

INTEGRATING RCAMPUS IN COLLEGE READING AND WRITING FOR TRANSLATION STUDENTS

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Abstract

The present study investigated the effectiveness of integrating RCampus in EFL freshman classrooms on EFL students' reading and writing skills development. Forty-three freshman students majoring in translation participated in the study. Before instruction, the students were pretested. Then they received traditional in-class instruction that depended on the textbook, in addition to online extension reading and writing activities using RCampus (www.rcampus.com), an open source Online Course Management System. Each week discussion threads that required the students to search for information, read extra material and respond to questions in writing were posted. The students posted their own book summaries, discussion threads and comments on each other's posts. The pre and posttest scores were compared and the effect of utilizing RCampus on reading and writing skills development is reported.

1. INTRODUCTION

Students learning a new language need a lot of language support and a variety of language learning experiences. They need a variety of opportunities to hear, speak, read, and write English (Green, 2005). Technology can play an important role in providing students learning EFL or ESL with significant language experiences. It can help language instructors in making language learning faster, easier, less tedious, and more engaging, and can help create an interesting language learning environment.

A review of the L1 and L2 research on the integration of different types of technologies in the teaching of reading and writing to at-risk young learners showed that children with reading difficulties benefitted from the integration of several forms of technology in reading instruction. In a study with resource students who found reading difficult and did not like to read, Barrett (2001) developed a variety of reading activities to encourage them to read more books for pleasure, many of which integrated technology. Students watched a weekly video of community leaders talking about the importance of reading. Resource students typed their writing assignments using MS Word, created PowerPoint presentations describing a career, wrote to a favorite author, wrote book reviews, interpreted poetry, wrote poetry, and illustrated poetry. All reading projects created on the computer with digital pictures of students were linked to their reading Webpages saved on their computer disks. Students also enrolled in a Drop Everything and Read (DEAR) Program, participated in a poetry reading, and read to a group of preschool children. Data analysis showed that although not as many library books were checked out as predicted, resource students did read more books and enjoyed using technology to complete their reading assignments and activities.

Technology also supported the development of emergent reading. Voogt and McKenney (2008) used a software package called "PictoPal" that uses images and text in reading, writing, and authentic applications to examine how technology can support the development of acquisition of reading and writing skills in 4- to 5-year-old children. Findings revealed a statistically significant effect of the treatment versus control group scores after two months of using PictoPal in the classroom. In a study by Lange, McCarty, Norman & Upchurch (1999) with middle school students who lacked comprehension and vocabulary skills and could not read for understanding at grade level in the different content areas,

students' reading scores increased after utilizing a variety of software applications that incorporated reading strategies across the curriculum. The integration of technology with reading strategies, students showed a transfer of knowledge in all the content areas. Strategies in which technology was integrated with reading and writing across the subject areas helped increase middle school students' personal investment and subsequent engagement in learning (Nichols, Wood & Rickelman, 2001).

Integrating technology in reading instruction was helpful to students who lacked the required cognitive and metacognitive processes. Mateos, Martin & Villalon (2008) evaluated online cognitive and metacognitive activities of 15-year-old secondary students as they read informational texts and wrote a new text in order to learn, and assessed the relation of these reading activities to the written products they were asked to generate. The students read a single text and made a written summary of it, then they read two texts and made a written synthesis of them. The researcher asked the students to think aloud as they read and wrote in order to provide them with information about their comprehension and composition processes. They also examined the students' reading and writing activities during the tasks. Results showed that secondary school students lacked the cognitive and metacognitive processes that would enable them to make strategic use of reading and writing. They also found that those who create the most elaborate products evidence a more recursive and flexible use of reading and writing. They concluded that there was an urgent need for work on tasks of this kind in the classroom.

Joining an Internet learning community can help participants in acquiring reading and writing skills as well. For example, Manzo, Manzo & Albee (2002) found that use of iREAP (Read, Encode, Annotate, Ponder) platform improved reading, writing, and thinking. The "i" in iREAP reflects its currency and connection to Internet community building and its ability to help students to think from different perspectives. In another study, L2 students participating in an on-campus summer program completed four projects using technology. Students' use of technology enhanced their knowledge, literacy skills, and provided them with numerous opportunities to communicate with diverse audiences (Lawrence, McNeal & Yildiz, 2009).

Integration of technology also helped children and college students in second language acquisition. In the United Arab Emirates, an interactive multimedia (IMM) program was used to develop ESL skills in ninety 6th grade students. Results showed no significant difference between IMM users and non-users in the overall ESL skills. However, results showed a significant difference between field dependent and field independent learners in favor of field-independent learners, i.e., the effect of IMM on students' learning with different cognitive learning styles (Almekhlafi, 2006). Similarly, computers aided students of Japanese as a foreign language (JFL) who used new software technologies that significantly eased the reading and writing of Japanese (Houser, Yokoi and Yasuda (2002).

Use of multiple technologies and practicing multiple language skills seem to affect reading and writing skills by small children, and by elementary, middle, secondary and college students in first and second language acquisition. Utilization of multiple technologies in reading instruction seems to accommodate students with different learning styles, abilities and interests. Multiple technologies also help students practice different skills at the same time. Online Course Management Systems have the advantage of combining several technologies such as online forums, e-mail, word-processing, WWW resources, blogs, e-portfolios and others that provide additional activities and opportunities to practice specific language skills. Therefore, the present study aimed to find out whether the integration of an open source Online Course Management System in traditional in-class reading and writing instruction for translation students significantly improves the reading and writing skills of low ability EFL freshman students majoring in translation. A blended learning approach was used in which a combination of online reading and writing activities were integrated to develop the

reading and writing skills of EFL students' majoring in translation. The study tried to answer the following questions: (1) Does online instruction using RCampus have any positive effects on EFL freshman students' reading and writing skill development as measured by the reading and writing posttest? (2) Does the amount of participation in RCampus correlate with the students' reading and writing skill level, i.e. are active students better achievers than passive students? (3) Does online instruction via RCampus have any positive effects on students' attitudes towards reading and writing in English?

To answer these questions, 43 EFL freshman students majoring in translation participated in the study. Before instruction, all of the students took a reading test with questions that required comprehension and production of paragraph topics, main ideas, supporting details, inferring the meanings of difficult words from the text and summarization of main ideas and supporting details. Quantitative results showed that the students' performance was very poor. Qualitative analyses of students responses showed many comprehension and production weaknesses such as inability to infer the paragraph topic, identify details, understand the meaning of difficult words from context and explain the meaning in their own words, leaving the summary question blank or filling the space with any sentences copied from the text, i.e. they did not know which ideas to include in the outline and in the summary. Findings also showed many grammatical and spelling weaknesses even when copying words from the text. To help develop the student-translators' reading and writing skills and to provide the students with extension activities, they author used a combination of traditional and online reading and writing instruction with RCampus, an open source Online Course Management System. The impact of online instruction using a mixed approach on EFL freshman students' reading and writing skill development was based on quantitative and qualitative analyses of the pre and posttests. The impact of online instruction on EFL freshman college students' attitudes was based on qualitative analyses of students' responses to a post-treatment questionnaire.

2. PARTICIPANTS

Forty-three female freshman students majoring in translation at the College of Languages and Translation (COLT), King Saud University, Riyadh, Saudi Arabia participated in the study. The students were in their second semester of college and have taken 20 hours of English language courses: Listening I, speaking I, reading I, writing I, vocabulary building I and grammar I. They were enrolled in their reading II course and were concurrently taking listening II (3 hours per week), speaking II (3 hours), writing II (4 hours), grammar II (2 hours), vocabulary building II (2 hours) and dictionary skills (2 hours) courses in EFL. The students were all Saudi females and were all Arabic native speakers. Their median age was 19 years, and the range was 18-20. They all studied English for 6 years in grades 6-12 prior to their admission to COLT.

At the beginning of the semester, students were pretested. They took a reading and a writing pretest. The pretest consisted of questions covering the reading and writing skills to be studied in the textbook. The participants were asked to write the topic of each paragraph, answer short answer questions, write a summary of the text, infer the meanings of some words from context in writing and write the referent of some pronouns. Results of the reading pretest showed severe reading comprehension problems, inability to answer short answer comprehension questions in writing, construct basic simple sentences and summarize the reading text.

All of the participants were exposed to traditional in-class instruction and were also all registered in an online course with RCampus. The participants had no prior experience with

online instruction, whereas their instructor had extensive experience in online teaching with Blackboard, WebCT, Moodle and Nicenet. All the students were taught by the author in-class and online.

3. IN-CLASS INSTRUCTION

The reading course was taught by the author in the Fall of 2009 for 12 weeks. The textbook used for the reading II course was *Interactions II: Reading (Middle East 4th Edition)* by Elaine Kirn and Pamela Hartman (2009). Eight chapters of the textbook were fully covered in class. Each chapter consists of the following parts:

- **Part 1:** Reading skills and strategies: previewing vocabulary, getting meaning from context, identifying the main idea, understanding the reading structure, organizing information.
- **Part 2:** Before you read; skimming for the topic and main idea, understanding pronoun reference, underlining the main ideas, matching paragraphs with given topics and summarizing.
- **Part 3:** Building Vocabulary and Study Skills: recognizing word meaning, searching the internet and others.
- **Part 4:** Focus on testing and a self-assessment log.

The following skills were emphasized: *Identifying the paragraph topic, writing a paragraph topic, identifying the topic sentence of a paragraph, identifying the supporting details, inferring the meaning of difficult words from context using syntactic and semantic clues available in the text, figuring out the part of speech of certain words in context, locating compounds and idioms, recognizing and producing word derivatives, summarizing, making an outline*

As for assessment, the subjects were given two reading and writing in-term tests. The following skills were covered by the tests: *Writing the topic of several paragraphs in the reading selection; locating specific details in the reading selection; figuring out the meaning of words from context; finding the referents of pronouns; writing a summary of the reading selection or parts of it; filling out an outline... etc.* The students' responses to the tests were marked and returned to the students with comments on strengths and weaknesses. Words of encouragement were given. Answers were always discussed in class.

4. ONLINE INSTRUCTION

In addition to the traditional in-class instruction, the students used an online course with RCampus (www.rcampus.com), a free open source Online Course Management System. RCampus has as a discussion forum, ePortfolio, rubrics, course documents, a message center, to-do list, bookmarks, calendar, grades, rosters, book exchange, teams and other tools. The students used their own PC's and the Internet from home, as the Internet was inaccessible from their college. The students were given the RCampus class key and they enrolled themselves.

Before starting online instruction with RCampus, the students' computer literacy skills were assessed by a questionnaire. The online course components were described and instructions on how to use certain course tools were given in class. Online instruction was initiated by posting a welcome note and by inviting the students to introduce themselves.

The students received online reading and writing extension activities. Each week online discussion threads that required the students to search for information, read extra

material and respond to questions in writing were posted on RCampus. Reading websites (hyperlinks) related to the reading skills topics practiced in the textbook in class were added. The links contained short stories, world newspapers, an ESL students' magazine, reading comprehension, main idea, recognizing details, and guessing meaning from context and exercises. The students checked the reading and writing hyperlinks posted, answered the reading and writing quizzes and did the exercises. Examples of the reading websites posted are:

- *Finding Main Ideas:* <http://elearn.mtsac.edu/amla/readingroom/Mainidea.htm>
- *Identifying details:* <http://elearn.mtsac.edu/amla/readingroom/details.htm>
- *Guessing word meaning from context:*
<http://elearn.mtsac.edu/amla/readingroom/context.htm>
- *Reading Comprehension:*
http://www.readingmatrix.com/directory/pages/Reading_Comprehension_Beginner/
- *Short Stories:* http://www.readingmatrix.com/directory/pages/Short_Stories/
- *World Newspapers:* <http://www.actualidad.com/>
- *Topics magazine for learners of English:* <http://www.topics-mag.com/>
- *How to Write an Essay:* http://esl.about.com/cs/writing/ht/ht_essay.htm
- *Paragraph Writing:* <http://esl.about.com/od/writingintermediate/a/paragraphs.htm>
- *Sentence Type Basics for English Learners:*
http://esl.about.com/od/intermediatewriting/a/sentence_types.htm
- *From Simple Sentence to Complex Sentence:*
http://esl.about.com/od/intermediatewriting/a/cplex_sentence.htm

Questions that required the students to write a paragraph about themes similar to those read in class were posted. Some examples are: *An Organization that Supports Poor Women; Current Fads; Effects of Culture on Education in Saudi Arabia; Influence of Advertising; Seikatsu Club Principles; Searching the Internet for News; Large City Problems; Traffic Jams in Olaisah; Summary of a Novel; U.K. Universities.* In addition, reading study guides and strategies were also posted.

Throughout online instruction, the author served as a facilitator, provided technical support on how to use the different tools of RCampus, and responded to individual students' needs, problems, comments, and requests for certain sites. The author sent public and private messages through RCampus to encourage the students to communicate and interact. She had to look for relevant reading and writing websites on the Internet and post them. She had to post questions and discussion topic on the discussion board and post model responses. The author did not correct the students' spelling and grammatical mistakes. She would point out the type of errors a student has made especially in the reading threads and ask the students to double-check their own posts or ask them to correct each other's mistakes. Students were given extra credit for using RCampus.

5. PROCEDURES

Before instruction, the students were pretested. At the end of the semester, they students took a reading and writing posttest that consisted of a text and questions that covered all reading skills and subskills studied during the semester: (1) *What is the whole text about?* (2) *Write the topic of each paragraph on the line;* (3) *True/false inferential questions about details in the passage;* (4) *Short-answer inferential questions about details in the passage;* (5) *Write a summary of the whole passage;* (6) *Complete the outline (in writing) with main ideas and supporting details;* (7) *Write the meaning of the following words as used in context;* (8) *Write the antecedent for each underlined word* (9) *Write the part of speech of each word as*

used in the passage; (10) Write the suffixes in the sample of words from the passage. Most of the questions required production, i.e. writing. The reading and writing pre and posttests were blindly marked by the author. An answer key was used. Questions were marked one at a time for all the students. Marks were deducted for grammatical and spelling mistakes.

At the end of the course, all the students answered an open-ended questionnaire, which consisted of the following questions: (1) *Did you find the online course helpful? Yes/No? Why?* (2) *what did you like about online course?* (3) *What did you not like?* (4) *Did your reading and writing skills improve as a result of using RCampus? In what ways did you benefit?* (5) *Did RCampus make any difference in reading and writing in English?* (7) *If you did not register in RCampus, participate, or did not post any responses or paragraphs in RCampus, why?* (8) *What problems or difficulties did you face in using RCampus?* (9) *How often did you use RCampus?* (10) *Do you recommend using RCampus in other language courses, by other students and other language teachers in your college? Why?*

6. TEST VALIDITY AND RELIABILITY

The reading and writing posttest is believed to have content validity as it aimed at assessing the level 1 students' reading and writing skills in EFL. The reading and writing tasks included on the posttest were like those covered in the textbook and practiced in the classroom. Moreover, the test instructions were stated clearly, and the examinee's tasks were defined. Concurrent validity of the reading and writing posttest was determined by correlating the students' the posttest scores with their course grade. The validity coefficient was .54. Concurrent validity was also determined by correlating the students' posttest scores with their second in-term test scores. The validity coefficient for the reading test was .73.

Since the author of this article was the instructor and the scorer of the reading and writing pre and posttests, estimates of inter-rater reliability were calculated. A 30% random sample of the students' responses to the pre and posttest tests was selected and double-scored. A colleague who holds a Ph.D. degree scored the samples of students' responses to the pre and posttests. The second rater followed the same scoring procedures and used the same answer key that the author used. The marks given by the rater and the author to the same student answer sheet were correlated. Inter-rater correlations coefficient was .94 for the posttest. Moreover, examinee reliability was calculated using the Kuder-Richardson formula 21'. The examinee reliability coefficient for the posttest was .68.

7. DATA ANALYSIS

The reading and writing pre and posttest raw scores were converted into percentages. The mean, median, mode, standard deviation, standard error and range of test scores were calculated for the pre and posttest scores and were converted to percentages. To find out whether the students had made any improvement as a result of the reading and writing online instruction, a within group paired T-test was calculated using the pre and posttest mean scores.

To find out whether there is a relationship between the students' reading and writing posttest scores and amount of participation, the students were divided into two sub-groups: An active students' group and an inactive students' group. Active students are those who responded to the discussion threads by writing messages. Inactive students are those who did not register or did not post anything. Active and inactive students' reading and writing pre and posttest scores were compared using a T-test.

8. RESULTS

8.1 Effect of Online Instruction on Achievement

Table (1) shows that the typical EFL female freshman student in the present study scored higher on the posttest than the pretest (medians = 60% and 46% respectively) with lower variations among students' scores on the reading and writing pretest than posttest (SD =15.04 and 11.16 respectively). This means that the participants made more improvement as a result of reading and writing instruction. However, the reading and writing median and mean scores do not show whether the improvement was significant or not. Therefore, the reading and writing pre and posttest scores were compared using a paired T-test. Results of the paired T-test revealed a significant difference between the reading and writing pre and posttest mean scores at the .01 level, suggesting that students' reading and writing skills significantly improved as a result of using a combination of online instruction via RCampus and traditional in-class reading and writing instruction using the textbook ($T=8.66$, $Df=42$).

Since most of the questions on the posttest were production questions, qualitative analysis of the students' responses showed improved comprehension and production of main ideas, and supporting details that are explicitly or implicitly stated in the text; guessing meanings of difficult words from context, explaining meanings in their own words; connecting pronouns with their antecedents and writing a summary and making an outline of the main ideas and most important supporting details in the text. Improvement was noted in the accuracy of ideas expressed, ability to locate and express details and fewer grammatical and spelling mistakes than the pretest.

Table 1: Distribution of Pre and Posttest Scores in Percentages

	Mean	Median	Mode	SD	SE	Range
Pretest	46.34%	46%	40%	15.07	1.15	37-80%
Posttest	60.73%	60%	60%	11.26	1.74	53-85%

8.2 Correlation between Posttest Scores and Amount of Participation

To find out whether the subjects made any improvement in reading and writing skills as a result of using the online course, the posttest scores of active and inactive participants were compared. It was found that 25 students or 58% were active and 18 students or 42% were inactive. Active students posted a total of 161 posts (mean=3.8, median=3 and the range = 1 to 39 posts). A comparison of the active participant scores with those of inactive participants showed significant differences between the two groups ($T=15.54$; $df=42$).

8.3 Effect of Online Instruction on Attitudes

Analysis of freshman students' comments and responses to the post-treatment questionnaires showed positive attitudes towards online learning. 81% of the respondents found online reading and writing activities useful and fun and considered them a new way of learning and doing homework. The students reported that RCampus helped them acquire new vocabulary, improved their reading and writing skills and ability to construct sentences. It helped them learn to read faster, develop typing speed, improve ability to summarize, and

analyze text and ideas. They learnt to search for websites and for information related to the discussion threads. It gave them a chance to express ideas in an organized way, expand their ideas and general knowledge, learn from and exchange information with their classmates and know their perspectives, compare their own proficiency level and skills with those of other students. They developed discussion skills with other students and found the discussion threads interesting as they were not limited to themes studied in the textbook. They enjoyed reading in English a lot more than before. They could learn and practice reading and writing at home without having to go to class. They also learnt as a team, helped each other, competed with each other in posting responses and comments, and had a chance to interact with their instructor and classmates. As a result, their participation and reading and writing practice increased.

On the other hand, inactive participants in the online course gave few reasons for not participating which included lack of time, lack of interest and lack of access to computers and internet. One student did not have time because she is married and has children, another lives out of town and gets home late, some spend a lot of time doing assignments for other courses and studying for tests. To some students, searching for information, writing, and posting responses to reading and writing threads were time-consuming. Some participants found it difficult to keep up with bulk of students' comments on their posts. Many inactive participants were not interested in computers, had no computer skills, had no access to the internet or had computer and internet problems. They had no access to the Internet from campus and were not used to this mode of learning, i.e., online learning via RCampus. A student mentioned that at first, she did not care about using the online course, but later she regretted not participating. Few students had difficulty registering in Rcampus, some did not like its design, the layout of its discussion forums and others found the Rcampus main page and the display of discussion threads, responses, and e-mail messages together confusing.

Other negative aspects of online instruction in the present study are that the students did not post any responses if not prompted by the instructor and if the instructor did not post new topics and a sample response. Some students started a new thread dealing with the same topic rather than posting a response under that topic. Some wrote "Thank you" notes and compliments rather than responding to online questions and tasks and posting comments. Others just browsed through the reading and writing posts, comments, exercises and websites and read rather than posting messages.

9. DISCUSSION AND CONCLUSION

Significant differences were found between the pre and posttest scores in the present study. A positive correlation was also found between the posttest scores of active and inactive participants (amount of participation) suggesting that use of online reading and writing instruction proved to be a powerful tool for improving EFL students' reading and writing skills in English. Online instruction raised the good and average student's reading and writing performance and the performance of the lowest-performing students as well. This finding is consistent with findings of prior studies in the first and second language literature using other types of technologies in reading and writing instruction such as Lange, McCarty, Norman & Upchurch, (1999); Nichols, Wood and Rickelman (2001); Manzo, Manzo and Albee (2002); Houser, Yokoi and Yasuda (2002); Almekhlafi (2006); Voogt and McKenney (2008); Mateos, Martin and Villalon (2008); and Lawrence, McNeal and Yildiz (2009). As in Barrett's (2001) study, use of multiple technologies in the present study, i.e., the online discussion forum, WWW links and e-mail, online documents significantly enhanced EFL college students' reading and writing skills.

Moreover, the present study revealed positive effects of online instruction on students' attitudes towards online instruction and reading and writing in English. This result is also consistent with results of other studies by Potter & Small (1998) in which a "Writing to Read" computer program was used with Kg and first grade students, and by Kramarski and Feldman's (2000) in which an Internet environment had a significant effect on L1 students' motivation. As in Tracy and Young's (2005) study, online reading and writing instruction in the present study provided a self-paced and non-threatening learning environment and additional reading and writing practice. Students in the present study enjoyed using the online course and felt it helped them to learn and improve. The online course provided an environment for social interaction between the instructor and the students and among the students themselves, which lies at the heart of language practicing and language learning.

Finally, the present study recommends that online instruction be extended to other language courses and other college levels at COLT. Students of different college levels (i.e., lower and upper class students) enrolled in the reading and writing I, II, III and IV courses can share the same online course together with their instructors. To encourage EFL freshman students to participate in online courses, the instructor has to prompt the students and motivate them. Rules for using the online reading and writing course should be made clear. The minimum number of posts may be specified. Administrative support is also required to make online teaching a mandatory part of reading and writing instruction, in order for the students to take it more seriously. The effect of integrating online listening, speaking, grammar and/or vocabulary building extension activities and assistive technologies such as text-to-speech software, ebooks, or mobile technology on reading and writing skills development is still open for further investigation.

REFERENCE

- Almekhlafi, A. (2006). Effectiveness of interactive multimedia environment on language acquisition skills of 6th grade students in the United Arab Emirates. *International Journal of Instructional Media*, 33(4), 427-441.
- Barrett, K. (2001). *Using technology and creative reading activities to increase pleasure reading among high school students in resource classes*. ERIC Document No. ED454507.
- Green, T. (2005). Using technology to help English language students develop language skills: A home and school connection. *Multicultural Education*, 13(2), 56-59.
- Hamilton, V. (1995). *Computers and reading achievement*. ERIC Document No. ED382923.
- Houser, C., Yokoi, S. & Yasuda, T. (2002). Computer assistance for reading and writing Japanese as a foreign language. *CALICO Journal*, 19(3), 541-49.
- Jiang, W. & Ramsay, G. (2005). Rapport-building through CALL in teaching Chinese as a foreign language: An Exploratory Study. *Language Learning & Technology*, 9(2), 47-63.
- Kramarski, B. & Feldman, Y. (2000). Internet in the classroom: Effects on reading comprehension, motivation, and metacognitive awareness. *Educational Media International*, 37(3), 149-55.
- Lawrence, S., McNeal, K. & Yildiz, M. (2009). Summer program helps adolescents merge technology, popular culture, reading, and writing for academic purposes. *Journal of Adolescent & Adult Literacy*, 52(6), 483-494.
- Manzo, A., Manzo, U. & Albee, J. (2002). REAP: Improving reading, writing, and thinking in the wired classroom. *Journal of Adolescent & Adult Literacy*, 46(1), 42-47.

- Martindale, T., Pearson, C., Curda, L. & Pilcher, J. (2005). Effects of an online instructional application on reading and mathematics standardized test scores. *Journal of Research on Technology in Education*, 37(4), 349-360.
- Mateos, M., Martin, E. & Villalon, R. (2008). Reading and writing to learn in secondary education: Online processing activity and written products in summarizing and synthesizing tasks. *Reading and Writing: An Interdisciplinary Journal*, 21(7), 675-697.
- Nichols, W., Wood, K. & Rickelman, R. (2001). Using technology to engage students in reading and writing. Research into practice. *Middle School Journal*, 32(5), 45-50.
- Potter, L. & Small, J. (1998). Utilizing computers for reading improvement in a junior high: A case study. *International Journal of Instructional Media*, 25(4), 383-387.
- Shaver, J. & Wise, B. (1990). *Literacy: The impact of technology on early reading*. ERIC Document No. ED327832.
- Tracey, D. & Young, J. (2005). *An internet-delivered, individually differentiated reading program: Effects on students' literacy achievement and technology skills*. ERIC Document No. ED491559.
- Voogt, J. & McKenney, S. (2008). Using ICT to foster (pre) reading and writing skills in young children. *Computers in the Schools*, 24(3-4), 83-94.