
Keeping Up with the Technologically Savvy Student: Student Perceptions of Audio Books

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Abstract

The current generation of college students is so adapted to the digital world that they have been labeled the multi-tasking generation (Foehr, 2006; Wallis, 2006). College students routinely use digital playback devices in their lives for entertainment and communication to the point that students being “plugged in” is a ubiquitous image. Unfortunately, it is more common today for instructors to see students staring at their various media devices than reading course textbooks. One reason may be that traditional textbooks do not meet the needs of the digital generation. Could we harness the media addicted behaviors of students to improve their reading habits? For educators to tap into the multi-tasking, time conscious nature of students, it is necessary to think about innovative ways to encourage students to access assigned reading more frequently and efficiently. The purpose of this study is to explore student perceptions of the use of audio books for course reading assignments in addition to the standard textbook. Findings revealed preference for traditional textbook or for aural media is tied to learning style. Findings show that student perceptions of audio books are highly dependent on the level of engagement developed by the audio book, the navigability of files, and the ability of the audio book to be used by multiple devices.

KEYWORDS: *Audio book, technology, student perceptions, college, innovation in the classroom, increasing student reading*

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How often does one see a student walking across campus, sitting outside a classroom, or in the library wearing ear phones, listening to a cell phone, or other digital device? How often have instructors struggled to capture students' attention away from these devices to focus on class content? Considering this, now think about how many professors grapple with students to read course materials?

Young (2002) maintains students focus is on exams rather than learning and as a result students spend their time cramming in place of attempting to learn by reading, if they prepare at all. Burchfield and Sappington (2000) noted a steady decline in reading among students, and Clump, Bauer, Bradley (2004) found that only 27.46% of psychology students read assigned textbook material before coming to class. This lack of preparation certainly detracts from the wealth of class discussion and student learning; particularly for auditory learners. Class discussion is one of the few techniques used to reach the auditory learner (Felder & Silverman, 1988). If class discussion is limited and unengaged due to the lack of reading preparation by students, student learning may suffer. Sikorski, Rich, Savile, Buskist, Drogan, and Davis (2002) revealed that students spend less than three hours per week reading textbooks in spite of the recommendation of two hours of study time for every hour of class-room time.

Purpose of Study¹

Audio books offer a potentially convenient and time saving opportunity for college students to access course reading materials whenever and wherever they desire. The purpose of this study is to explore student perceptions of the use of audio books for course textbook reading assignments. More importantly, we sought to examine if audio books would encourage students to access course reading materials more frequently. The audio book has not been explored in recreation and leisure studies curricula and seldom in other academic areas for college students. Also, the practical problems of using an audio book are rarely discussed in the existing literature. Questions include whether an audio book is easy to use. Are they portable and accessible? Is the material presented in a warm, interesting manner that encourages listening? Vincent and Ross called for technological innovations to facilitate learning in 2001, but Write and Wilson (2007) maintain more technological avenues need to be explored. To find alternative means of delivering textbook material and to capitalize on various learning styles, the purpose of this study is to explore student perceptions regarding the use of audio books as a tool for supporting traditional teaching and learning methods. Another interest is to explore the appeal digital textbooks hold for student lifestyles.

Hypotheses and Research Questions

The researchers utilized four research questions to better understand student perceptions of audio books as an alternative means of accessing course reading materials: 1) How frequently will students use audio books to access course materials? 2) Do students prefer using the audio book or textbook? 3) Is student learning style associated with preference for audio book or textbook, and 4) What technical issues will students encounter while using the audio book?

The first research question explores how frequently students will use audio books to access course material. The researchers' hypothesized students will access the

¹The authors acknowledge that one listens to audio books and reads textbooks. However, for discussion purposes and ease of understanding we refer to 'course reading assignments' throughout the manuscript.

course material more frequently using the audio book than the textbook. Research question two sought to determine student preference regarding using the audio book or textbook. The study hypothesized that students will prefer to use the audio book. The third research question explored if a student's learning style will be associated with preference for audio book or textbook. The hypothesis for this question was that students' preference for either text or audio book will be related to their learning style. Question four explores technical features of the audio book. The researchers hypothesize technical features will affect the students' preference and use of audio books.

Review of Literature

The characteristics of today's students are significantly different from those a decade ago (Venable, 2010; Bennett, Maton, & Kervin, 2008). Cell phones, iPods, iPads, and new devices such as the Kindle are often common accessories that students use to entertain themselves between classes and to interact with the world. In an effort to keep up with the skills and trends of today's technologically savvy student, and more importantly have students access course reading assignments more frequently, why not merge the two worlds with the use of audio books?

For most college students, technology is a part of almost every facet of their lives and they constantly access a multitude of devices. Educators need to recognize the multi-tasking habits of the average student today, frequently referred to as the multi-tasking generation (Foehr, 2006; Wallis, 2006). Byrd and MacDonald (2005) pointed out that multitasking ability has a beneficial contribution to readiness for college studies. These young learners are often active in deciding the nature, place, pace and timing of learning, rather than acting as passive information receivers (Selwyn, 2009). Students today have been raised with skills that support convenient and timesaving means of learning. They demand technology to assure the mobility of learning thus gaining full control of their time to learn. For educators to tap into the multi-tasking, time conscious nature of students, it is necessary to think about innovative ways to encourage students to access assigned reading more frequently and efficiently.

As the use of technology continues to evolve and society demands more productivity in less time, instructors must seek alternative ways to connect with students. In an effort to keep up with the technological mindset and skill sets of students, educators are experimenting with various technological tools (power point, podcasts, chat/ discussion rooms) to assist in classroom teaching. While technology in the classroom is encouraged by educational institutions, instructors need to continue to find innovative ways to integrate technology with classroom instruction to support and facilitate student learning (Write & Wilson, 2007). Although innovative ways for presenting material are being explored and integrated, course textbooks continue to serve as vital tools in efficiently delivering course materials. Specifically, the course text can provide additional depth and lead to a greater understanding of course content. However, some students fail to read course materials adequately, if at all. What are the reasons for this lack of reading among students? Is it lack of time, desire, or accountability? One possible explanation is that students' learning styles influence their reading habits.

According to Kanar (1995), learning styles can be broken down into three areas: visual, auditory, and kinesthetic. Vincent and Ross (2001) maintain most instruction is geared toward visual learners but, 42% of their subjects were audio learners. Determining what educators can do for audio learners is a critical issue in creating an

inclusive learning environment. Traditionally, class discussion is a mode of engagement for audio learners. With the technology development, the use of audio books provides an innovative tool for reaching students who process audio materials best.

Research has discovered that there is a relationship between students' academic performance and the application of audio books (Rahmlow & Langdon, 1977; Boyle, Connelly, Washburn, Brinckerhoff, & Banerjee, 2003; Montagut, 2009). Audio books offer an alternative method for audio learners to access information in addition to traditionally visual friendly materials. Boyle et al. (2003) randomly assigned 95 high school students with mild cognitive deficits into three groups: audio only, audio and text assistant, and control group. The results of the study revealed students who used only the audio book had significantly higher content knowledge than those who read the printed textbook. Students who used both audio book and textbook had significantly better academic performance than those who used only either audio book or textbook (Boyle et al.). It is not surprising that accessing course materials through multiple delivery methods increases retention and learning. These findings lend support to the notion that instructors should explore various tools to assist the technologically savvy student of today.

Methods

Participants

The participants in this study consisted of 75 college students enrolled in an Introduction to Recreation and Leisure Services course at a South Eastern university. Of the 75 participants, 37 were female and 38 were male. The students represented the entire spectrum of academic ranks with six freshmen, 28 sophomores, 24 juniors, and 17 seniors. Thirty-two of the participants identified themselves as recreation majors, 11 were recreation minors, and 32 were nonrecreation related majors (Table 1).

Table 1

Participant Characteristics, Student Perceptions of Audio Books (N = 75)

Characteristic	<i>n</i>	%
<hr/>		
<i>Academic ranks</i>		
Freshmen	6	8.00
Sophomores	28	37.33
Juniors	24	32.00
Seniors	17	22.67
<i>Gender</i>		
Female	37	49.33
Male	38	50.67
<i>Majors</i>		
Recreation major	32	42.67
Recreation minor	11	14.66
Non-recreation-related major	32	42.67

Procedure

The Introduction to Recreation and Leisure Services course was chosen, as it is one of the most common courses found in the Recreation and Leisure core curricula. The course consists of an overview of the history, definitions, theories, basic and social psychological concepts, as well career opportunities and areas of service delivery in the profession.

The research team secured approval from Human Kinetics to conduct an audio book study using *Introduction to Recreation and Leisure* textbook. Next, a prerecorded copy of the audio book was obtained from the Recordings for the Blind and Dyslexic (RFB&D). Upon receiving the audio files from RFB&D, the researchers created downloadable, password protected mp3 files for each chapter of the book, accessible via the course website. This password was given to all students who were enrolled in *Introduction to Recreation and Leisure Services* as a part of the course instruction. Before accessing the course assignments via audio book, students were asked to create their own unique code (last four digits of their phone number and birth month). This code was also used later for completing questionnaires in order to maintain the confidentiality of participants.

Baseline measures were collected during the first two weeks of the semester. During this time, students completed the "What is your Learning Style?" inventory (University of South Dakota, 2009) to isolate their learning style of visual, audio or kinesthetic. This information helps students know which sense they rely most heavily upon for learning. Students were also asked questions about how often they read the course textbook.

During weeks three through six, students were given access to the assigned chapters via audio book and textbook. They were asked to complete the Student Perceptions of Course Audio Books questionnaire (SPCAB) after each chapter assignment. The SPCAB questionnaire is composed of two sections 1) participation behaviors and 2) perceptions of audio books. Questions explored frequency of use, benefits, effectiveness, and accessibility.

During weeks seven through 10, the subjects only had access to the course textbook. Students were asked to complete the Student Perceptions of Course Textbook Reading questionnaire (SPCTR) after each text chapter assignment. Like the SPCAB, the SPCTR is composed of two sections 1) participation behaviors and 2) perceptions of textbook. Questions explored frequency of use, benefits, effectiveness, and accessibility.

Subjects were again given access to the assigned chapters via audio book and textbook during weeks 11 through 14. This technique of providing, removing and reinstating access to the audio material allowed students to better assess their learning experiences using the new technology. Subjects were again asked to complete the SPCAB after each assigned chapter.

The final weeks of the study and semester (weeks 15 and 16) were set aside for subjects to participate in one focus group containing six to seven participants for one hour. Focus group questions were utilized to provide in-depth explanation of benefits, disadvantage, and logistical suggestions for audio book use as a learning tool. Focus group data was used to identify factors in relation to the positive and negative impacts of using audio textbook. Qualitative analysis provided more in-depth understanding of subject perceptions and served to triangulate data from the SPCAB and SPCTR. The focus groups were conducted by an outside facilitator to allow anonymity.

Quantitative data were computed and analyzed using descriptive statistics and chi distribution ($p < .05$). Qualitative data used in this study are from two sections: open ended questions in both SPCAB and SPCTR questionnaires and the focus group study. The researchers conducted a content analysis of the answers from opened questions

and the transcribed text from the focus group study in order to analyze the patterns and commonalities from the qualitative data.

Results

As part of the baseline data collection students were tested to determine their primary learning style using the "What is your learning style?" inventory. The "What is your learning style?" inventory revealed 38.6% of the students registered as visual learners, 32% as Kinesthetic, 16% as auditory, 2.6% as a combination of visual and auditory, and 4% as a combination of both auditory and kinesthetic learners.

Frequency of use was examined in research question one. In the 13 chapters of the book used in the study the students were allowed access to the audio book for nine chapters. When examined by chapter, there is a high level of variation but the data indicates a strong preference for the textbook. When allowed access to both instruments students claimed to use the textbook more frequently (59.8%), followed by the use of both tools in (20.1%), neither tool (12%), and the least used was the audio book (7.2%). A higher level of use of the audio book appeared earlier in the semester, 14.5% in chapter three, indicating that some students went back to the text after exposure to the audio book.

Table 2

Results Descriptive Data, Student Perceptions of Audio Books (N is the number of participants, n represents the number of individual responses over the course of the study)

Characteristic	n	%
<i>Actual use of materials</i>		
Textbook	37	59.81
Audio book	308	7.18
Both text and audio book	108	20.97
Neither	62	12.04
<i>Preference of materials</i>		
Textbook	152	50.67
Audio book	31	10.33
Both text and audio book	117	39.00
<i>Learning Style</i>		
Visual	N	%
Visual	29	38.67
Auditory	12	16.00
Kinesthetic	24	32.00
Visual/Auditory	2	2.67
Visual/Kinesthetic	3	4.00
Auditory/Kinesthetic	2	2.67
None	3	4.00

The second research question examined student preference for the audio book or textbook. Based on all of the responses, the students preferred the textbook approximately half of the time, while the combination of audio and textbook was preferred over the use of the audio book only (Table 2). When these preferences are examined in relation to the use of the two survey instruments, the variation in preference becomes more pronounced. When using the SPCAB, used when students had access to both audio and text materials, students preferred the text only 20% of the time, the audio book 17% of the time and both tools 62% of the time. When using the SPCTR, used when students had access to only the text materials, the student preferred the text 71.6% of the time, the audio book 5.7% of the time, and both 22.7% of the time. When students only had access to the text, they expressed an overwhelming preference for the text. When subjects had access to the audio book, their preference for the text dropped dramatically and the students expressed a higher preference for using both tools together. Only during the first chapter used for the audio book did more than 20% of the respondents express a preference for the audio book (36.3%). Variations in preference were largely based on the instrument used for the majority of the study. When students had access to the textbook only, they chose the text, when they had access to the audio book preference changed to the use of both. When the students reached the ninth item, chapter 13, the preference began to diverge with the use of both the textbook and audio book simultaneously taking over 77% of the students responses in Chapter 17 (Figure 1).

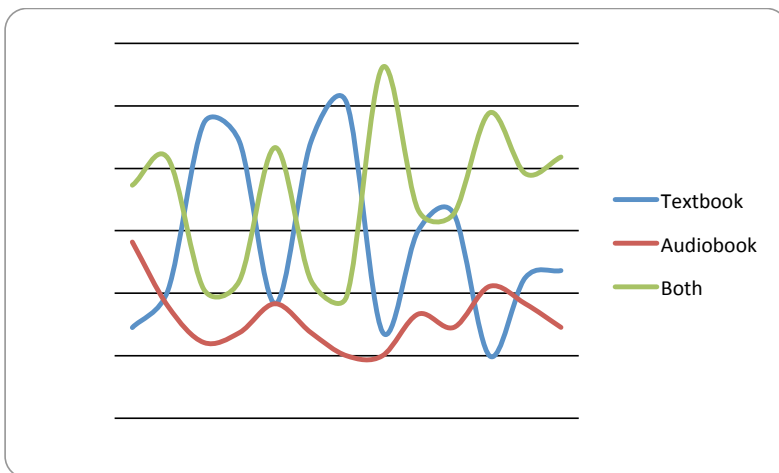


Figure 1. Students' Preference of Materials Over Time

Research question three analyzed student preference and learning style using Chi distribution. Due to varying responses across chapters, the population for this analysis was 46 persons with a total of 217 responses from 13 chapters. Mixed learning styles were removed from the analysis because of low numbers, six students total, so only primary visual, kinesthetic, and auditory learners were represented in the analysis. The resultant Chi square score was 20.66 (df=8, $p < 0.05$). When examined at an alpha level of 0.05 this score was found to be greater than the critical value (9.488) and thus significant (Table 3).

Table 3

Learning Style of Participants by Student Preference

Learning style	Students' preference						χ^2
	Text		Audio		Both		
	N	%	N	%	N	%	
Visual	58	50.00	18	72.00	22	28.95	20.66
Auditory	12	10.34	0	0.00	18	23.68	
Kinesthetic	46	39.66	7	28.00	36	47.37	
Total	116	100.00	25	100.00	76	100.00	

Note: df=8, $p < .001$, critical value at alpha .05 =9.488

As part of the SPCAB and SPCTR survey instruments students were asked to identify the advantages and disadvantages of the audio book. Student perceptions of the advantages of using an audio book can be divided into two basic categories. Advantages included the convenience of the audio book which saved time, by allowing them to multitask, and the ability to learn by listening to the audio book which they believed helped them retain information. Several students extended the explanation of retention by expressing the advantages of the combination of both the audio and textbook. When asked about the disadvantages of the audio book the students were largely focused on the technological and practical issues related to the audio book. Issues with downloading and navigability of the files were disadvantages to the use of the audio book. Along with the technical issue the dry nature of the readers were mentioned in relation to this particular book.

Independent of student preference, the findings of the present investigation revealed how and when students would choose to use the course audio book. Students expressed an overwhelming preference to listen to the audio book at home, 75.6% of the responses. Other locations students listened to the audio book included in school computer labs and in their cars.

The SPCAB instrument asked students to describe any issues specific to the downloading of the audio files from the class website. Students expressed only small concerns with downloading the files primarily related to slow download time. The participants also expressed issues with the lack of navigability of the audio files, there

were no ways to move from one section of an audio file to another or change the rate of playback. This data indicated that students would prefer a more navigable and easily access format for audio books.

Qualitative analysis of open-ended questions and focus groups confirmed that students felt downloading the audio book files were a useful tool to access course reading assignments. A major theme emerged demonstrating a combination of utilizing the audio book while also reading the course textbook was utilized by students. All participants who used the audio book agreed they would like to use this tool in other courses, provided the reader is entertaining and the pace of the reading was increased. Students claimed that the readers of the audio book used in the study were boring and difficult to hold their attention. One student specifically stated "The reader is boring, makes it hard to listen to the whole thing," which summarizes a large portion of the participants' opinions. Several students agreed with the quote and said that their major suggestion for improvement of the audio book were to make the readers voice more engaging. Students indicated if the recordings consisted of a more "upbeat" reader they felt they would utilize the audio book more frequently.

The technological issues related to the access to and use of the audio book was also examined using a qualitative approach. The use and functionality of the audio book for teaching purposes is highly dependent on the quality and types of technology used to listen to the audio book. This technology directly effects usage by controlling access, portability, and playability of specific files.

Discussion

Exploring the use of audio books is a major step toward developing innovative technologies to encourage reading of course materials among college students. The present investigation yielded some interesting and unexpected findings regarding student perceptions of audio books for course reading assignments. The first and second hypotheses were rejected, but with a rather unexpected finding. Students did not access course material via the audio book more frequently, nor did they prefer to use the audio book. Findings revealed lack of use and preference for the audio book were due to technological issues and poor reader quality rather than a preference for the textbook.

The third hypothesis was accepted as Chi Square analysis of the relationship between the learning style of the students and their preference does show a significant result ($p < .05$). Learning style does have some relationship to the choice and preference of the use of audio books. When examining the Chi distribution and the overall preference data along with the distribution of learning styles among the participants it can be summarized that a mixed approach to learning using both audio books and textbooks would be preferred by students with a broad range of learning styles and that this preference could increase with exposure. While the preference for the use of both tools over the course of the entire study was 39% of the time, later chapters showed increased preference for the use of the audio book and text combined, reaching 77% in chapter 16.

The fourth hypothesis was accepted; indeed, technical features did impact student use and preference. In our focus groups, we found that students are interested in utilizing the audio book as a means to access assigned reading materials. Although students stated they wanted to use the audio book and would use the audio book in the future, qualitative data revealed that the monotonous reader and technological issues were the main reasons they did not access more frequently. Notably, technological issues also played a significant part in this study. The slow download speed and the

navigability of the audio book both were shown to be negative factors for use and preference by the qualitative data. If ways can be found to minimize these issues students may choose to use the audio book more consistently and in more locations.

Supporting the findings of Foehr et al. (2006) and Wallis (2006), participants liked the idea of the multitasking nature of being able to read, drive, walk, and perform menial tasks, etc. while listening to their course reading assignments. Easy access to downloadable files was also appealing. One of the most interesting findings indicated that students like to listen to the audio book and read the course textbook at the same time because they felt it assisted with content retention. This finding supports the work of (Boyle et al., 2003) who found students who used both the audio book and textbook demonstrated higher academic performance.

Qualitative analysis of focus group data also revealed this technological tool can assist in increasing student reading (listening) and content retention. However, greater attention to technological issues and quality of reader must be carefully considered. The reader must be engaging and utilize a good pace to maintain user attention, thus a professional reader is recommended. Additionally, the download of the audio files must be efficient and compatible with a multitude of technological devices (cell phones, mp3 players, CD players, home computers and other digital devices).

Study Limitations

The action research based nature of this study created several limitations. The lack of a control group does not allow for the direct comparison of the frequency of use to students' text reading rates. Due to the nature of the data collection, the students were exposed to the instruments repetitively. The repeated use of the instruments may have contributed to instrument fatigue. The SPCAB was administered nine times, and the SPCTR was administered four times. Over the course of the study, this continued exposure to lengthy instruments could explain the fall off in student responses as the study progressed. In the future, a more streamlined data-collection process could elicit more responses for the students. Finally, technological issues such as downloading problems and dull readers also contributed limitations to this study.

Conclusion

The present findings show promise for the use of audio books to encourage reading of course materials. However, instructors must take caution to ensure the appeal to the technologically savvy, multitasking college student of today. The major conclusion from the present investigation is that student use is highly dependent upon the ease of technological accessibility and quality of reader. Technological issues created a major barrier for the use of our audio book. Specifically, we found the audio book must have an engaging reader, be easy navigable, and highly portable.

The results of this study show that the learning style of the student and the preference for audio or text book are related but the strength and nature of that relationship was not explored. Future research should focus on this relationship to create a clearer understanding of the potential uses of audio book as a resource for assigned reading materials. Additional research should include various courses within recreation, use of a professional reader and music, and exploration of impact of the use of audio books on testing, and incorporation of the Kindle and other portable devices.

References

- Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775-786. doi:10.1111/j.1467-8535.2007.00793.x
- Boyle, E. A., Rosenberg, M. S., Connelly, V. G., Washburn, S. G., Brinckerhoff, L. C., & Banerjee, M. (2003). Effects of audio texts on the acquisition of secondary-level content by students with mild disabilities. *Learning Disability Quarterly*, 26, 203-214.
- Burchfield, C. M., & Sappington, J. (2000). Compliance with required reading assignments. *Teaching of Psychology*, 27, 58-60.
- Byrd, K., & MacDonald, G. (2005). Defining College Readiness from the Inside Out: First-Generation College Student Perspectives. *Community College Review*, 33(1), 22-37.
- Byrom, G. (1998). If you can't read it, then audio read it. *Reading*, 32(2), 3.
- Carbo, M. (1978). Teaching reading with talking books. *The Reading Teacher* 32, 267-273.
- Clump, M. A., Bauer, H., & Bradley, C. (2004). The extent to which Psychology students read textbooks: A multiple class analysis of reading across the psychology curriculum. *Journal of Instructional Psychology*, 31(3), 227-232.
- Felder, R. M., & Silverman, L. K. (1988). Learning and teaching styles. *Engineering Education*, 78(7), 674-681.
- Foehr, U. (2006). *Media multitasking among American youth*. Menlo Park, CA: Kaiser Family Foundation.
- Kanar, C. C. (1995). *The confident student*. Boston: Houghton Mifflin.
- Levoy, B. (2003). Audio textbooks: An important tool for those with learning-related and low vision problems. *Journal of Behavioral Optometry*, 14, 121-122.
- Montagut, M. (2009). Audio-visual communication degree conversion to the European higher education area system in Catalonia. *Catalan Journal of Communication & Cultural Studies*, 1(1), 47-65.
- Neuman, S. B. (2005). Audio Books for Kids. *Scholastic Parent & Child*, 12(4), 22.
- Rahmloow, H., & Langdon, D. (1977). Ubiquitous audio. *Innovations in Education and Teaching International*, 14, 9-12.
- Selwyn, N. (2009). The digital native: Myth and reality. *Aslib Proceedings*, 61(4), 364-379.
- Sikorski, J. E., Rich, K., Saville, B. K., Buskist, W., Drogan, O., & Davis, S. E. (2002). Student use of introductory texts: Comparative survey findings from two universities. *Teaching of Psychology*, 29, 312-313.
- University of South Dakota. (1989). What is your learning style? Instructor Magazine. Retrieved September 18, 2009 from <http://www.usd.edu/trio/tut/ts/stylest.html>.
- Venable, M. A. (2010). Using Technology to Deliver Career Development Services: Supporting Today's Students in Higher Education. *Career Development Quarterly*, 59(1), 87-96. Retrieved from EBSCOhost.
- Vincent, A., & Ross, D. (2001). Learning style awareness: A basis for developing teaching and learning strategies. *Journal of Research on Computing in Education*, 33(5), 1-10.
- Wallis, C. (2006). The multitasking generation. *Time*, 167(13), 48-55.
- Wellner, M. (2010). *How an audiobook library program influences book interactions of three ESL kindergarteners*. Saint Paul, Minnesota: Hamline University.
- Wright, V. H., & Wilson, E. K. (2007). A partnership of educators to promote technology integration: Designing a master technology teacher program. *Education*, 128(1), 80-86.
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