voice files in the classroom, the iPod has additional functions teachers may use for instruction as described in the following section on the educational use of the iPod.

Educational Use of iPod

Pocket-sized MP3 players such as the Apple® iPod are marketed for the sheer fun of downloading and listening to a personal, portable playlist of music. They are, however, transforming learning in K–12 schools as well. The iPod not only affords teachers a way to collect students' assignments and access them at home, it can also become a great learning tool for students to use outside of classrooms. Blaisdell (2006) explained that iPods provide teachers with a chance to let their students listen to something educational for 30 minutes a day on the students' way to or from school. That would become the additional 30 minutes for students to learn more. In addition, holding the iPod gives the students something tactile in their hands while listening to the audio and looking at the images. The combination of audio and images will help them stay focused and avoid distraction that may be keeping them from really succeeding.

Moreover, the iPod may also change the way teachers perform assessment and evaluation. By using iQuiz or other similar assessments, teachers will have more chances to

know students' understanding right away. The Consortium for School Networking (2006) explained that teachers can access the results immediately on a desktop computer and can share them with students on a classroom television or digital projector. With digital assessments, teachers gain immediate insight into "knowing what the students know." They can quickly determine the next steps to use with a class or with individuals. Students, too, can see their strengths and weaknesses immediately, which may motivate them to participate more effectively in their learning. Vess (2006) also stated that podcasting has the ability to improve students' oral or writing abilities. This leads us to how to improve students' reading abilities in the areas of reading fluency, expression and comprehension.

Improving Reading Fluency, Expression, and Comprehension

A definition of fluency needs to encompass more than mere oral reading. *The Vocabulary of Reading and Writing* defined fluency as "freedom from word identification problems that might hinder comprehension" (Harris & Hodges, 1995, p. 85). This definition increased the perception that fluency included comprehension. A synthesis of the *Report of the National Reading Panel* (NICHD, 2000) and *The Literacy Dictionary* (Harris & Hodges, 1995) referred to reading fluency as efficient, effective word recognition skills that permit a reader to construct the meaning of text. Fluency is manifested in accurate, rapid, expressive

oral reading and is applied during, and makes possible, silent reading comprehension. The issue of a definition is not an insignificant but a fundamental mechanism which enables the teacher to make important decisions regarding teaching and the assessment of fluency.

Ensuring that students become fluent readers is one of the major goals of reading instruction (Kuhn & Stahl, 2003; National Institute of Child Health and Human Development, 2000). One reason why fluency is crucially important is due to the fact that fluent readers do not have to intentionally decode the majority of words they encounter in a text. Instead, fluent readers recognize words automatically and accurately, thereby facilitating their ability to construct meaning from text which is always the ultimate goal of reading instruction. The capability of students to read fluently can be enhanced by continual practice involving recurring reading procedures.

For expression, it is always included as part of the reading fluency. Like Hudson, et al (2005) indicated in their study, assessing the three elements of fluency (accuracy, rate, and prosody) provides information about students' individual learning needs and enables the teacher to choose appropriate interventions. In linguistics, prosody is the rhythm, stress, and intonation of speech. Prosody may reflect the emotional state of a speaker; whether an utterance is a statement, a question, or a command; whether the speaker is being ironic or sarcastic;

emphasis, contrast and focus; and other elements of language which may not be encoded by grammar.

Reading comprehension is another important part in reading. But what is reading comprehension? According to Zemelman, Daniels, & Hyde (1998), “Reading means getting meaning from print. Reading is not phonics, vocabulary, syllabication, or other “skills,” as useful as these activities may be. The essence of reading is a transaction between the words of an author and the mind of a reader, during which meaning is constructed. This means that the main goal of reading instruction must be comprehension: above all, we want students to understand what is on a page” (p. 30). It is clear that reading, as exciting, informative, and magical as it can be, is a decidedly complex process.

The *Report of the National Reading Panel* (NICHD, 2000) was unambiguous in its support of repeated reading procedures. References comprising an entire range of procedures in sufficient detail were provided to teachers, so that they could make use of them for students necessitating additional support in developing fluency. How can classroom teachers teach fluency to their students? Several methods have been proven successful. These include repeated readings (Dowhower, 1987; Herman, 1985; Samuels, 1979), reading while listening or echo reading (Carbo, 1978; Chomsky, 1976; Gamby, 1983), the neurological impress

method (Heckelman, 1969), and reading in phrases (Allington, 1983).

Fortunately, the methods stated above are effective in helping less fluent readers. These findings revealed that repetitive reading practice has had a positive impact in helping students increase their fluency and reading comprehension. Repeated reading of the same sentences or passages, however, may result in boredom among students. Creating a podcast or digital voice file may be one alternative to this challenge of keeping students engaged in the reading process (Vess, 2006). The use of a tape recorded passage is another way to provide support during reading. Carbo (1978) reported students making good progress in reading while simultaneously listening to a passage on tape. This format is especially appealing as it allows students to work on their fluency independently. Podcasting is a new kind of audio file. It not only has the same function as audio tape but also provides better quality. In fact, Vess also states that podcasting may have the ability to improve students' oral or writing abilities. Experts on error correction in composition indicated that students who read their work aloud often corrected their written errors during their revisions (Vess, 2006). Moreover, along with the reading, the teacher could remind the class to listen to the expression in his/her voice during the reading, the speed at which the text is read, or when stops or pauses occur. A short discussion of these factors after the reading or before a

student's own oral reading could heighten students' sensitivity to their own reading.

Fluency is an important issue that needs to be taken seriously in reading classrooms. Reading comprehension is another important issue as well. The following teaching strategies have been selected because they are grounded in effective classroom practice and are undergirded by extensive research (Farris, Fuhler, & Walther, 2004).

Scaffolding

When beginning to teach a new reading lesson, the teacher usually models the expected reading behaviors, offering support and guidance to students so that they will be successful in interpreting the words and grasping the meaning of the story. That type of support by a knowledgeable adult is referred to as scaffolding (Bruner, 1986). It is a temporary teaching process that helps a learner solve a problem, complete a required task, or reach a goal that she might not be able to attain without assistance. To see scaffolding at work in a classroom, one would note how a teacher provides interesting book introductions at the beginning of a guided reading lesson. In addition, the teacher might take time to clarify and extend the ideas that children have about a story or provide additional information before reading so that they will understand the concepts to be presented (Fountas & Pinnell, 2001).

Directed Reading Activity

The Directed Reading Activity (DRA) is a popular instructional procedure that can be used with both fiction and nonfiction text (Burns et al., 1999). Betts (1946) described DRA as a strategy that provides students with instructional support before, during, and after reading. The teacher takes an active role as he or she prepares students to read the text by pre-teaching important vocabulary, eliciting prior knowledge, teaching students how to use a specific reading skill, and providing a purpose for reading.

During reading, the teacher asks individual students questions about the text to monitor their comprehension. After reading, the teacher engages students in a discussion focusing on the purpose for reading and follow-up activities that focus on the content of the text and the specific skill that students learned to use.

Directed Reading Thinking Activity

The Directed Reading Thinking Activity (DRTA) developed by Russell G. Stauffer (1969) is a less structured alternative to the DRA. When following this strategy, the control of learning is not characterized as strongly by teacher dominance. Once the steps are modeled and mastered, students assume more of the responsibility for reading stories in the basal text, trade books, or content area materials.

Directed Listening Thinking Activity

Another effective teacher directed comprehension strategy is an adaptation of the DRTA. In its new form it is called the Directed Listening Thinking Activity (DLTA).

Adaptable for readers across the grades, it offers a structure for introducing and discussing stories that are read aloud. Morrow (1984) stated that the activity can significantly increase children's listening comprehension. With practice, students can apply the process when listening to other stories in the future.

Reciprocal Teaching

Another teaching technique that is used in a small group situation and also has the characteristic of being mobile across the curriculum is reciprocal teaching. It is teacher-directed initially, until students understand the components and are competent when using them effectively on their own. In this procedure, the teacher and the students work together to develop an understanding of the text.

In this research, by using repetitive reading audio materials, teachers have more chances to work on the Directed Listening Thinking Activity. After listening, students will gain their understanding both in reading comprehension and listening comprehension.

Often times students are not able to recognize that they make errors on the written page even though they correct them in their oral presentations. Doty, Popplewell, and Byers

(2001) scrutinized whether there was a difference in comprehension between having students read a CD-ROM storybook or a conventional printed text. Doty et al. (2001) concluded that “evidence from this study indicates that the use of CD-ROM storybooks can have a positive effect on reading comprehension for young readers” (p. 6). By using the similar technique of listening to iPod audio files, one may discover whether the iPod will have the same positive effect on reading comprehension for young readers.

Summary

This brief synopsis of the literature related to the research topic provides a starting point for further investigation. From the previous sections, the possible educational value of the iPod has been discussed. The accessibility of iPods today also points toward the feasibility of iPod assisted instruction in reading classes as explained in this study. There are, however, still not enough evidence available on how to effectively use the iPod in specific subject areas such as language arts. In addition, iPods have been used more in higher education than at the elementary grade levels. The following chapter will describe the methodology used to study and understand more about how iPods might be used in the classroom setting and how it might help elementary students with their reading abilities.

CHAPTER 3. METHODOLOGY

This chapter presents a description of the methods used in this case study. Topics included are: (a) research method, (b) selection of participants, (c) data collection, and (d) method used for analyzing and interpreting the data.

Research Method

A case study approach was chosen to investigate the research questions because it provides rich detail that leads to the understanding of how iPods can be used in remedial literacy instruction. Yin (1993) has identified three specific types of case studies: (a) exploratory, (b) explanatory, and (c) descriptive. The data collected for this research study are almost exclusively descriptive data. Using a case study approach allowed the researcher to gather and interpret informative data from individual cases that best tells the story of using iPods in a reading tutoring situation with elementary students. In sum, the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events. Yin (1993) also stated that a case study is best used for descriptive data.

This particular case study approach allows the reader to gain a broader picture of what tutors and tutees experience as they attempt to use iPods during literacy instruction. Data gathered included detailed descriptions of tutor-tutee pair instructions, examples of

personal interaction between the tutors and tutees that occurred throughout the lessons, focus group interview with two tutors and one-on-one interview with one tutor that covered a range of topics.

Research Context

The participants for this study were selected from a graduate level course, Curriculum and Instruction (C I) 588: *Supervised Tutoring in Reading*, offered at a large Midwestern university. C I 588 is a required course for students who have completed student teaching and have obtained teacher licensure or are obtaining a reading endorsement. The C I 588 class time (nine 3-hour Friday sessions throughout the semester) included experiences with informal literacy analysis procedures to approximate a child's instructional range, as well as tutoring strategies to address children's literacy growth. Area families of children in grades 1 through 8 applied for the one-on-one tutoring help offered by a reading improvement clinic associated with the university. Each C I 588 graduate student engaged in 25 hours of tutoring with an assigned child with literacy needs. This typical time frame required each tutoring pair to meet two or three times a week.

To accommodate the variety of schedules, each tutor/tutee pair arranged the tutoring days, times, and location with each family responsible for that tutee's transportation. Family

and tutor schedules determined the weekly tutoring schedule. The following section describes how participants were selected for the study.

Selection of Participants

Both in-service teachers (tutors) and elementary school students (tutees) were asked to participate in this study. Before the selection of participants, a demonstration presentation about how to incorporate iPods in literacy classrooms was given by the researcher. After the presentation, in-service teachers (tutors) who attended C I 588 were introduced to the research topic. When the in-service teachers fully understood the purpose of this research, two sign-up sheets were passed around to gather contact information for possible participants. Those participants who volunteered were required to use iPods as learning tools during several of their tutoring sessions with tutees. Even though the in-service teachers agreed to participate, the researcher still needed to explain the purpose of the research to tutees and tutees' parents.

There were a total of six participants (three in-service teachers [tutors] and three K–6 elementary school students [tutees]) who were selected to participate in this study. Differences in participants' ages, gender, and teaching experiences were considered during the selection process. All participants, including elementary students' parents and/or

guardians, were asked to sign a consent form. To provide detailed information about participants, each tutor/tutee pair is described below.

Study Pair One: Ester and Lily

The first study pair was Ester (tutor) and Lily (tutee). Ester graduated from the university who was offering this course in spring 2008 as an early childhood education major and was working on her reading endorsement. She completed her student teaching in a second grade classroom and had several practicum experiences in grade levels ranging from kindergarten to fourth grade. Currently, she is working as a classroom teacher in a nearby large school district.

Lily was a seven-year-old second grade student. She was really shy and did not talk to others much. However, she was curious about all different kinds of things which included the different instructional tools. Because of her parents' jobs, she traveled to different countries during her childhood and was homeschooled and taught by her mother. Lily's mother wanted her to participate in this tutoring experience to improve her reading fluency and decoding skills. Her mother was also very curious as to how these tutoring sessions could help Lily's reading ability.

Study Pair Two: Emily and Ian

The second study pair was Emily (tutor) and Ian (tutee). Emily completed her student teaching in spring 2008, finishing a special education placement in third grade in a rural town about 40 minutes from the university. At that time, she worked with a number of low-level readers who read at least two years below grade level. She recently began a new position co-teaching a fourth and fifth grade special education classroom. Even though Emily was taking a graduate class while teaching full time, she was always well prepared and organized for her tutoring sessions. Emily was an enthusiastic teacher who was very interested in incorporating technology into her teaching.

Ian was a seven-year-old second grade student. His mother enrolled him in the tutoring sessions because he needed to work on his reading fluency and comprehension skills. Ian had three siblings, who are all sisters. Ian was very energetic and he liked to tell stories about things that happened to him and to others. Ian also liked transformers and swimming. He always brought candies with him that were shaped like transformers while he was having the tutoring sessions.

Study Pair Three: Ashley and Brian

The third study pair was Ashley (tutor) and Brian (tutee). Ashley was working on her reading endorsement offered by the university. She planned to be a secondary English

teacher focusing on the eighth and tenth grades. She was energetic and eager to learn different kinds of learning approaches.

Brian was a nine-year-old third grade student. Brian came from a big family. He had three sisters and he liked to play with them. He needed assistance with a variety of reading skills, especially his fluency. Because Brian liked to perform in front of people, his reading expression was already quite good.

Research Procedures

Prior to sending the consent forms to all the participants, approval for the study was obtained from the Institutional Review Board at Iowa State University. A copy of the research approval form can be found in Appendix A. After receiving signed consent forms from all participants, a detailed training workshop was provided where the researcher met with each tutor individually before the start of the tutoring sessions. The researcher demonstrated various functions of the iPods and answered the tutors' questions. If any of the tutors wanted to create files for their tutoring sessions, the researcher taught them how to create those files as well. After the tutors knew how to use the iPods, they explained the features of iPods to their tutees during the tutoring sessions. When the need for further instructions or help arose, the researcher would meet with the tutors before or after their

tutoring sessions.

Each tutor used the iPod in a variety of ways with his/her tutee. Throughout the three-week tutoring period, each pair met three times per week, with each tutoring session lasting one and one-half hours. During each tutoring session, the tutor selected appropriate picture books for her tutee and narrated the text into the iPod. Tutees were asked to listen to the recording and to re-record the audio file by themselves. Tutees were also required to listen to their own audio files with their tutors and suggestions would be made by the tutors. Due to the different tutoring content each pair might have, tutors utilized the methods which best suited their tutees. Tutors also created an iQuiz comprehension exam for their tutees to take before and after the picture books were finished. Following each tutoring session, the elementary students (tutees) were asked to listen to the recordings made during that session at least five times before the next tutoring session. At the end of the study, the tutee took a post-test over the original book once again, documenting the his/her speed of fluency, oral expression, and comprehension.

Data Collection

The study involved three tutor/tutee pairs who were participating in a reading clinic at a Midwestern university. Table 3.1 outlines the data collected to answer each research

question. This investigation was a case study, so narrative and descriptive data were gathered to answer the research questions posed. For three weeks, the tutors (in-service teachers) used iPods periodically with their tutees (elementary students) for various instructional tasks.

Table 3.1 Data collection matrix for research questions

Research Question	Data Source #1	Data Source #2	Data Source #3	Data Source #4
1. What is the relationship between elementary students' motivation and attitudes towards reading when using an iPod for tutoring help?	Motivation Survey for Elementary Students	Tutoring Session Observations		
2. What is the effect of using an iPod on improving elementary students' oral fluency, expression, and reading comprehension?	Reading Pretest	Reading Posttest	Tutoring Session Observations	Log-in Sheet
3. What are in-service teachers' attitudes towards using iPods with struggling reading learners and their future use of such a tool in their own classrooms?	Tutoring Session Observations	C I 588 Class Observations	Focus Group Interview and one-on-one interview	

Five techniques were used to collect data for this study. First, each elementary student took a pretest/posttest that measured the student's speed of reading fluency, oral expression, and comprehension (see Appendix B). Before completing the pretest, each tutor selected a picture book that was deemed appropriate for the tutee's reading level. As the elementary

student read the picture book out loud, the tutor recorded the student reading the book with the iPod. This recording was then used to measure the student's reading fluency by counting the number of words the student said per minute. The more words the student said, the better fluency skills could be interpreted. Meanwhile, oral expression was evaluated during the reading aloud. Each tutor received a rubric sheet asking them to evaluate whether the tutee read the sentences using proper intonation or correctly expressed the characters' feelings by circling one of four options ranging from "none" to "great" (see Appendix B). Tutors also needed to write their comments about their tutee's performance. After reading the book out loud, the elementary student completed a five to seven question multiple choice test (using iQuiz Maker on the iPod) that measured the student's comprehension of the material read in the book (see Appendix B).

In addition to the pretest/posttest, the elementary students (tutees) completed a motivation questionnaire that included 10 items with a 1–5 Likert scale (1= "I strongly disagree," 2= "I disagree," 3= "No comment." 4= "I agree," 5= "I strongly agree") (see Appendix C). The tutor read the questionnaire to the tutee and helped him/her circle preferred responses. This questionnaire included questions focused on the student's level of experience with iPods. Elementary students evaluated the iPods based on their learning

experiences with using the iPods for reading activities. The elementary students were asked whether the iPods were helpful for improving their reading abilities. Other items addressed the elementary students' perceptions of using iPods as instructional tools in the classroom.

The researcher attended three C I 588 class sessions to observe the in-service teachers' (tutors) interactions in class with the course instructor and material. The purpose for conducting observations in the C I 588 classes was to understand the tutors' reactions to the iPods and recognize potential challenges that might arise due to their use during the tutoring sessions. The researcher also met with each tutor participant to provide instruction and support for using the iPod. Specifically, the researcher provided an overview of how to record using the iPod, how to listen to a recording, and how to use the iQuiz Maker.

In addition to attending CI 588 class sessions, the researcher also observed each tutor/tutee pair at least twice as they worked together using the iPod during tutoring sessions. The researcher focused her observations on the tutee's reaction to the iPod and how each tutor used the iPod during the instructional activity. Another aspect that was observed by the researcher during the tutoring sessions was the interaction between the tutee and his/her tutor.

The researcher also conducted a focus group interview with the two participating in-service teachers (tutors) and one-on-one interview with one participating in-service

teacher (see Appendix D). While it has been noted that audio recording an interview may make some participants uncomfortable and may affect what they say in an interview, it has also been noted that audio recording captures much more from an interview than can be recalled by a researcher (Taylor & Bogdan, 1998). Questions asked during this interview focused on the in-service teachers' (tutors) attitudes toward using the iPod for reading instruction and how they felt the iPod impacted the students' performances on remedial reading tasks. The focus group interview and one-on-one interview each lasted approximately 60 minutes.

Finally, to better understand how tutees used the iPods outside the tutoring sessions, log-in sheets were included as a data collection technique (see Appendix E). Several log-in sheets were given to the tutees at the beginning of the tutoring sessions to document the use of the iPods outside of the tutoring sessions. Each tutee was asked to track the time he/she used the iPod and to describe the purpose for using the iPod outside the classroom. The tutor was responsible to check the log-in sheet at each tutoring session.

Method of Analyzing and Interpreting the Data

In this study, the data collected from the different techniques could be organized into two major groups - quantitative data and qualitative data.

Quantitative Data

The pretest/posttest and the motivation survey were used to collect quantitative data. In the pretest/posttest, the results were reported in grades and percentages. The researcher analyzed the data by comparing the results from the two tests and interpreting the participants' improvements in their reading abilities from those results. For the motivation survey, the researcher counted the responses from each participant and created a table for interpreting the results. With the limited number of participants, however, the researcher used more of a descriptive analysis to interpret those results.

Qualitative Data

For the qualitative data, the researcher audio recorded all of the interviews which were later transcribed for coding the data. Coffey and Atkinson (1996) wrote that “the segmenting and coding of data are often taken-for-granted parts of the qualitative research process. All researchers need to be able to organize, manage, and retrieve the most meaningful bits of our data” (p. 26). In this study, open data coding was used, a process in which the raw data—in this case the transcripts from the interviews—were systematically categorized. From these categories, themes emerged and were developed for final analysis.

In addition, field notes were used to support interview results and research questions.

After each observation, the researcher wrote field notes that described her observations of various research contexts. The field notes were created from all the observations conducted in tutoring sessions and the C I 588 classes. Grouping the related paragraphs together created the supportive evidence for the researcher to interpret the findings.

Summary

In this chapter, the research study participants were introduced. Detailed information about the research context, methodology, and research procedures were also explained. The five techniques used to collect data for supporting the findings were shared. The next chapter will report the results for this study.

CHAPTER 4. RESULTS AND FINDINGS

This study focused on using iPods as instructional tools with three elementary students enrolled in a reading clinic. The reading tutors (in-service teachers) used iPods with their tutees (elementary students) during several tutoring sessions. Throughout the study, data were gathered to understand the effect of using iPods on improving elementary students' literacy skills and on the effects iPods might have on students' motivation and attitudes towards reading. Data were collected using five sources based on the research questions posed.

When the study began, tutees were asked to complete a reading pretest that helped document the tutees' literacy skills prior to using the iPods. After three weeks of tutoring instruction, tutees were asked to take the same reading test again as a posttest. The researcher visited several tutoring sessions to observe the interactions between the tutee and the tutor when using the iPod. In addition, the researcher visited the C I 588 class four times during the semester, and these observations were also included in the field notes. Tutees were given log-in sheets so they could document how they were using the iPods outside of their tutoring sessions. Finally, tutees were asked to complete a motivation survey, and tutors were asked to participate in a focus group interview with the researcher at the end of the study. Refer to

Table 3.1 to review the types of data that were collected to answer each research question.

Research Question Results

In this chapter, an analysis of the data gathered is presented. The chapter is organized by stating each research question and then presenting the results for each question.

Research Question One

Research question one was stated as follows: What is the relationship between elementary students' motivation and attitudes towards reading when using an iPod for tutoring help?

Responses from the motivation survey were counted to understand the relationship between the elementary student tutees' motivation and attitudes toward reading. Tutees' responses from questions one, four, six, and nine represent their attitudes towards using iPods. From their responses, it appears all three tutees liked to use the iPods for tutoring (see Table 4.1). Moreover, tutees' responses also indicated they did not think that using an iPod was hard, and two of the tutees indicated they did not get nervous using an iPod when answering questions. Data collected during the observations can be used to support these findings. In one tutoring session between Esther and Lily, Lily expressed that she liked using the iPod and also wanted to use it more during classes. Esther asked her tutee how she liked the iPod.

Lily indicated she loved using the iPod, and she told Esther she would like to record her own voice. Esther told her that she will use the iPod more in her tutoring classes, and she can sometimes take the iPod back home to listen to more books [Lily, 6/19/08, tutoring observation session].

Table 4.1 Tutee's attitude related responses of motivation survey

Question	Strongly Disagree	Disagree	No Comment	Agree	Strongly Agree
1. I like to use the iPod during my reading class. (Attitude)				Brian	Ian Lily
4. I get nervous when I use the iPod to answer questions. (Attitude)	Ian Lily		Brian		
6. I noticed that my expression improved, after I used the iPod for 2-3 weeks. (Attitude)			Ian Lily		Brian
9. Using an iPod is hard. (Attitude)	Brian Ian	Lily			

Survey questions two, three, five, seven, eight, and 10 revealed how the iPods motivated the tutees when reading (see Table 4.2). The tutees' responses to the motivation survey questions were mixed. All three tutees agreed or strongly agreed that the more they used iPods for reading, the better they would read. During one tutoring session, Emily commented, "Ian likes to use the iPod to listen to the assigned story books. When I said that he can keep the iPod and listen to them again, Ian said, 'Yeah!' and smiled" [Emily, 7/03/08,

tutoring session observation].

Table 4.2 Tutee's motivation related responses of motivation survey

Question	Strongly Disagree	Disagree	No Comment	Agree	Strongly Agree
2. I would like my teachers to use the iPod in class. (Motivation)					Brain Ian Lily
3. The more I use the iPod for reading, the better I can read. (Motivation)				Lily	Brian Ian
5. I frequently listen to an audio book or story anywhere and anytime while I am using iPod outside of school. (Motivation)			Brian Lily	Ian	
7. I listened to my assignments more times on the iPod than I would have read them out of a book. (Motivation)	Ian	Lily	Brian		
8. I would pay attention more in class if my teacher would sometimes let us use iPods. (Motivation)	Brian Ian		Lily		
10. I think using iPod in class will make my learning more interesting. (Motivation)				Lily	Brian Ian

Although all three tutees agreed that they would like their teachers to use iPods more in class, they did not think they would pay more attention if they were able to use an iPod in class. One student justified that response by saying he already paid attention in class. During one tutoring session, Brian commented, "I don't think I'll pay more attention in class if my

teacher is using iPods in class, because I've paid a lot of attention already" [Brian, 7/14/08, tutoring session observation].

A couple of survey questions did not have positive student responses towards motivation. Only one tutee agreed that he/she frequently listened to an audio book on the iPod outside of class, while the other two tutees responded to this question with, "No Comment." Mixed responses were gathered for question seven, "I listened to my assignments more on the iPod than I would have read them out of a book." One tutee selected "No Comment," one tutee responded that he/she "Disagreed" with the statement, while the third tutee said that he/she "Strongly Disagreed" with the statement.

Research Question Two

Research question two was stated as follows: What is the effect of using an iPod on improving elementary students' oral fluency, expression, and reading comprehension?

In order to administer a correct and reliable pretest and posttest examination, the content of the two tests must be the same (Dimitrov & Rumrill, 2003). In this study, the posttest was given three weeks after the pretest. Each tutor selected a picture book appropriate for the tutee's reading level. The pretest/posttest was then used to determine any progress the tutees made to improve selected reading abilities using the iPod during the

tutoring experience. Three parts were included in the pretest/posttest (see Appendix A). The first part addressed fluency, the second part addressed reading expression, and the third part focused on reading comprehension.

In this test, each tutor chose a book which matched the tutee's reading level. The tutee was asked to read the content out loud. The tutor used an iPod to record the tutee's reading and calculated the words spoken per minute after the tutee finished reading a passage. The fluency speed for all three tutees increased from the start of the tutoring sessions to the end (see Table 4.3). Lily increased her fluency speed from 41 words per minute to 78 words per minute (90.24% increase). Ian increased his fluency speed from 53 words per minute to 67 words per minute (26.42% increase). The third tutee, Brian, also made progress from 21 words per minute to 29 words per minute (38.10% increase). According to the table, Lily's fluency speed increased the most. It is interesting to note that Lily used the iPod almost everyday at home or at tutoring sites as documented on her log-in sheet. In contrast, Brian seldom used the iPod at home or outside of the tutoring sessions (see Table 4.4).

Table 4.3 Pretest and posttest results for tutees' reading fluency

Name of	Total words	Pretest	Post-test	Difference	Percent
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Tutee	of Passage	Word/min	Word/min		Change in Fluency
Lily	455	41	78	37	90.24 %
Ian	184	53	67	14	26.42 %
Brian	85	21	29	8	38.10 %

During the instructions, tutees were provided with log-in sheets. Tutees were asked to track their iPod using times outside the tutoring sessions. From Table 4.4, Lily used 277 minutes for listening to the audio files or doing the practices after the tutoring sessions. Ian used 93 minutes. However, Brian did not use the iPod after the tutoring sessions, because his mother did not want him to do extra homework after tutoring sessions. (see Table 4.4)

Table 4.4 Log-in sheet results

Name of Tutee	Total minutes used	Total iPod using times
Lily	277	14
Ian	93	7
Brian	0	0

The second part of the pretest/posttest documented the tutees' expression. In this part, the tutor subjectively evaluated the tutee's expression as the tutee was reading the story. Tutors were provided with the rubric from one to four (1= None; 2= Partial; 3= Good; 4= Great). When the tutees were reading aloud, the tutors had to judge whether tutees read the sentences with proper intonation, correctly expressed the feelings of characters in the book, and/or pronounced the words correctly. The tutors circled one of the choices on the rubric

and wrote comments about the tutee's expression. At their first tutoring session, each tutee read sentences with little intonation and with a number of mistakes. All three tutors evaluated their tutees' expression as partial or good at that time. Tutees did not seem to self-correct or use any noticeable word decoding strategies. At the posttest, however, the satisfactory level of tutees' intonation was changed from level 2= Partial to level 3= Good. The intonation of two tutees even reached level 4= Great. The satisfactory level of pronunciation also improved greatly from level 2= Partial to level 4= Great. One tutee had a huge improvement, making only two mistakes and reading more fluently. Although some tutees may have had great intonation already at the beginning of the iPod assisted instruction, they still had trouble pronouncing some words. After practicing during tutoring sessions, they were able to read the story out loud with great intonation and pronunciation (see Table 4.5).

Table 4.5 Pretest and posttest results for tutees' oral expression

Name of Tutee	Proper Intonation		%	Correctly Expressed Character's Feelings		%	Pronunciation		%
	Pretest	Posttest		Pretest	Posttest		Pretest	Posttest	
Lily	2/4	3/4	50%	2/4	3/4	50%	2/4	4/4	100%
Ian	3/4	3/4	0%	3/4	3/4	0%	3/4	4/4	33.3%
Brian	2/4	4/4	100%	3/4	3/4	0%	3/4	3/4	0%

The last part of the pretest/posttest covered reading comprehension. Tutees used the iQuiz program that was installed on the iPods to answer 5–10 reading comprehension

questions about their picture books written by the tutors. However, there was no significant change between the pretest and posttest results, because all tutees did well on the pretest. Lily answered all the questions correctly on the pretest and the posttest. Ian answered 10 questions, with 8 correct responses on the pretest and 9 correct answers on the posttest. Ian gained one more correct answer on the posttest. Brian answered 6 questions with 5 correct responses at the pretest. On the posttest, Brian answered all the questions correctly. It appears that all of the tutees had a good understanding of the book, in terms of answering questions about the book, prior to taking the test. According to the researcher's observation, some mistakes might have occurred because the iQuiz program moved rather quickly between questions – tutees were given only 15 seconds to answer a question. Still, two of the tutees showed a slight improvement in the area of reading comprehension (see Table 4.6).

Table 4.6 Pretest and Posttest Results For Tutees' Reading Comprehension

Name of Tutee	Total Number of Test Questions	Pretest Correct Answer	Posttest Correct Answer	Difference	Percent Change in Reading Comprehension
Lily	5	5	5	0	0.0 %
Ian	10	8	9	1	12.50 %
Brian	6	5	6	1	20.00 %

Research Question Three

Research question three was stated as follows: What are in-service teachers' attitudes

towards using iPods with struggling reading learners and towards using such a tool in their future classrooms?

Two methods were used to collect data to answer this research question. The first method was conducting both a focus group interview with two tutors and a one-on-one interview with one tutor who can not participate in the focus group interview and the second one was in-class observations. During the focus group interview, Emily commented, “I definitely believe using the iPods as instructional tools in literacy classroom is possible and can be incorporated easily” [Emily, 07/18/08, Focus group interview]. Esther also commented, “I think there’s potential of using the iPods in reading instruction” [Esther, 07/18/08, Focus group interview]. Moreover, when the tutors were asked during the interview about what their attitudes were toward using iPods for remedial reading instruction and their use of such a tool in their own classrooms, they all gave positive responses. Ashley commented on this question, “At first, I thought using iPods would be difficult, but after the tutoring sessions, I don’t see there’s any reason to resist using it” [Ashley, 07/19/08, One-on-one interview]. Ashley also commented, “iPod provided teachers another option to enrich the instruction and inspire students’ interests” [Ashley, 07/19/08, One-on-one interview].

During the interview, Esther also commented on how she would use an iPod in her future classroom. She remarked, “Definitely I will use iPod in teaching and will use it as the tool for lower level students. I will ask students to listen to the audio for several times and ask them to record themselves, so I can track their improvement” [Esther, 07/18/08, Focus group interview]. Emily also thought she might use iPods as an instructional tool at a reading center. She commented, “Hmmm, I think the iPod can be used as tool at a reading station. I attended a workshop. The teachers there used iPods in their reading stations. This gives students chances to learn, even if teachers do not have enough time. Teachers can assign readings for students or record the reading for them.” Esther nodded her head while Emily shared her idea, and Esther commented, “I agree” [Esther, Emily, 07/18/08, Focus group interview]. This dialogue confirmed that after using the iPods, tutors did agree that there was good potential of using iPod as an instructional tool.

The researcher attended three C I 588 class sessions to observe in-service teachers (tutors) during in-class interactions with course material. The purpose for conducting the observations in the C I 588 classes was to understand the tutors’ reactions to the iPods and recognize potential challenges that might arise due to their use during the tutoring sessions. In the sharing session in the CI 588 class, tutors were asked to share one thing the tutors

learned from their tutees. From their sharing, Ashley thought the use of the iPod was definitely useful for the tutors. Ashley also described her tutee in the tutoring session; her tutee likes to listen to his voice. Ashley used a voice memo to record him, and he would ask to listen to it again and again [Ashley, 06/28/08, in-class observation]. Furthermore, Emily also commented during the observation, “By recording students’ reading aloud and letting students listen to it, students could realize how fast or how many mistakes they said or made. The results are amazing” [Emily, 07/18/08, observation]. The three tutors shared their thoughts about using iPods as instructional tool in different ways, but they all agreed that iPods do have potential as literacy instructional tools.

Summary

In this chapter, the detailed results of the research questions were provided. The results of research question one showed tutees’ high motivation may have positive influence in their attitudes. The results of research question two showed the slight improvement of tutees’ reading fluency, expression, and reading comprehension. The results of research question three presented tutors’ positive feelings of using iPods in their future teaching. Based on the findings found in this chapter, the next chapter will discuss these findings, as well as offer some recommendations to improve the use of iPods during class teaching or

suggestions for future research.

CHAPTER 5. DISCUSSION AND RECOMMENDATIONS

Review of the Study

This study focused on the use of iPods as instructional tools for elementary students enrolled in a tutoring experience associated with a reading clinic. In-service teachers serving as reading tutors used iPods with their tutees (elementary students) during several tutoring sessions. Throughout the study, data were gathered to understand the effect of using iPods on improving elementary students' literacy skills as well as the effects using iPods might have on students' motivation and attitudes towards reading.

Data were collected using several techniques based on the research questions posed. The first data collection technique used was a pretest/posttest that helped the researcher understand the tutees' reading improvement gained after using the iPod as an instructional tool. In addition, a motivation survey was used to measure the tutees' attitudes and motivation towards reading. The third data collection technique was observation by the researcher during both C I 588 class sessions and the tutoring sessions. From these observations, tutees' and tutors' interactions with iPods were tracked. A focus group interview was conducted with the tutors to investigate their use of the iPods with their tutees and to explore the possibility of the tutors using such instructional tools in the future. The last data collection technique was a log-in sheet that was used to document evidence of the

tutees' interactions with iPods outside the classroom. As a result, several major findings were revealed and will be discussed in the following section.

Discussion

Three research questions were examined in this study, resulting in the three major findings discussed in this section. The first research question was “What is the relationship between elementary students’ motivation and attitudes towards reading when using an iPod for tutoring help?” Results indicated that the elementary students’ (tutees’) love of using the iPods during tutoring sessions was clear. Furthermore, it did appear that students’ motivation toward learning with the iPods did increase. Audio books, sometimes known as *books on tape*, are professionally recorded, unabridged versions of fiction or nonfiction books. Beers (1998) noted that audio books promoted students’ interest in reading and improved their comprehension of text. iPods have similar features as these older technologies, so the audio files which were created by the tutors and the elementary students on the iPods in this study might have contributed to the students’ interest in reading and slightly improved their comprehension of the text. Oblinger (2005) strongly supported the idea that technology can help create healthy and positive attitudes in students and also can encourage students to communicate with others in more dynamic ways. Based on the researcher’s tutoring session

observations and the results from the motivation survey, the tutees all demonstrated and reported high interest and motivation in using the iPods and asked to use them more when they were having tutoring sessions. The three tutees expressed that they would like their own classroom teachers to use iPods for instruction as well.

The second research question was, “What is the effect of using an iPod on improving elementary students’ oral fluency, expression, and reading comprehension?” According to the results, elementary students (tutees) did improve their oral fluency and oral expressions throughout the duration of this study. On average, the tutees’ reading fluency improved more than 25 % when comparing their pretest scores with their posttest scores. In fact, one tutee’s scores increased from 41 words per minute on the pretest to 78 words per minute on the posttest. In early research, Carbo (1978) reported that students made good progress in reading while simultaneously listening to the reading passage on cassette tape. This format was especially appealing as it allowed students to work on their fluency independently. When using iPods, today’s elementary students were able to listen to recorded reading passages in much the same manner as when tape recorders were used years ago. The ubiquitous nature of the iPod technology also tended to influence the listening patterns of these elementary students.

The tutees' reading expression scores also changed from the partial expression level to the good or great expression level when evaluated by their tutors at the beginning and end of the study. Vess (2006) stated that podcasting may have the ability to improve students' oral and writing abilities. Using technology such as the iPod, children can listen to an audio version of a book and follow along silently with the printed version. Teachers can remind students to listen to the expression in the voices they hear. Also, students can gain practice in reading the text aloud in conjunction with the audio. Beers (1998) reported that "Hearing text read aloud improves reading ability" (p.33).

During this study, the tutees' reading comprehension did not improve significantly. Tutors were asked to write 5–10 comprehension questions about the book their tutees were reading. Since all of the tutees' pretest scores were high, their scores did not significantly improve at the end of the study because there was little room for growth. So, it is questionable whether the comprehension questions written by the tutors were appropriate or suitable to measure the students' comprehension skills. This aspect would need further investigation and support in terms of teaching the tutors to skillfully write effective reading comprehension questions.

From Prensky's (2001) observation, students love to use a variety of technology

devices. For this study, tutees were asked to complete the comprehension test using a program called iQuiz on the iPod. This program was limited in terms of its capabilities for adjusting to students' learning styles. The settings of time could not be easily adjusted. For example, no matter how quickly or slowly the students could read, iQuiz would only provide them with 10 seconds to answer the question. Due to this feature, it appeared that the tutees became easily discouraged and their motivation to use iQuiz decreased. Although the tutees were excited to use iQuiz at the beginning of study, they soon lost interest after becoming frustrated with the results.

The third research question was "What are in-service teachers' attitudes toward using iPods for struggling reading learners and their future use of such a tool in their own classroom?" According to the data collected from the focus group interview and various observations, the in-service teachers (tutors) all were very positive about using the iPod as an instructional tool, especially with struggling readers. All three tutors agreed that iPods have the potential of being very useful instructional tools in the classroom. One tutor suggested several ways of using iPods in the classroom, such as at a reading center for low level students. In addition, she shared that two teachers she had met in a workshop were already using iPods with struggling readers.

Many teachers have begun to adopt an approach of incorporating technology while teaching a variety of subject content areas. As Oblinger (2005) stated “an increasing number of instructors are experimenting with alternative media formats in their classrooms” (p. 72).

Specific to teaching reading, Oblinger acknowledged that using technology in the classroom would be helpful for:

1. motivating students to participate in reading activities;
2. integrating multiple skills with the use of a single tool;
3. creating realistic grounds for reading, writing, and revising communication;
4. encouraging students to investigate sources and think about evidence in new ways;
5. prompting critical thinking and problem-solving skills;
6. allowing teachers to address multiple intelligences and learning styles; and
7. prompting teachers to think about their students, classes, and lessons in new innovative ways (p. 72).

For literacy education, the concept of audio recording is not new and has been used for many years. Today, many instructors are using iPods in a similar manner, but we need to focus on expanding those uses to include the ideas of Oblinger and others.

Thus, using devices such as iPods for audio recording has become easy and convenient (Skouge, Rao, & Boisvert, 2007). Teachers, media specialists, librarians, and students can now record their own materials as recording requires very little time or effort, and the recording device is very portable. Currently, due to the speed and ease of the recording and listening processes, students have the dual alternative of being able to listen to their own recording and to also rerecord in order to achieve perfection in the production of the voice files. This presents students with a “command of the moment that is tempered with deliberation and increased self-awareness” (Gamlin, 2005, p. 53). In addition, Gamlin has proposed many positive attributes of using digital voice files in classrooms. He believed that the practice of using such files would result in:

1. a personalized content consequently making it more meaningful to learners;
2. the providence of permanence to learners’ creative, though not always original, recital;
3. the manipulation thereby reinforcing self-awareness;
4. an intrinsic and playful appeal to the learner;

5. opportunities for instructors to listen to the output of each individual student regardless of class size or time required, simultaneously ensuring that the students' efforts will not go unnoticed; and
6. the transition from analog to digital voice media makes possible an improved individualism for the learner while expansion of the learner's community. (p. 54)

Teachers can use iPods to track students' progress in more rapid and more convenient ways. The process of listening to and assessing short files created by students is simple for a teacher and subsequently allows her to get "frequent glimpses into students' inter-language development" (Volle, 2005, p. 156). All three tutors in this research study indicated that the iPods were not difficult to use and were very convenient for evaluation and assessment purposes.

Limitations of the Study

This study was exploratory in nature, and it can not be assumed that all tutors and tutees involved in this course would have reacted to the iPods and their instructional uses in the same way. Since the tutor was an important factor in the implementation of the iPod within the context of the course, it should be noted that all three of these tutors volunteered and were open to experimenting with the iPods in a tutoring situation.

Recommendations and Future Research

Due to the small sample size and the participant selection process used in this study, the results are informative but difficult to generalize to a larger population. The individual differences among participants and their prior knowledge with iPods might have exaggerated the effect in such a limited study. Nevertheless, the results presented here indicate a potential for further research in using iPods for developing students' reading skills at the elementary level. Using the iPod as an instructional tool seems quite promising.

Additional research is needed that deals specifically with using iPods in learning environments where students are developing their reading fluency, expression, and comprehension. Increasing elementary students' access to such tools might significantly improve their performance, as this study provided only a snapshot into giving students 24/7 access to these tools. Although the in-service teachers were highly interested in using iPods in the future, it was unsure if they would actually have access to such tools in their own classrooms. After having an experience like this in their graduate degree program, it would be important that they have access to iPods in their own classrooms so they could apply and expand upon what they learned as a result.

According to this study, the tutors' reading comprehension did not improve greatly

while using the iPods. According to the three tutors, they claimed that their tutees' reading comprehension ability was high at the start of the tutoring sessions. However, the level of comprehension questions written by the tutors for the pretest might also be the main reason that all three tutees answered their questions almost all correct. After reviewing the comprehension questions for each study pair, the question structure for most of the questions was actually very predictable (see Appendix F). Almost all of the questions created by tutors did not involve critical thinking on the part of the tutees and were highly predictable with emphasis on recalling information. The questions were typically short and only required tutees to search for facts rather than any formal analysis or synthesis. Sometimes, by only taking a look at the cover of the book, tutees could answer the questions without really reading the text. For example, like one of the tutors asked her tutee, "Where does Fancy Nancy visit?" The answer seemed obvious because the title of the book was *Fancy Nancy at the Museum*. It appeared that tutees could predict the answers without much difficulty so a closer examination of the types of comprehension questions asked by tutors would be warranted. Besides, there is still a need to investigate this further and/or to design another way to use the iPods for reading comprehension rather than simply using iQuiz Maker. Additionally, this study only addressed the interaction between the tutors and tutees; a

possible future study might focus more on the interactions between the tutees while using the iPods. If this concept can be fully investigated, the possibilities of using the iPods in educational settings will be determined. More teachers may choose to use iPods as important instructional tools in their classrooms, and more students may use iPods as their learning tools. Both teachers and students can grow in literacy teaching and literacy learning, and the win-win results will be established.

Appendix A. Research Approval Form From IRB

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office of Research Assurances
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

DATE: May 12, 2008

TO: Wei Wang
3709 Tripp Street, Apt. 221, Ames, IA 50014

CC: Dr. Denise Schmidt
N031 Lagomarcino

FROM: Jan Canny, IRB Administrator
Office of Research Assurances

TITLE: **Reading Tutors using the iPod to Enhance and motivate Struggling Literacy Learners' Reading Ability**

IRB ID: 08-102 **Study Review Date:** 5 May 2008

The Institutional Review Board (IRB) Chair has reviewed the modification of this project and has declared the study remains exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as proposed in the IRB application**, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.
- **Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes**, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to **use the documents with the IRB approval stamp** in your research.

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Appendix B. Evaluation Form for Pretest and Posttest

Fluency Rubric

Name: _____

Date: _____

Name of Book:

(Pre) _____ Author: _____

(Post) _____ Author: _____

Speed of Fluency

Pretest _____ word/min Total words in this book _____

Posttest _____ word/min Total words in this book _____

Expression Rubric

In this test, student will be asked to read the assigned level appropriate picture books.

Tutor will judge whether student reach certain level or not. By circling the scale, tutor will understand the difference between pretest and posttest.

Section 1. Pretest

1. Student read sentences with proper intonation.
2. Student correctly expressed the feeling of characters.
3. Student pronounced the words in correct way.

None	Partial	Good	Great
1	2	3	4
1	2	3	4
1	2	3	4

Comment:

Section 2. Posttest

1. Student read sentences with proper intonation.
2. Student correctly expressed the feeling of characters.
3. Student pronounced the words in correct way.

None	Partial	Good	Great
1	2	3	4
1	2	3	4
1	2	3	4

Comment:

Reading Comprehension Rubric
Section 1: Pretest

1. Content was fully understood by student.
2. Student can easily know the sentence order.
3. Meaning of vocabulary was clearly identified.

None	Partial	Good	Great
1	2	3	4
1	2	3	4
1	2	3	4

4. The **Correct** answer(s) _____
5. The **Incorrect** answer(s) _____

Comment:

Section 2. Posttest

1. Content was fully understood by student.
2. Student can easily know the sentence order.
3. Meaning of vocabulary was clearly identified.

None	Partial	Good	Great
1	2	3	4
1	2	3	4
1	2	3	4

4. The **Correct** answer(s) _____

5. The **Incorrect** answer(s) _____

Comment:

Total Score: Pretest: _____ /24

Posttest: _____ /24

4 = 80% or above

3 = 60 – 79%

2 = 59 – 40%

1 = 39% or less

Appendix C. Motivation Survey for Elementary Students (Tutees)

Name: _____

Date: _____

Tutor's Name: _____

After you read through the following statement, please circle your best answer toward the statement.

1 = I strongly agree; 2 = I agree; 3 = No comment; 4 = I disagree; 5 = I strongly disagree

1.	I like to use the iPod during my reading class.	1	2	3	4	5
2.	I would like my teachers to use iPod in class.	1	2	3	4	5
3.	The more I use iPod for reading, the better I can read.	1	2	3	4	5
4.	I get nervous when I use the iPod to answer questions.	1	2	3	4	5
5.	I frequently listen to an audio book or story anywhere and anytime while I am using iPod outside of school.	1	2	3	4	5
6.	I noticed that my expression improved, after I used the iPod for 2–3 weeks.	1	2	3	4	5
7.	I listened to my assignments more times on the iPod than I would have read them out of a book.	1	2	3	4	5
8.	I would pay attention more in class if my teacher would sometimes let us use iPods.	1	2	3	4	5
9.	Using an iPod is hard.	1	2	3	4	5
10.	I think using iPod in class will make my learning more interesting.	1	2	3	4	5

Appendix D. Questions for Focus Group Interview (Tutors)

The following questions will be asked during the focus group interview:

- Please introduce yourself and describe any teaching experience that you have.
- What is your reaction to the use of an iPod in the classroom environment?
- What was your tutee's reaction toward the iPod?
- What makes teaching with an iPod different?
- Do you think the iPod motivated your tutee to read and complete your activities during tutoring sessions? If so, how?
- Did you notice any improvements in students' reading abilities? (reading aloud, fluency, and reading comprehension) If so, why do you think they improved? If not, why do you think they didn't improve?
- Do you think the iPod is a useful instructional tool for elementary level reading class?
- What were some of the challenges you faced when using the iPod with your tutee?
- Will you consider using iPod as a teaching tool in the future?
- After having this experience, what other ways have you thought about for using iPods in your classroom?

Appendix E. Log-in Sheet

Log In Sheet

Name: _____

Please record when you use your iPod for homework or any other purposes.

	<i>Date</i>	<i>Minute(s) used</i>	<i>Purpose</i>
Week 1			
Week 2			
Week 3			
Additional			



Appendix F. Comprehension Questions in Pretest and Posttest

Study Pair One: Tutor: Esther and Lily

Book: Fancy Nancy at the Museum

Author: Jane O'Connor

1. Where does Nancy visit?
 - A. A museum
 - B. A hospital
 - C. A park
 - D. A school

2. What does she see at the museum?
 - A. Books
 - B. Art
 - C. Cars
 - D. Machines

3. Why does Ms. Glass let Nancy wear her shirt?
 - A. She gets sick and feels dirty.
 - B. She thinks the shirt is pretty.
 - C. She wants to put on a costume.

4. What is a masterpiece?
 - A. A piece of paper
 - B. Beautiful clothes
 - C. A delicious pizza
 - D. A beautiful painting

5. Why is the story titled Fancy Nancy?
 - A. She wears fancy clothes
 - B. She likes to drive fancy cars
 - C. She uses fancy words

Study Pair Two: Emily and Ian

Book: Penguins

Author: Simon, Seymour

1. What do penguins use their wings for?
 - A. Fly
 - B. Swim
 - C. Slide
 - D. Waddle

2. What kind of feet do penguins have?
 - A. Webbed
 - B. Small
 - C. Large

3. What kind of penguin is the largest?
 - A. Fairy
 - B. Little Blue
 - C. Emperor
 - D. King

4. Penguins live in cold weather, where do penguins live?
 - A. Iowa
 - B. Africa
 - C. Canada
 - D. Antarctic

5. There are 3 things that penguins can do to get across the ice, they are?
 - A. walk, waddle, flop
 - B. waddle, flop, slide
 - C. slide, flop, walk
 - D. slide, waddle, walk

6. What do penguins have on them to keep them warm?
 - A. Skin

- B. Hair
- C. Blubber
- D. None of the Above

7. What kind of food do penguins eat?

- A. Fish
- B. Birds
- C. Krill
- D. Small Animals

8. What is the name of the place that penguins lay their eggs?

- A. Cave
- B. House
- C. Water
- D. Rookery

9. What kind of penguin is the smallest?

- A. Fairy
- B. Emperor
- C. King
- D. Black-Footed

10. What kind of feathers do baby penguins have when they are born?

- A. Downy
- B. Small
- C. Waterproof
- D. Large

Study Pair Three: Ashley and Brian

Book: The Man Who Walked Between the Towers

Author: Mordicai Gerstein

- 1 Who was the main character in the story?
 - A. Phillipe
 - B. Phillipe's Friend
 - C. The policeman
 - D. A construction worker

- 2 What did Phillipe like to do?
 - A. Break the law
 - B. Juggle for lots of people
 - C. Tightrope walk between buildings
 - D. Dance

- 3 How did Phillipe get the tightrope stretched across the towers?
 - A. He didn't have to, it was already there
 - B. He had a friend shoot the rope between the buildings with an arrow
 - C. He swung on the rope from one building to the other
 - D. The policeman helped him

- 4 Do you think Phillipe was scared to walk between the towers?
 - A. Yes, it was very high
 - B. Yes, he didn't like to tightrope walk
 - C. No, he had walked between the towers before
 - D. No, he felt happy and free up on the wire

- 5 Why did the police arrest Phillipe?
 - A. They were mad he had attracted such a loud crowd of people
 - B. Phillipe had broken into the towers to put his wire up
 - C. Tightrope walking is illegal
 - D. Phillipe had stolen his tightrope

- 6 What was Phillipe's punishment?

- A. He had to perform in the park for children
- B. He had to go to jail for one month
- C. He had to pay a fine
- D. He had to wash windows at the towers

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