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Building Their Stories: Electronic Case Studies of Struggling Readers

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Ten university graduate students created electronic case studies describing the learning of struggling readers as a part of this study designed to yield insights about literacy education and the efficacy of electronic case study development. A variety of data, analyzed through a qualitative content analysis, revealed understandings regarding participants' perceptions about themselves as learners, ideas about their influences on students, and revelations about literacy instruction. A final theme revealed that, as participants reflected upon their own learning; they also voiced a commitment to literacy teaching that went beyond their personal classroom settings. Further, researchers gained insights about how to better prepare literacy educators, as well as how to more effectively integrate technology into the case study process.

This study examined the process university graduate students used to create electronic case studies describing the learning of struggling readers. Data were collected during a semester-long capstone experience for two linked graduate literacy courses. In addition to analyzing the effectiveness of compiling such case studies electronically as compared with doing so in hard copy format, we examined participants' learning as both literacy educators and "emergent" technology students.

"How should teachers be taught to teach reading?" (Anders, Hoffman, & Duffy, 2000). This question is a critical consideration for both preservice teacher preparation and ongoing professional development. Recent studies offer insight into this question by examining the learning of literacy teachers as they assess and tutor struggling readers (Duffy & Atkinson, 2001; Laster, 2001). Case study methodology, most typically employed in these recent literacy studies, offers promise as a means for teachers to systematically consider the "problems, dilemmas, and complexity of teaching something to someone in some context" (Levin, 1995, p. 63). The power of case studies within teacher education is well documented (Fasko, 2001; Merseth, 1991; Shulman, 1986). Its focus on individual student needs prepares educators to foster academic achievement for increasingly diverse learning populations (Darling-Hammond & Snyder, 2000), an asset of particular relevance in today's schools.

Furthermore, because there are benefits attributed to using technology as a tool in literacy instruction (Labbo, 1999; Leu, 2000; Leu & Kinzer, 2000; Morrow, Barnhardt, & Rooyakkers, 2002; Piper, 2000), linking case study methodology with emerging technological tools (Bowers, Keneham, Sale, & Doerr, 2000; Merseth & Lacey, 1993; Richards, 1998) offers promising possibilities for better preparing literacy educators to foster student success. Within most educational settings instructional technology integration is a routine expectation, and can be used to efficiently contribute to effective instruction. While teachers' personal use of technology often leads to increased classroom implementation, teachers also stand to benefit from the availability of a variety of web-accessible literacy resources. Using electronic formats also provides special advantages over more traditional documentation and assessment methods, including greater convenience, portability, and

interactivity (Powers, Thomson, & Buckner, 2001). While these advantages enable multiple student academic profiles to be shared with a potentially broad audience of teacher learners, there are benefits for the literacy teachers who create them. In addition to providing an inviting format, the creation of electronic case studies offers a unique opportunity for the literacy teachers in this study to "cast themselves as learners" (Piper, 2000, p. 11). Specifically, while developing or refining technology skills, literacy educators may struggle to learn (Watts, 1997), much like students in their own classrooms who struggle with reading difficulties.

Methodology

Context and study participants

Students who participated in this study had previously completed a graduate course that focused on assessment procedures and instructional practices for diagnosing and remediating reading difficulties. In the course during which data were collected for this research, these same students applied prior learning within a one-to-one tutoring relationship with a struggling reader. Study participants assessed their tutees' literacy proficiencies, discussed prior progress with their parents and/or classroom teachers, and planned hour-long weekly tutoring sessions. One author/researcher, Atkinson, observed tutoring interactions and provided feedback for tutors, both in person and via e-mail. Participants compiled electronic case studies about each struggling reader throughout the semester and included the following components: personal information about the tutee, initial and final literacy assessments, an overall evaluation of student progress, tutoring session plans, video footage/digital photographs depicting tutoring sessions, weekly teaching reflections, and a summative analysis detailing graduate student learning. Students received a one-hour orientation session focused on the portfolio format and Lectora software features. Furthermore, a detailed quick reference packet was provided that "walked the students through" setting up the portfolio shell and adding additional information. After this initial overview and training, one or both of the researchers were available for student support during scheduled times for portfolio building. Participants chose to use either Lectora multimedia authoring and

publishing software, PowerPoint, or Netscape Composer to document their case studies. To reduce the risk of bias, formal data analysis did not proceed until after students' grades were submitted. Of the eleven graduate students who completed this course, ten agreed to have their case studies analyzed for the purposes of this study.

Data sources and analysis

Primary data collection took place over the course of a 15-week semester and included one document completed in the previous semester. Particular data sources for this study included electronic case study components; small group on-line discussions about the reading comprehension strategies outlined by Harvey and Goudvis (2000) in the text, *Strategies That Work*; final course evaluations; comments from an end-of-course face-to-face discussion; pre/post technology proficiency surveys; a final reflective essay detailing understandings about struggling readers (completed at the conclusion of the previous semester); pre/post assessments about technology learning; and field notes collected by the course instructor.

Data were analyzed through a qualitative content analysis (Patton, 1990). In Phase I, <u>informal analysis</u>, Atkinson reflected upon and modified her instruction as she read, commented upon, and graded students' written assignments and e-mail reflections. Reflective essays from the end of the previous semester and field notes recorded during tutoring sessions were also examined. In Phase II, <u>coding</u>, analytical and methodological memos were written on data sources by Atkinson and Williams, the other researcher/author. In Phase III, <u>category creation</u>, memos were used to determine the categories that emerged from the data. During this process, codes generated individually by each researcher were compared and organized into overarching categories. For example, several memos recorded an instance of students reflecting upon their own learning (either in this class or during their K-12 teaching) as it related to newly developed knowledge about pedagogy from this experience. This resulted in "self as learner" becoming one of the themes discussed later in this paper. In Phase IV, <u>category consensus</u>, data were triangulated as Atkinson and Williams located evidence for creation of categories. During this process, Atkinson and Williams ensured that

information included in the categories identified in Phase III were confirmed from more than one participant and found within multiple data sources. In Phase V, <u>audit</u>, a colleague familiar with qualitative methodology reviewed the data analysis procedures to establish credibility and trustworthiness of the findings.

Findings

Study participants documented that they gained many specific understandings about literacy teaching across the semester, and this learning was grounded with some basic insights about themselves as readers and learners. Specifically, examination of the research data resulted in identification of four broad themes that are listed below and discussed in the following narrative. All names mentioned are pseudonyms.

1. Self as learner: Within the research data, participants noted reflections about themselves; self as readers, self as students, and self as technology learners.

2. Influences on students: This theme addressed the influences of graduate student participants' learning on their students, within both the tutoring and classroom settings.

3. Specific literacy teaching understandings: Participants elaborated about many specific new understandings they had gained about teaching literacy, as well as evidence of their transformations of these understandings into practical teaching practices. Comments fell within the following five categories: a) assessment, b) reading comprehension, c) word study, d) individualization, and e) teacher modeling.

4. Overarching understandings and professional implications beyond the classroom: The research data enumerated teachers' intentions to reflect upon learning, increased confidence in teaching ability, and commitment to sharing information with others.

Theme 1: Self as learner

Self as reader. Evidence consistently revealed that participants in this study reflected upon their past and present *personal* reading practices, experiences, and preferences. For instance, Amy noted how the strategies she modeled for her tutee helped her (Amy) as a reader and suggested that, "If teachers are caused to analyze how they read and comprehend, then they can better teach this to their students." Participants also frequently elaborated about their own reading struggles with comments such as, "All readers space out when they read – I thought I was alone – this (segment of *Strategies That Work*) made me think about how I compensate by rereading" (Star); "I can relate to this (spacing out). I can imagine how a student feels." (Lynn); and "Reasoning through the text (a strategy described in *Strategies That Work*) would have helped me enjoy history...Maybe if it (history) had been presented through different genres, I could have learned to enjoy it." (Akema) At least half of study participants recalled having difficulty in earlier grades with selecting important information from expository text, resulting in taking irrelevant notes or highlighting excessively. Importantly, every teacher participant spoke of personally applying newly learned strategies resulting in significant gains in reading comprehension.

Self as student. Comments from participants identified specific beneficial course components that influenced them positively as learners. Three areas noted consistently were 1) frequent, meaningful (in this case, on-line) discussions with class colleagues about course readings, 2) highly relevant textbooks selected for this class and the previous course, and 3) experience gained in the one-to-one tutoring situation.

Because class time was spent tutoring and creating electronic case studies, discussion about course readings occurred on-line within discussion board forums. Although many study participants expressed the desire to hold more in-class discussions, the on-line forums revealed rich, recursive dialogue and idea sharing among classmates (which may or may not have happened in a class discussion where candidates typically looked to the instructor to do much of the talking). Comments such as, "I didn't understand about 'tracks' (notes about comprehension)

until I read what you wrote"; "I had read, but after reading your comments, (I) went back and reread"; and "the whole time I read this section, I was thinking about your situation," reveal that the participants in this study were interacting with their peers in a way that deepened their own understanding and application of the text. Further, participants' comments consistently noted satisfaction with the course textbooks indicating the perception that they served as effective instructional resources during the tutoring experience and would serve in the same capacity in the future.

Each study participant reported immeasurable learning gains from her one-to-one tutoring experience. Although some stated concern at the beginning of the semester that they did not feel as if they could "make a difference" with a tutee in such a short time, they indicated surprise about how much progress students actually made as the semester concluded. Julie commented that "the tutoring experience was a powerful setting for both those with teaching experience and for those without." Although the number of prior one-to-one teaching experiences varied widely across the ten graduate students, gains in confidence within this individualized venue were stated explicitly by more than half of the study participants.

Self as technology learner. Comments about learning to employ technology as a medium for creating electronic case studies spanned a wide continuum. Some students voiced appreciation for the opportunity to broaden their technology skills, while others expressed concern that the time spent learning to use the software diminished their opportunities to discuss their tutees' progress or course readings in class. Anna mentioned the technology favorably, "As a bonus, I am a far cry more able to navigate my way through a computer program than I ever dreamed!" Jamie stated that "the electronic case study is a professional way to share information. I'm glad that I will have it in my (graduate program) portfolio."

Upon beginning this case study experience, we documented a wide range of familiarity with technology among research subjects that seemed to affect their comments. Most struggled with the use of technology and were clearly nascent learners in this arena. This factor

may have impacted the fact that only two participants elaborated about how much technology integration enhanced their case study learning experience. For example, Akema needed support and guidance in order to save word processed documents and send email messages to the course instructor. Julie articulated her frustration by stating, "get rid of the electronic format...my focus was on getting it finished...not (on its) content." Her attempts to complete case study components independently were largely non-existent and suggestions offered by the instructors for improving her electronic case study organization and editing uploaded documents were repeatedly disregarded. In contrast, Amy easily became adept with the portfolio software that was used as a model (Lectora) and indicated that she felt "comfortable with the technology." Additional remarks from study participants focused less on whether or not the electronic format was useful, helpful, or appropriate, but more on how to improve the integration of technology learning within the case study task. These suggestions included the need to have access to software at home, a request for longer periods of time to work on the portfolio, and the desire for working with an initial template with "all of the kinks worked out," rather than creating one "from scratch."

Despite the fact that technology learning in this course presented students with many challenges, technology survey pre/post results revealed that all graduate student participants gained significant technology expertise during the semester, and attributed this increase to the electronic case study experience. The surveyed technology competencies that participants most consistently linked with this experience are as follows: burning CDs (56%); using a scanner to digitize images (78%) and text (67%); compiling, organizing, and editing electronic data (78%); importing images, documents, video clips, and audio segments (78%); and creating buttons and links with various forms of software (56%).

Theme 2: Influences on students

Within tutoring sessions. Graduate students consistently applied new understandings about literacy assessment and instruction as they tutored struggling readers. Study participants administered multiple assessment measures in order to appropriately focus their literacy

instruction and support. Rhonda illustrated such understandings as she stated, "instruction for struggling readers should begin with assessment and close observation. This tells you what a child is doing while reading. This assessment should be ongoing and drive instruction." Six of ten graduate student tutors spoke explicitly about using various assessments in order to confirm the reliability of their conclusions. Akema's comments noting that multiple assessment outcomes "all pointed me in the same direction" exemplified this practice.

As tutors planned and implemented their weekly one-to-one literacy sessions, evidence of the literacy learning gained within this course was well documented. All participants demonstrated increased understandings as they linked initial assessments to subsequently planned instruction. Specifically, Starr expressed delight as her student actually made some of the "text-to-self" connections that Starr had modeled for her. Anna noted increased reading comprehension as her tutee used "sticky notes" to document her responses and connections as she read. Finally, Amy, who was not teaching while she was taking this course, found that her one-to-one tutoring opportunity allowed her to apply what she had learned by assessing and teaching a "real" student, rather than speculating about the process.

Within classroom settings. Within the theme of influencing students, the data consistently documented study participants' efforts to employ new literacy assessment and teaching strategies not only with their tutees, but also within their classroom settings. Nine of the ten students in this study taught in school classrooms full-time during the day and participated in evening graduate classes. All nine full time teachers used this course as an opportunity to augment, question, refine, and validate their present practices. Many validated or refined their teaching as illustrated by Dulaney who stated that after considering her present literacy practices, "I realize that I was actually teaching visualization" without fully understanding what she was doing. Others questioned current perceptions:

> I was guilty of thinking that many reading skills should have been taught and mastered in elementary school. This course has forced me to rethink my teaching strategies. I now have an

> alternate route for instruction...vocabulary development, spelling instruction, and comprehension included!
>
> -Suzanne, high school teacher

Additionally, Starr indicated that she had learned to listen more carefully to students' responses within her classroom Literature Circles to determine if they were "thinking about their thinking." She further justified her use of this approach by stating that reading with students in whole class settings precluded this sort of close observation.

Finally, several participants' insights focused on the impact of high stakes testing on classroom literacy teaching and learning. Teachers repeatedly mentioned the temptation, and at times, "pressure" to spend large amounts of class time with rote preparation for standardized tests. The incongruence between such test preparation emphases and what was being learned as "best literacy practice" was mentioned by more than half of the study participants, and Suzanne summed up this notion by stating, "My students need to become stronger readers before they can become better test-takers. Practice tests don't make them good readers."

Theme 3: Specific literacy teaching understandings

Assessment. A prominent theme emerged within the data documenting an increased understanding of the purpose and procedures for student literacy assessment. As mentioned within previous sections, study participants triangulated multiple assessment data sources in order to draw conclusions regarding their tutees. Some candidates were able to use assessment data to determine not only the reading levels of their students (targeting *what* to teach), but also how to make their instruction inviting and motivationally appropriate (determining *why* the student was having difficulty and *how* to teach). All study participants noted using specific assessment measures for the first time and indicated that they would definitely use them in the future. Those mentioned consistently included the multiple assessment components in the *Qualitative Reading Inventory-3 (QRI-3)*, *Words Their Way* Spelling Inventories, and running records.

Reading comprehension. Suzanne noted that initially her tutee was "....simply looking at words – the meaning is absent." Other participants echoed similar observations about their students' lack of reading comprehension. Specifically, the importance of explicitly teaching reading comprehension strategies was now understood by the graduate students in this study as crucial for struggling readers who gained little meaning while reading text. Many quotes from the data documented this new insight, a sample of which follows; "Thinking aloud is new to me. Our (classroom) discussions have become more powerful. The words are not simply rolling over their eyes. They are making their way into their brains and hearts" (Suzanne); "teachers try to get kids to infer, but don't connect visualizing with inferring. I didn't either until I read this chapter. This (strategy) should be incorporated into math, science, and social studies" (Julie); "the more we know about something, the more questions we have...I never thought of it this way, but it's the truth" (Jamie); "We focus on asking questions and don't teach children to generate questions on their own" (Dulaney); and "most students will never think like this unless we introduce them to these thoughts" (Lynne).

In addition to the comments mentioned above, study participants also documented new learning relative to several specific reading comprehension strategies and tools. These included understanding the importance of connecting literacy experiences to the interests and background knowledge of students; the wide range of possibilities for reading picture books to build background knowledge at all age levels; the importance of including non-fiction texts within literacy learning; and the need for specifically targeted use of sticky notes or highlighters to determine and record important information.

Word study. Participants enthusiastically applied their knowledge about word study assessment and instruction within tutoring sessions and within their own classroom settings. Having gained initial exposure to these understandings in their previously linked graduate course, they consistently documented either refining the word study instruction embedded in their current literacy programs or, in most cases, adding these activities for the first time. Dulaney noted, "I have been able to strengthen my ability to incorporate word study into my classroom and really make a difference with those students that struggle with reading &

spelling." Starr commented, "My knowledge about word study has been strengthened. I now know how to meet specific needs with word sorts and activities." She further elaborated, as did others, about the leaps in confidence that were gained from this course relative to word study assessment and subsequent developmentally appropriate teaching.

Individualization. The graduate students in this study reported new insights about the importance of individualizing literacy instruction and materials for students, depending on their specific needs, understandings, and interests.   Half of the participants stated that their belief in "the power of working one-to-one" with students had also been strengthened. Dulaney emphasized the importance of assuring tutee success by knowing her student well (though formal and ongoing informal assessment) and providing immediate feedback within individualized instruction. Additionally, study participants shared ideas about how to incorporate individualization within the larger classroom setting. Examples of strategies mentioned included letting students serve as "research experts" based on individual interests and abilities, finding time for the provision of one-to-one instruction within the instructional day, and considering possibilities for peer learning and teaching.

Teacher modeling. The notion that teacher modeling is crucial to the success of struggling readers surfaced consistently. Julie remarked that it is critical to model strategies for and with students before holding them accountable for applying them independently. Starr gained new insights while comparing her own understandings as a reader with the reading proficiencies of her students. She stated, "I never thought so much about the importance of modeling what comes naturally for me." The impact of teachers as "reading role models" was mentioned as Jamie suggested that students are much better at doing what teachers actually do, than they are at doing what they tell them to do. Amy took this notion one step further by stating, "Modeling is the most important thing that a teacher can do."

Theme 4: Overarching understandings and professional implications beyond the classroom

Reflection. Although study participants' emphasis on reflection and self-analysis was inherently evident within many of the comments

concluded, she attributed much of what she had to offer in her new setting to learning acquisitions gained within the course serving as the context for this study.

Summary of findings

In sum, findings reported from analysis of the research data documented significant learning among study participants. By serving as tutors for struggling readers, graduate students developed a wide array of understandings as literacy teachers, not only enabling them to scaffold the success of their tutees, but also to plan and implement more effective literacy instruction in their classroom settings. In addition, study participants detailed improvement in their own reading behaviors. Numerous specific literacy teaching understandings were detailed, enabling these educators to not only to evaluate their own reading behaviors, but to also more confidently assess their students and plan appropriate individualized instruction. Evidence substantiated consistent efforts to share new learning within participants' schools and wider educational communities. Lastly, study participants elaborated about their learning struggles as they wrestled with the problem of gaining competence as emergent technology learners.

Comparison of prior study

During the academic year preceding this study, Atkinson conducted a similar research study during which graduate students subjects compiled case studies of struggling readers within a non-electronic format (Atkinson & Colby, 2006). In both the previous study and the one discussed here, class sizes, data sources, and data analysis were similar, differing only in terms of inclusion of the electronic case study formats included within the present study. Although generalizations can not be claimed within such naturalistic studies, it is striking that findings noted in the initial study were almost wholly consistent with the findings of this present study. However, a largely developed theme within the present study was not evident within the prior study. This theme involved the participants' extensive reflections about themselves as learners. In particular, teachers explored their own experiences as readers, their learning interactions as graduate students, and their struggles as

"emergent" technology learners. This lone difference will be further examined in the following sections.

Discussion

While the question of "How should teachers be taught to teach reading?" (Anders, Hoffman, & Duffy, 2000) undergirded this research, Atkinson and Williams sought to add an additional dimension to their present study designed to explore literacy teachers as they assessed and tutored struggling readers (Duffy & Atkinson, 2001; Laster, Cobb, Dozier, Feist-Willis, Freppon, Grogen, Hill Johnston, Rosemary, Roskos, Walker, Welsch, & Zimmerman, 2001). In addition to employing the promising practice of case study methodology (Fasko, 2001; Levin, 1995; Merseth, 1991; Shulman, 1992) to document the assessment and learning interactions between themselves and their tutees, study participants compiled case studies electronically. A unanimous decision to use the electronic format was reached during the semester before the study proceeded as all participants agreed that the existence of such case studies would benefit future graduate students.

The examination of participants' learning received primary focus within this study. The data revealed significant literacy learning by graduate students who assessed and taught struggling readers. With the quest of diagnosing and remediating their reading difficulties, these literacy teachers documented their students' "stories" within electronic case study format, which they learned to construct in tandem with planning and conducting their tutoring experiences. During the entire semester, an additional text was read and explored in order to bolster the explicit teaching repertoire of these literacy teachers, many of whom noted serious reading comprehension difficulties in their tutees. Because the majority of weekly class time was spent tutoring students, discussing their progress, and adding data to electronic case studies (with the assistance of Atkinson and Williams), discussions about *Strategies That Work* took place primarily within online threaded discussion forums. Although participants were constantly anxious to discuss the text and its application possibilities during class sessions, the online format yielded far more interaction and collegial support of one another as readers and as literacy teachers than the "face-to-face class discussions" used in prior

study to achieve the same purpose. The value of exploring this text collaboratively within online discussion forums was noted repeatedly by study participants and deemed by Atkinson and Williams as a major factor in building collegial support among the small community of learners who participated in this study.

A particular unexpected theme emerged as participants elaborated upon "self as learner." Within this theme, teacher tutors focused upon their own learning rather than that of learning to teach literacy. This evidence surfaced as study subjects reflected upon themselves, and how they had become better readers as a result of what they had learned from this course. Some speculated about how newly acquired strategies would have helped them as they learned to read in school. Additionally, study subjects reflected upon their own learning process across the semester. This introspection focused upon the importance of learning with and among supportive literacy teacher colleagues who willingly shared their teaching experiences. Experiences such as these exemplify Schon's notion of the "reflective practitioner" (1983), deemed as highly effective within teacher education and professional development literature (Swain, 1998). Study participants also reflected upon what was learned from their one-to-one-tutoring experiences. The opportunity to "put into practice" what had been learned and receive ongoing feedback about tutor-tutee interactions resulted in personal gains in confidence and competence for these literacy teachers, regardless of their teaching situation or number of years of experience.

The final self-reflective learning examined within the study explored graduate students' technology learning. All participants indicated significant gains in their technology understandings due to the learning that took place while compiling their electronic case studies. However, most struggled as technology learners and did not regard this part of the semester's learning experience positively. While some participants offered suggestions for improving the use of an electronic case study format within subsequent semesters, two participants suggested getting rid of the format completely and eliminating the technology until all glitches had been worked out. Within a graduate level course designed to help remediate the difficulties of struggling readers, one might wonder if placing these study subjects in the situation

of struggling as technology learners led to these negative perceptions. Struggling as a learner is indeed so painful that some participants' focused more on this concern rather than the benefits gained (Labbo, 1999; Leu, 2000; Leu & Kinzer, 2000; Morrow, Barnhardt, & Rooyakkers, 2002; Piper, 2000) by using technology as a tool in their literacy learning.

Conclusions

In comparing this research to the similar proceeding investigation (Atkinson & Colby 2006), evidence of literacy learning within the present study was not impacted negatively with the addition of technology to the participants' learning expectations. In fact, although studies of this nature cannot substantiate generalization, Atkinson and Williams noted additional specific learning among study participants that was not evident in the first. Graduate students reflected upon themselves as readers as they learned more about comprehension strategies. They detailed their own struggles as readers, and subsequently came to value learning about strategies that would have helped themselves. Furthermore, they employed these strategies with their tutees and with students in their own classrooms. As colleagues, they shared perspectives and understandings and questioned one another as they "sorted and sifted" through new topics at hand. As they "cast themselves as learners" (Piper, 2000, p. 11), one might wonder if struggling as technology learners within this course had any impact on these insights. Watts (1997) alludes to this notion as he suggests that literacy educators who struggle to develop or refine technology skills may struggle to learn, just as their students with reading difficulties struggle to read.

Moreover, Atkinson and Williams learned a great deal about possible practical changes that might potentially impact future implementation of the case study assignment and the support provided for the technology learning necessary to compile it.   With these modifications, some of the unnecessary technology glitches impacting this study could be eliminated resulting in a more seamless process of authoring an electronic case study within similar graduate courses. Insights were gained about how software choices might be made in the future. Case studies were created with three different software programs;

Lectora, PowerPoint, and Netscape Composer. Dramatic differences in the quality of the three different types of portfolios were not apparent as the fact that each format chosen offered both strengths and limitations. Subsequent software choices will be made based primarily on inclusion of project components, support available for graduate students outside the course setting, and availability of software for at home use.

Based upon Atkinson and Williams' conclusions, the risk of plunging into the unknown territory inherent in this study was well worth the stress and effort necessary to facilitate this graduate learning experience. In an attempt to refine their own practice, the university instructors conducting this study gained substantial insight. The understandings gained by their students, although experienced somewhat painfully while wrestling with the challenges of technology, were noteworthy. Additionally, the worth of technology integration in this graduate level case study experience was more fully recognized through the lens of this research study. Lastly, with the original intent of the graduate student participants in mind, their electronic case study archive is offering possibilities for other literacy educators to explore and learn from their experiences, both in sum and in part. The advantages of this format, while well documented (Powers, Thomson, & Buckner, 2001), have the potential to impact scores of future literacy educators in their quest to better meet the needs of both struggling and non-struggling readers.

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