

Value Added Online Professional Development: Enhancing state professional development initiatives to target state professional development needs

Gypsy Abbott, PhD  
The University of Alabama at Birmingham

Richard Littleton, EdD  
Alabama Public Television

Lynne Meeks, EdD  
Alabama Public Television

Nancy Hill, MA  
Alabama Public Television

Kathy Chandler, PhD  
Birmingham Southern College

#### Abstract

This study examined pre - post survey results and analysis of online discussion forums to determine the “value added” of including the Reading First: Supporting Early Reading Instruction with Technology course offered through e-Learning for Educators initiative in the professional development of Alabama teachers who had been trained by The Alabama Reading Initiative (ARI). The study was commissioned by e-Learning for Educators, Alabama. e-Learning for Educators is an eight state initiative funded through the United States Department of Education Ready to Teach grant and is administered by Alabama Public Television. Alabama Public Television and The Alabama State Department of Education are program partners in the e-Learning for Educators, Alabama initiative. The researchers captured qualitative data from online discussion forums weekly during the duration of the course sessions. Quantitative data were gathered from pre and post surveys developed and piloted by the evaluation team. Quantitative data were analyzed utilizing independent *t*-tests and paired *t*-tests; descriptive statistics were computed. Qualitative data were analyzed by case and across cases to identify emergent themes. Conclusions were drawn and recommendations made for program improvement. Findings indicate implications for online course developers, online course facilitators, educational policy, teacher preparation programs, as well as state and national educational initiatives.

#### Introduction

According to Zibit (n.d.), multiple strategies are needed to meet the increasing demand for highly qualified teachers. Online professional development (OPD) is one of the strategies available to educators. OPD helps to meet demands placed on teacher recertification and professional development requirements. The concept that online development can be provided “any time, any place” is a driving force behind the use of e-learning in professional development for teachers. Clearly, use of e-learning necessitates

a paradigm shift relative to face-to-face delivery of professional development (Kleiman, n.d.).

Supported by a Ready to Teach grant from the U.S. Department of Education, Alabama Public Television (APT) is leading the e-Learning for Educators (efE) initiative that includes partners from state departments of education and public broadcasting stations in eight states, the Educational Development Center (EDC), and Boston College. The purpose of the initiative is to establish a sustainable and scalable system of high quality OPD for k-12 teachers that is aligned with state identified needs.

One focus of the initiative has been to determine the “value added” of the OPD courses that purposefully supplement existing important state training initiatives. The concept of “value added” is not new; it has been used in educational research since the 80’s, notably by Achilles, Zaharias, Nye, and Fulton (1995) in their study of the effect of class size on student learning outcomes.

In Alabama, during the first two years of the project, the efE OPD courses were strongly aligned with The Alabama Reading Initiative (ARI), a state wide initiative to improve the reading skills of k-12 public school students. It has been both important and instructionally sound to determine and document any “value-added” contributions of the efE courses in relation to the ongoing emphasis of ARI training for Alabama teachers. Toward that end, a comparison was made between the instructional goals of ARI and one selected efE course: Reading First: Supporting Early Reading Instruction with Technology (referred to as Reading First hereafter). The comparison establishes a framework for examining the “value added” of the Reading First course in the professional development of Alabama teachers.

The comparison of ARI and the Reading First course indicates the potential for two additional benefits to teachers who were previously trained in ARI strategies. First, the Reading First course reinforces concepts of the five components necessary for success in early reading: 1) phonemic awareness, 2) phonics, 3) comprehension, 4) fluency, and 5) vocabulary (National Institutes of Health, 2000); these are presented in both ARI training modules and further emphasized in the Reading First course. An additional benefit of the online Reading First course is that it emphasizes the use of technology to enhance these basic components of reading success. In addition, the Reading First course provided an opportunity for participants in the online course to reflect upon and to discourse with their colleagues about these five key components and instructional strategies that incorporate technology to support reading. This has served as a follow-up to previous ARI training, with follow-up being a key component in the Standards for Professional Development established by the National Staff Development Council (2001). Second and specific to the Reading First course, participants had the opportunity to spend weeks thinking about, and learning to use, various technology tools to support Early Reading in their classroom.

## Methods

*Design.* A mixed methods evaluation design was used to examine 1) a qualitative analysis of the online computer mediated discussion forums for two of the four sections of the Reading First course, presented in online format between February and April, 2007, and 2) changes in teachers’ knowledge related to supporting early reading from the summary document of the National Reading Panel (NRP) (National Institutes of Health, 2000).

Because of the short timeline and limited number of participants, this study employed a pre-experimental design (Heffner, 2004). A follow-up study, to be conducted in the fall of 2008, will be a quasi-experimental design.

*Development of the ER Survey.* The e-Learning for Educators Early Reading (ER) Survey was developed by the evaluation team. All items were content valid for the content of the NRP report and were directly related to the five reading competencies necessary for success in early reading. The ER Survey was reviewed by a panel of content experts in the area of literacy from the University of Alabama at Birmingham. The survey was pilot-tested at a private liberal arts college during the winter of 2007 utilizing strategies as prescribed by Gall, Gall, and Borg (2003). The purpose of the pilot test was to expose needs for adjustment to the ER Survey. The pilot sample included 25 students enrolled in k-5 education courses. Adjustments were made to the survey as noted in the pilot process. The final survey was comprised of 15 multiple choice items and three open-ended items that required application of the five concepts. Scores could range from 0 – 27.

*Data collection procedures.* Collection of qualitative data was conducted by capturing each discussion forum for two of the four groups so that subsequent analysis could be conducted. These data were captured on a weekly basis.

Collection of quantitative data was accomplished by administering the ER Survey as a pre- and post-assessment at the beginning and end of the course. The ER Survey was attached to an email that was sent to all participants. There was a low response rate for the ER survey, resulting in a small sample size of respondents. The qualitative data indicated that many participants were either not skilled enough to open the attachment or did not have the hardware or software necessary to do so. The most plausible explanations for this were 1) low levels of technology proficiency at the pre-test time and 2) the survey was not directly administered by the evaluation team.

*Data analysis procedures.* The discussion forum for the two sessions in which the greatest amount of posting was done was transcribed into text format for analysis. Content analysis, as prescribed by Patton (2002), was conducted. Emergent themes captured the experiences of the participants relative to the Reading First: Supporting Early Reading Instruction with Technology courses.

Pre- and post-test scores from the ER Survey were calculated. Due to the fact that only 26 participants completed the pre-ER Survey and only 14 participants completed the post-ER Survey, both pre and post ER Survey results were combined. Small sample size for pre-ER Survey and post-ER Survey posed severe limitations on the generalizability of the study beyond the sample. Data were analyzed using independent *t*-tests and paired *t*-tests; descriptive statistics were computed.

#### Qualitative Analysis of Discussion Forums

Participants were 35 students, 7 staff/teachers, and 6 auditors that participated in online discussions as part of two sections of the eE online course, Reading First, during the spring of 2007. Participants represented a diverse group comprised of practicing teachers, retired teachers, and administrators from across the state of Alabama. Practicing teachers that self reported their major area of work were predominately teaching in Grade

pre-kindergarten to Grade 5. The researcher was allowed access to the discussions but did not participate in the discussions.

Emergent themes relative to discussions in two sections of the Reading First course included: participation in the online courses; use of technology as a support for teaching reading; challenges and benefits of using technology in the classroom; planners; and discussions outside of the topic areas. The following discussion presents these themes.

*Participation in the online courses.* There was a high completion rate among participants. Beginning and end of course roster comparison of the two different sections of the Reading First course revealed that most of the participants that began the series of six sessions finished all sessions of the course.

An examination of the numbers of postings revealed a total of 676 messages posted during orientation and the six learning sessions that followed. Other non-related postings included three additional messages. The range of numbers of postings for Section 1 of the course ranged from 23 in Session 5 to 77 in Orientation. For Section 2, the range of postings was a low of 29 postings in Session 5 to a high of 100 in orientation. According to the instructions posted under assignments of both sections included in the analysis indicates an expectation of at least one original thread and one response to an original thread during each session. Participants posted generally along those limits. There did not appear to be a pattern of the same participant posting in like numbers across the six sessions of each course.

Participation throughout all sessions seemed to indicate that participants from Section 1 and Section 2 utilized the discussions for the purpose of enhancing the learning during the courses. Participation during Orientation revealed the establishment of networks among participants. Participation during the learning sessions revealed sharing of experiences related to the session topics. Participants often shared personal experiences of how they used technology in their classroom or commented on how they planned to use the resources or instructional strategies learned during the session.

Several of the participants demonstrated their uncertainty related to using the technology required by the course. This discovery exposed participant insecurity related to use of the instructional format. One teacher perceived that she was the “least computer literate” among the other class members. Another teacher reported that this course was her “first online course and I am a little nervous about navigating my way around since I am not that computer savvy.”

*Use of technology as a support for teaching reading.* Participants discussed many ways that technology can be used to support teaching reading. It was evident that participants thought that technology could be used to support reading instruction in elementary grades as well as in middle school grades and high school grades. The use of technology to support reading instruction was less evident in pre-school classrooms. In the elementary grades, the feelings were mixed on use of technology as independent study for kindergarten through Grade 1. Teachers perceived that some computer programs used to teach phonemic awareness may spawn undesired results in other areas of the child’s education. Teachers agreed that technology could not take the place of a teacher in the classroom.

Some participants felt that technologies to teach reading were best used with students to provide independent practice and “corrective feedback” in “high poverty” schools where students may not have access to technologies outside of school. Most agreed that technology should be used along with a program of direct instruction. A veteran first grade teacher reported, “I’ve taught first grade for 13 years and have always used a program that teaches direct instruction in phonics.” Another first grade teacher reported that “technology plays such a vital role in today’s life. Finding time to use technology in my first grade classroom is hard.”

Technology was seen by one participant as a tool to use with struggling readers. She reported, “Incorporating technology helps me to give them (struggling readers) an extra bit of remediation even while working with another group.” Another participant suggested using technology as a “literacy center” thus allowing her “to incorporate technology on a daily basis.” She continued with “finding a strong phonics -based software program is much easier today than years ago.”

Technologies that employ easily recognizable characters such as Clifford, as well as recognizable materials such as those related to Dr. Seuss seemed, to be perceived as more useful tools to develop phonemic awareness. One comment related to this perception. “My son and I really liked the Clifford website. I think that children enjoy seeing things that they are familiar with like the Clifford characters from books and PBS.”

Participants felt that technologies to support reading instruction should be interactive, provide immediate feedback, be user friendly (usable by young children working independently), and be entertaining. One comment seemed to capture this perception.

I went to the Clifford website with my son. He loves Clifford, so he was excited to see him on the computer screen. I could see where this would be excellent tool to aid in the development of phonemic awareness. He enjoyed the sound match game and did quite well with this. The concentration game was a little advanced for him now, but I could definitely see the advantage of its use in a classroom. This is something the students could do completely independently once they learn the use of the mouse.

Participants offered suggestions and strategies to help ensure that technology use would enhance reading instruction. Among the suggestions were: giving specific direction to those who need it, choosing sites that are not difficult for students to understand, not using technology as a “babysitter,” and monitoring student understanding.

*Challenges and benefits of using technology in the classroom.* Throughout the discussions, issues of using technology in the classroom were raised by the participants. They seemed to see benefits and challenges of using technology not only as a tool for reading instruction but in terms of using technology in the classroom in general. Participants perceived the benefits of using technology in the classroom to include improved student learning and teacher use of “exciting” technologies. Participants

perceived the challenges related to using technology in the classroom to be choosing age- and ability-appropriate technology, funding, and a lack of both hardware and software to support reading instruction appropriately.

Many teachers that registered for the course reported that they hoped to learn new and “exciting” ways to use technology in their classroom. This seems to suggest that traditional teaching strategies are not motivating to many teachers and the “search” for new and “exciting” ways to use technology in the classroom may benefit the teacher as well as the student. The single administrator in the group reported that she enrolled in the course to “better assist my teachers with technology in the classroom.” This reason to take the course could be seen as a benefit of using technology in the classroom. Perhaps school administrators see the benefits of using technology to assist instruction.

Respondents perceived that technology could enhance student development of phonemic awareness if the teacher used technology properly. Much of the discussion focused on the use of technology in the classroom in general. One teacher seemed to speak for the group when she commented, “... The animation of software programs help young children develop phonemic awareness because it "grabs" their attention and is able to hold the attention much longer than we as teacher's sometimes can. ... Computer audio systems can't replace a clear, concise human voice.”

Areas of concern and challenges related to costs associated with the technology, availability of computer equipment necessary to use technology in the classroom, and time available to use the technologies. One respondent remarked, “As great as these programs are, I think we all face the same challenge that I know I need help with. I only have three computers in my room. How do you schedule time for those students that need these programs?” Another felt that “There is just not enough money in schools to have sufficient technology to accommodate the needs of the students.” Computer labs were seen as “... not always available at the time you need it.” Computer lab times were seen as “usually already planned by the tech instructor with her own objectives.” Computers were seen as “getting older and starting to have problems.” The teacher went on to state that “In the ideal world every child would have a computer. We have to have dreams.”

All participants seemed to recognize the impact technology has had in society and thus, the classroom. Although there were challenges related to using technology to support instruction, the challenges did not outweigh the general perception that learning about technology supported instruction is important to teacher satisfaction and student learning.

*Planners.* A major component of the courses was the creation of a Reading Strategies Planner. The focus of Session Six was to provide an opportunity for participants to post Reading Strategies Planners and to make comments relative to the planners of other participants.

An examination of the Reading Strategies Planners posted during Session Six revealed a variety of lessons. Many lessons reflected software packages and websites highlighted during the course.

*Discussions outside of the topic areas.* One theme that was not directly related to the topics of the workshop sessions was related to the Alabama Reading Initiative (ARI). Although the workshops do relate to ARI and accounted for only a small number of the

total discussion messages, this category may have major significance to a link between ARI and the Reading First course. This connection indicated that the course helped to reinforce concepts taught during training for ARI.

#### Quantitative Data Analysis

*Research questions and hypotheses.* The quantitative component sought to examine teachers' knowledge related to supporting early reading from the summary document of the National Reading Panel (NRP) (National Institutes of Health, 2000). Research questions included: Was there a statistically significant difference in gains between pre-test scores and post-test scores of teachers who had taken the Reading First course as measured by the ER Survey? Was there a statistically significant difference between pre-test scores of teachers who had received ARI training and pre-test scores of teachers who had not received ARI training as measured by the ER Survey? Was there a statistically significant difference in pre-test scores between those teachers who completed the reading assignment and those who did not complete the reading assignment prior to participating in online professional development?

In order to document a "value added" contribution of the Reading First Course, a comparison was made between the goals of ARI and the Early Reading Course. The comparison provided a framework for examining the "value added" of including the Reading First Course in the professional development of Alabama teachers. It was hypothesized that there was a statistically significant difference relative to the research questions, and that the Reading First Course was effective in promoting knowledge of content related to teaching skills that have been demonstrated to promote early reading skills for students. Thus, the Reading First Course added value to ARI training as measured by the ER Survey. Because of limitations to the study, findings of the quantitative component could not be generalized beyond the present sample.

*Demographic data analysis.* Data from the ER Survey for pre- and post-assessments were obtained from a sample of participants containing members from all four sessions that were taught in spring of 2007. Total number of participants in the sample was 41.

Of the 41 participant scores, one score was excluded as an outlier with a pre-test score of 0. The ARI training status was identified for all 40 participants, as was the status of participants having read the pre-course reading assignment prior to taking the pre-test or by the time of the post-test. Pre-test scores ranged from 2.0 to 12.75 out of 18 possible points; mean score was 7.2 ( $SD = 2.8$ ). Post-test scores ranged from 4.75 to 15.00 out of 18 possible points; mean score was 10.5 ( $SD = 3.5$ ).

*Analysis of pre and post ER Survey data.* A total number of 6 participants recorded both pre and post test scores; 2 of the 6 participants were pre-service teachers. A paired  $t$ -test was performed to investigate the significance in gains between pre- and post-test scores over time. Results indicated there was a statistically significant gain in scores between the two testing occasions ( $t = -4.7$ ,  $df = 5$ ,  $p = .005$ ) for the sub sample of participants recording scores for both pre- and post- tests.

*Analysis of pre ER Survey data relative to ARI.* Further investigation through independent  $t$ -tests shows that, as a group, when the factor of having had ARI training prior to online

training was considered, there was a statistically significant difference between pre-test scores of teachers who had received ARI training and pre-test scores of teachers who had not received ARI training ( $t = 2.1$ ,  $df = 22.7$ ,  $p = .04$ ), but *not* between post-test scores of teachers who had received ARI training and post-test scores of teachers who had not received ARI training ( $t = .3$ ,  $df = 12$ ,  $p = .773$ ). This implies that ARI training status may have impacted the results of the pre-test; however, by the end of the professional development training sessions, participants' knowledge about the five skills needed for early reading success, as measured by the e-Learning for Educators ER Survey, were similar.

*Analysis of pre ER Survey data relative to the required reading assignment.* Finally, an independent  $t$ -test was performed to investigate the impact on the pre-test scores of the reading assignment that was to be completed prior to participating in online professional development. By the end of training, all participants indicated the reading assignment had been completed so there was no need to test the impact of the reading assignment on post-test scores. Results of the independent  $t$ -test indicated that, while there was a difference in mean scores between those teachers who completed the reading assignment and those who did not ( $M = 8.8$ ,  $M = 6.7$ , respectively), the difference was not found to be statistically significant ( $t = 1.7$ ,  $df = 24$ ,  $p = .12$ ).

### Conclusions

The Reading First course has been effective in promoting both 1) knowledge of content related to teaching skills that have been demonstrated to promote early reading skills for students and 2) knowledge of technology to enhance instruction in the classroom. This was documented by the content analysis of the discussion forum for two sections of the course with respect to the five components needed for early reading and in use of technology to support reading skills. In addition, although the sample was small, pilot results from the ER Survey also support a growth in knowledge related to the five components. The ER Survey will be used to measure teacher knowledge outcomes during the fall of 2007 when this course will be taught again. One lesson learned from the initial evaluation of this project is that it is preferable for the evaluation team to take responsibility for the gathering pre- and post-test data. It is anticipated that there will be a significantly higher return rate during the fall courses if surveys are distributed by evaluators directly to participants.

The quantity of posting of both Sections 1 and 2 waned during Sessions 4 and 5. This is not to suggest that interest in the course was less during Sessions 4 and 5 but to inform future examinations of a correlation between the quantity in numbers of posting on discussion forums and the quality of the content of postings relative to the five components needed for early reading and in use of technology to support reading skills.

In summary, the Reading First course provided information that increased participants' knowledge about the components needed for effective teaching of early reading skills, as well as their knowledge of technology to enhance instruction in their classroom. Continued evaluation is recommended to answer questions related to 1) the number and quality of postings and 2) participants' knowledge of skills for effective teaching of early reading.

## References

- Achilles, C.M., Zaharias, J.B., Nye, B.A., & Fulton, D. (1995, November). *Analysis of Policy Application of Experimental Results: Project Challenge*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Biloxi, MS. (ERIC Document Reproduction Service No. ED393151)
- Gall, M. D., Gall, J. P., Borg, W. R. (2003). *Educational Research: An introduction* (7<sup>th</sup> ed.). Boston, MA: Pearson Education, Inc.
- Heffner, C. L. (2004). Research Methods: Pre-experimental design [Electronic version]. *AllPsych online*. Retrieved November 21, 2007 from:  
<http://allpsych.com/researchmethods/preexperimentaldesign.html>
- Kleiman, G. M. (n.d.). *Meeting the Need for High Quality Teachers: e-Learning solutions*. Paper presented at the U.S. Department of Education Secretary's No Child Left Behind Leadership Summit: Increasing Options Through e-Learning. Retrieved September 7, 2007 from:  
<http://www.ed.gov/about/offices/list/os/technology/plan/2004/site/documents/Kleiman-MeetingtheNeed.pdf>
- National Institutes of Health. (2000). Report of the National Reading Panel: Teaching children to read (NIH Publication No. 00-4769. Retrieved September 14, 2007 from: <http://www.nichd.nih.gov/publications/nrp/smallbook.cfm>.
- National Staff Development Council (2001). *National Staff Development Council's Standards for Staff Development*. Oxford, OH: National Staff Development Council. Retrieved September 14, 2007 from  
<http://www.nsd.org/standards/index.cfm>
- Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods* (3<sup>rd</sup> ed.). Thousand Oaks, California: Sage Publications, Inc.
- Zibit, M. (n.d.). The Peaks and Valleys of Online Professional Development [Electronic version]. *eLearn Magazine: Education and Technology in Perspective*. Retrieved September 7, 2007 from:  
<http://www.elearnmag.org/subpage.cfm?section=research&article=3-1>