

**Using Multimedia Anchored Instruction Cases in Literacy Methods Courses:  
Lessons Learned from Pre-Service Teachers**

Ruby Sanny  
Purdue University

William H. Teale  
University of Illinois at Chicago

Contact Person:  
Ruby Sanny  
3805 West Howard Street  
Skokie, Illinois 60076  
773.341.6699  
rsanny@purdue.edu

### **Abstract**

Multiple theoretical perspectives are employed in the analysis of interviews and written reflections from pre-service teachers who used web-based video cases in their literacy methods courses. The four theoretical perspectives: Transformational, Transactional, Deictic, and Critical illuminate the multiple and complementary aspects of pre-service teachers' interactions with the web-based video cases. Findings are presented in four categories: 1) Patterns in Case Use; 2) Patterns of Transaction; 3) Patterns in Conceptions about Literacy/Technology Convergence; and 4) Issues of Equity and Access. Implications related to the intersection of web-based video case technology, literacy, and teacher education are drawn for literacy professors, researchers, and literacy teacher education.

## *INTRODUCTION*

From the recent review of research on teacher preparation for reading instruction by the International Reading Association Teacher Education Task Force (IRA, 2006) to the Report of the American Educational Research Association Panel on Research and Teacher Education (Cochran-Smith & Zeichner, 2005), it is clear that teacher education in general and literacy teacher preparation in particular are topics receiving considerable attention. Both research trends and federal policy have raised noteworthy issues in the area, one of which is the development of effective literacy methods courses for pre-service teachers.

The study reported here, like the work of Pearson and colleagues (e.g., Boling, 2004; Hughes, Packard, & Pearson, 2000) investigates the use of web-based video as a resource in literacy methods courses. Building on the work of Baker (2005), Baker & Wedman (2000), and Risko, Peter, & McAllister (1996), this study furthers our understanding of how web-based video cases can be used to prepare literacy teachers. This inquiry is couched within the larger CTELL project (Teale, Leu, Labbo, & Kinzer, 2002; Kinzer, Cammack, Labbo, Teale, & Sanny, 2006) and focuses on reports and written reflections from 21 pre-service teachers who used web-based video cases in their literacy methods courses. The research questions for this inquiry were as follows:

1. In what ways do the pre-service teachers' interview reports and written reflections add to our understanding of their literacy methods course experience and web-based case use in it?
2. What course changes, interactions, conceptions, and contexts influenced pre-service teachers' case use?

3. What insights about web-based case use can literacy researchers and professors gain from pre-service teachers' reports?

### *CONTEXT*

Case Technologies to Enhance Literacy Learning (CTELL) has studied the ways in which the use of web-based video cases of K–3 classrooms in pre-service reading methods courses can (a) enhance pre-service teacher candidates' knowledge of best practices for teaching reading, (b) result in the implementation of these practices in the candidates' classrooms when they become teachers, and (c) foster teachers who teach in ways that positively and significantly affect children's reading achievement (Teale, Leu, Labbo, & Kinzer, 2002). The work has been conducted at a variety of research sites around the country – Chicago, New York City, various locations in Connecticut, Georgia, Tennessee, and Texas – and contributes to answering a key question posed by the Rand Reading Study Group:

What is the relative power of various instructional delivery systems (e.g., field-based experiences, video-based cases, demonstration teaching, micro-teaching) for helping teachers acquire the knowledge and skills they need to successfully teach comprehension to students of different ages and in different contexts? (Snow, 2002, p. 51).

The CTELL project employed random-access video as part of case design, allowing teacher education students to revisit a scene to analyze what is occurring from multiple perspectives and hence promote knowledge about classroom complexity. Random access also allows a pre-service instructor to configure a class into groups with multiple assignments – perhaps various groups or individuals focusing on a particular

student, on the teacher, on the instructional materials and procedures being used, and so forth – and to revisit a single piece of video to look at each of these items as they arise in class discussions. By looking repeatedly at a video segment from different perspectives and for different purposes, one is left with a deeper understanding of the interaction of factors that are involved in the respective instructional situation.

In CTELL, case content is taken from authentic classrooms with enough data provided in the case so that learners can analyze and compare classroom cases to enhance their understanding of instructional decisions and to foster the ability to suggest alternatives. In case-based instruction, analysis and reflection are critical, and cases provide learners with opportunities to revisit the data and decisions in the case, along with the chance to consider alternative solutions. Revisiting case content provides a sustained and recursive learning environment; reflection occurs in groups and individually as part of case analysis.

Our web-based video cases are comprised of an interface and the case-based content. The interface includes tool functions that facilitate reflection, provide for constructivist exploration of the case environment, and allow for socio-constructivist communication with others. The interface also includes administrative functions so that a course instructor can leave messages and assignments for students, define areas that students should look at, and more. The tools include e-mail and chat room capabilities, help functions, and "bookmark" functions used to define segments of the video within a case that can be easily revisited and sent to others via e-mail. In a very real sense, the interface allows users to segment the video, revisit scenes within larger video segments, e-mail portions of video to peers for class discussion purposes, and create video

portfolios for reflection and assessment purposes. These interactive capabilities are what make the web-based video cases powerful. Without an interface that organizes the case components and allows for repeated interactive access, video could only be viewed in linear form.

The content elements of CTELL cases relate to facets of classroom instruction and decisionmaking and include school/community information (school demographics, interviews with teachers in the target school, parents, the school administrator, and literacy experts in the field), classroom-instructional aspects (the anchor segment, lesson plans, ancillary teaching segments, and teacher commentary), and student aspects of the case (three target children who are highlighted in each case, running records on these children, standardized test scores for all children in the class, and children's interviews and writing samples). In all, cases contain approximately 55 minutes of video and, as stated above, much additional material. Exploring the rich content of the cases through an anchored instruction procedure and using support tools such as the book-marking and portfolio functions provided through the interface allow students to understand the context in which instructional decisions are made and in which instructional procedures are implemented.

Anchored instruction (Cognition and Technology Group at Vanderbilt, 1997) and situated cognition (Brown, Collins & Duguid, 1989; Feiman-Nemser & Remillard, 1996) provide a context where all participants in the learning environment (teacher and students) experience a situation that becomes the springboard for future learning. Anchored instruction has been used successfully in elementary-grade mathematics and literacy classrooms (e.g. CTGV, 1997).

### ***THEORETICAL FRAMEWORK***

Borko and Putnam (1996) and Feiman-Nemser and Remillard (1996) cite the need to change teachers' beliefs about teaching and learning, and advocate doing so through constructivist perspectives and situated cognition. Borko and Putnam note the following factors as contributing to successful teacher learning:

1. Addressing teachers' [existing] knowledge and beliefs about teaching, learners, learning and subject matter;
2. Providing teachers with sustained opportunities to deepen and expand their knowledge of subject matter;
3. Treating teachers as learners in a manner consistent with the programs' vision of how teachers should treat students as learners;
4. Grounding teachers' learning and reflection in classroom practice; and
5. Offering ample time and support for reflection, collaboration and continued learning. (Borko & Putnam, 1996, pp. 700-701).

We believe that traditional methods used in teacher education are hard pressed to provide the experiences that address the items on Borko and Putnam's list. Traditional transmission methods operate from a different set of assumptions; most present learners with a set of procedural steps and their appropriate uses in a direct rather than a constructivist mode. Multimedia technologies that present cases of classroom practice offer especially promising opportunities. Through the delivery of visual and textual information on the Internet, students can share a common experience or an anchored

understanding that grounds further learning in a rich socio-constructivist environment.

Because the intersection of technology, literacy, and teacher education is a complex phenomenon, multiple theoretical perspectives were employed in data analysis. Four perspectives—Transformational, Transactional, Deictic, Critical—were applied so that the multiple and complementary aspects of pre-service teachers' interactions with web-based cases could be understood. The Transformational Perspective (e.g., Reinking, 1995; Reinking, McKenna, Labbo, & Kieffer, 1998) enabled examination of how case use changed the pre-service teachers' course experience, and the ways in which these changes affected their development as literacy teachers. A Transactional Perspective (Rosenblatt, 1978; Bruce & Hogan, 1998) recognized that technology changes its users but that users also can change the technology, sometimes employing it in ways its designers originally had not intended or thought of. This theoretical perspective suggested that it was important to examine the interactive purposes and practices that the pre-service teachers' brought to the cases in order to inquire as to whether their uses surpass or challenge the original intent. From a Deictic Perspective, technology was viewed as changing and converging with literacy (Leu, 2000; Leu & Kinzer, 2000). Thus, when studying the integration of technology in pre-service literacy methods courses, we would want to inquire how pre-service teachers' conceptualized the changing nature of literacy and its convergence with technology. The Critical Perspective conceptualized technology in pre-service teacher preparation as involving issues of access, equity, power, politics, and economics (Bromley & Apple, 1999; Kamil & Lane, 1998). Thus, it was important to understand how pre-service teachers were impacted by the availability of human and technological resources, and their learning environment. Applying these

varying theoretical stances provided a way of extending the theoretical conversation in pre-service literacy teacher education research to understand more fully the multiple realities and complexities related to web-based case technology as an instructional resource.

## **METHODOLOGY**

The overall CTELL project is structured as a quasi-experimental study, and we have designed within it a number of qualitative inquiries to help elucidate a variety of factors related to case use, a decision supported by preliminary analyses of case use (Sanny, 2003), which showed that understanding the use of complex cases like those developed for CTELL is possible only when reflective data such as interviews and journals are combined with statistical analyses. The present study is one of these inquiries. As we examined pre-service teachers' interviews and written reflections, it became clear that the use of the cases and thus their impact varied across users. Accordingly, we felt that an analysis of the patterns of case use as reported by pre-service teachers would provide critical information necessary to understand the impact of case use in literacy methods courses. Furthermore, we were interested in whether the pre-service teachers had similar or different reports as compared to the reports of their professors (Sanny & Teale, 2005), thus adding to our understanding of case impact.

### *Data Collection*

Data in the form of interviews and written reflections were collected over two years of case use. The pre-service teachers were interviewed twice per semester and completed written reflections once during the term in which they used the cases in their literacy methods courses. The 21 pre-service teachers who participated in this study were

students in literacy methods courses taught by seven professors around the Chicago area and were selected for this study because their professors had been randomly-selected participants in previous studies that examined the impact of case use on the teacher educators' curriculum and pedagogy. Because the researchers were familiar with the professors, the learning environments, and the methods courses, the pre-service students' interview responses and written reflections were examined from a vantage point that was mindful of previous lessons learned via case use.

The methodology utilized for previous professor studies (Sanny, 2005; Sanny & Teale, 2005) was also used for this study so that patterns revealed could be compared and contrasted to patterns indicated in prior studies, revealing similarities and differences between pre-service teachers' and professors' responses. The interview questions were designed to probe (1) how and when the cases were being used in the methods courses and (2) in what ways the pre-service teachers used the cases. The pre-service teachers were all asked the same questions that were on the interview protocols, and interviews typically lasted 15-20 minutes. (For complete interview protocols see Appendix.) Written reflections were completed in response to the following prompt: How are you learning about teaching reading and writing in your class so far this semester?

### *Data Analysis*

Interviews were transcribed verbatim and coded by visit and themes present within interview questions. Coders practiced identifying themes on samples of interview transcripts and written reflections; once they became consistent with theme identification on practice samples, they coded all sets of transcripts and reflections. Reliability checks on coding between two different coders showed a 90% level of consistency across the

various themes. A content analysis (Krippendorff, 1980; Weber, 1990) of the themes was conducted to determine what was reported and how often it was reported. The frequency counts resulting from the content analysis were analyzed for patterns across the 21 pre-service teachers. Using a content and comparative analysis (Glaser & Strauss, 1967), the written reflections were analyzed and reliability checks on coding between two different coders showed a 95% level of consistency across the various themes. Similar to the interviews, the frequency counts resulting from the content analysis were analyzed for patterns across all 21 participants.

Triangulation of analyses of both interview and reflection data was facilitated through an examination of the interview patterns through the four theoretical lenses. For example, patterns in case use, transaction, conception, and context were closely examined through the lenses of Transformational, Transactional, Deictic, and Critical Theory.

### ***RESULTS AND IMPLICATIONS***

The findings are presented in four categories: 1) Patterns in Case Use; 2) Patterns of Transaction; 3) Patterns in Conceptions about Literacy/Technology Convergence; and 4) Issues of Equity and Access. This section is organized in two levels: First, the findings are presented, and then each category of findings is followed by a discussion of the implications that can be drawn for literacy professors, researchers, and literacy teacher preparation programs. The authors have decided to present results and implications within the same section so that findings can be directly tied into lessons learned from pre-service teachers. The research questions are explicitly addressed and results are summed up in the discussion summary that follows this section.

#### *Patterns in Case Use*

Pre-service teachers reported that it was essential for the professors to connect the cases directly to course curriculum. When cases were intimately tied to course content and were used in activities that were meaningful, pre-service teachers were able to view them and engage them in ways that allowed them to make connections to theory, research, and practice. Professors needed to explain why cases were being used and how they would be helpful to pre-service teachers as they entered the field, and they needed to scaffold the viewing of the cases so that pre-service teachers could focus on methods, approaches, styles, and techniques employed by the K-3 teachers within the web-based video cases.

Pre-service teachers reported that case use required more time for completion of assignments because activities required viewing components of the cases, then reflecting on what was viewed, and then infusing course readings and discussions in a manner that was beneficial for them as developing literacy teachers. They discussed the importance of knowing what the different components of the cases entailed and how these components fit together to help them understand the larger picture of teaching. For example, when using a first-grade case, it was helpful if the professor viewed the anchor segment with pre-service teachers and then facilitated a focused discussion on what they had viewed. Next, viewing writing samples and reading assessments for each of the three target students within the case helped pre-service teachers understand the continuum of literacy abilities that may exist in a first-grade classroom. Professors who then went on to show segments related to the parents of target students, the teachers they had in kindergarten, and the teachers they would have in second grade increased pre-service teachers' awareness and understanding of how children develop differentially and how

adults play a significant role in that development. Professors who continued to provide pre-service teachers with scaffolded and integrated instruction with the cases impacted the pre-service teachers in positive and powerful ways. For example, one pre-service teacher explained, “We talk about what we viewed and observed in the cases and then we talked about ways that we could actually use the information in them as future teachers.”

Pre-service teachers reported that their professor’s attitude toward case use, time spent planning, and implementation of case use directly impacted how much effort they themselves put forth in understanding teaching and learning via the cases. The more familiar pre-service teachers became with the cases, the more selective they became about which case components were most beneficial to them in understanding what a literacy teacher does and why. Pre-service teachers overwhelmingly reported that viewing the cases and completing activities that connected them to readings, lectures, and field experiences helped them visualize the complexity involved in teaching literacy much more than if the cases had not been used. One pre-service teacher shared, “The cases were helpful as a whole, just showing me exactly what we’re doing, how we’re doing it, giving ideas on how I could use them in the future.”

Even though they reported having to put much more time and effort into course assignments due to case use, they repeatedly informed us that it was worth it because they had an understanding of teaching and learning that they would not otherwise have gained from print-based media alone. Another pre-service student remarked, “I believe the cases are providing another concrete source of information to reinforce the information we are learning in our methods classes. From these cases and the class, I am more comfortable in realizing that I am not going to have all the answers right away.”

Implications for literacy methods courses include re-thinking course purposes, organization, learning experiences, and evaluation. Use of the cases impacts what is taught and how it is taught, an important consideration when planning for case use. Using the web-based cases poses a challenge for professors who plan case use as an add-on, as well as those who re-construct their courses so that case use becomes integral in instruction. Overcoming the integration challenge requires time to organize and plan, access to cases by both instructors and students, and familiarity with navigating the interface and case content. The depth and power of integration and the thoughtfulness behind case use directly impact learning experiences of pre-service students enrolled in the literacy course.

The professors who use cases will spend a great deal of the first term experimenting with case use, a value-added investment that pays off as the cases are used in future terms. They develop an understanding that case use impacts the organization of their courses from as little as adding time for viewing cases to as much as influencing how they plan and organize on-campus and off-campus assignments and the degree to which they encourage independent student use of the cases. The implication here is that knowledge and experience gained from first-time case use facilitates future changes in course organization and learning experiences and, as the cases continue to be used, instructors become increasingly confident and creative with case integration in their courses. The activities planned in the first term become substantial course projects integrating lectures, field experiences, web-based cases, research, and theory. The effort put into changes in organization and learning experiences was evident in evaluation or assessment of student work. Several professors used the portfolio function within the

cases to assess their students while others used a combination of assessment approaches, demonstrating that as professors develop coherence between course curriculum and instruction, they utilize assessments that are holistic and authentic. It is significant to note that issues of student access to the cases must be taken into account when assessing or evaluating pre-service teachers. Successful case integration implies that all students within the course are able to access the cases as they need.

The implication for literacy teacher preparation programs is that the use of cases within the program must be organized and coherent. The CTELL cases were designed for use in beginning literacy methods courses, and our results show that the courses they were used in were typically the first in a sequence of methods courses in literacy. We also found that most professors teach literacy methods for grades K-8. This is significant to note because the cases range only from K to Grade 3 and thus cannot provide the range that many professors may need, elucidating that case use requires a re-examination of the content and sequence of courses and that the rigor and quality of the pre-service program impacts case use. Programs where faculty discuss courses together and collaborate with each other provide professors with much needed support as they use the cases.

#### *Patterns of Transaction*

The pre-service teachers reported that their professors' use of the cases and attitudes toward the value of the cases directly impacted their own transaction with them. For example, professors who thoughtfully integrated the cases into their curriculum and pedagogy and modified their instruction to allow the cases to fit meaningfully into their course had pre-service students who transacted with the cases in a positive manner compared to those who simply added the cases on to what they were already doing. Pre-

service teachers reported that the enthusiasm their professors shared with them about the dynamic capabilities the cases brought to their own instruction generated an enthusiastic response from pre-service teachers. Professors modeling the use of instructional technology and positive behaviors even when technology glitches arose encouraged pre-service teachers to use web-based cases on their own time to gain insight from them about literacy instruction and use of instructional technology. Increased opportunities provided by professors for pre-service teachers to use the cases outside of the university and in varying ways fostered a sense of ownership of the cases within the pre-service students. They shared the cases with their friends who were not enrolled in courses that used the web-based cases and took part in discussion about literacy teaching outside of class time. For example, one pre-service teacher explained, “Well they’re really helpful. They were great to view because you hear and see how things work. The case teachers model techniques and it takes a lot of our anxiety away.”

Pre-service teachers reported that their positive transaction with the cases increased with more familiarity and increased case use. They also explained that they were more relaxed in their transaction with the cases when they had time to explore them without a grade tied to each time they used the cases. In other words, professors who gave pre-service teachers time to become familiar with the cases without the pressure of a grade provided pre-service teachers with opportunity to construct meaning without stress. According to pre-service students, viewing without having to always produce a product allowed them to “play around” with the cases first and then use them in assignments leading to more depth in class discussions and written work. One pre-service student explained, “I am also learning teaching strategies through group work, as we interpret

information about teaching methods and explain them to the class and learn to evaluate different teaching styles by watching the cases and through my field experiences.”

An implication for individual professors is that making web-based video cases a part of one’s pre-service literacy methods course is not something that comes easily to every teacher educator. Individual professors require varying degrees of preparation in the effective use and integration of web-based video cases. Professors need to develop familiarity with navigating the interface and the content within each case. The CTELL project attempted to address this issue by having participants attend a summer institute where they were introduced to the cases and the theory behind the cases, and during which they explored a variety of ways to use the cases in literacy methods instruction. During case use a manual assisted the professors in accessing and maneuvering through the interface, a necessity for those who had limited experience with using web-based technology in instruction.

Additionally, they were placed on a listserv where they could share their experiences with each other regardless of where in the country they were located. The listserv provided a common forum to exchange ideas, voice concerns, and plan for research and teaching (Labbo, Leu, Kinzer, Teale, Cammack, Kara-Soteriou, & Sanny, 2003). Preparation such as the CTELL institute and a common space such as the listserv were necessary for professors to implement case use. The implication here is that preparation and continued professional development are needed for effective web-based case use in literacy methods courses. It is apparent that powerful and transformative case use occurs on a continuum and is impacted by the professors' envisionments of how

the cases will benefit their course and their students. Preparation and professional development strongly influence their vision for case use.

*Patterns in Conceptions about Literacy/Technology Convergence*

The pre-service teachers reported viewing the cases as instructional technology, a web-based tool to help them with their learning. The 21 pre-service teachers varyingly used all available case parts and the high-tech functions within the cases such as the bookmarking function for creating video clips from the cases to email to their peers or to post clips to a discussion board in order to connect to specific lecture topics and grade level foci. Interestingly, the pre-service teachers used this "cutting-edge" technology but did not report changes in their ideas related to the intersection of technology and literacy. Furthermore, they used the cases to understand conventional or traditional literacies but did not report using the cases to understand new literacies. Even more interesting is that there is no report of pre-service students teaching their professors about new literacies through their use of the web-based video cases.

We find noteworthy that although the participants were using a technology that provided dynamic instructional capabilities not previously possible, pre-service teachers did not report on changing their conceptions of literacy and technology. This pattern may be present because their professors used the cases to teach about conventional literacies and did not engage the pre-service teachers in discussions of new literacies. Another reason we believe this pattern may have been so prominent is because the cases that were used during this time did not include new literacies and illustrated the use of instructional technology to develop traditional literacies in K-3 students. Because of this emphasis within the cases and from their professors, pre-service teachers may not have had the

opportunity to engage them through a new literacies perspective. During this study there were only four cases available, and all four were focused on using technology to teach traditional literacy. Now there are 11 cases available, and several of them include a new literacies perspective. It would be interesting to study how the pre-service teachers' reports would vary with the use of the newer cases.

The pre-service teachers' reports revealed that their professors were focused on developing traditional or conventional literacies, implying that professional development needs to be provided so that literacy professors can conceptualize the deictic nature of literacy and technology and how the emergence of new literacies is impacting teacher preparation. In particular, literacy professors need to be at the forefront of understanding changes resulting from technology use so that they can prepare high quality pre-service teachers who use technologies effectively in instruction (Leu, 2000).

#### *Issues of Equity and Access*

The most frequently reported issues of equity and access by students were related to the availability of technology – for instance, high-speed connection – as well as to problems such as slow download, garbled sound, freezing interface, lack of required software or bandwidth, and lab/class technology set-up. The second most frequently reported issues were those related to access to the cases by professors and pre-service teachers within the university and off campus. Personal and institutional contexts and resources impacted case use so that in some universities on-campus case access was possible only during class time in a lab setting while in other universities pre-service students had unlimited access to wireless laptops in wireless classrooms as well as access at home. On-campus resources also ranged from limited human and technological

resources to well-equipped labs with staff available to answer questions and help with case access. This access to the cases directly impacted how often professors and pre-service teachers were able to use them. Off-campus access ranged from pre-service teachers and professors with no Internet access to students and professors with unlimited high-speed connections. Access to the cases influenced the activities professors assigned to their students as well as the length, depth, and focus of course assignments.

The equity-related issue that most clearly stood out was the continuum of professor quality in thoughtfulness of case use. For instance, pre-service teachers' reports revealed that the professors in this study ranged from those who had very little commitment to changing their instruction to those who had a strong desire to improve their pedagogy and the learning experiences of their pre-service teachers. Professors who wanted to positively transform their instruction used the cases to extend certain elements within their course and added other dimensions to their courses that were not there before, in contrast to those who used the cases only as examples of what they were already teaching.

Depth of case use by professors was impacted by background experiences, access and familiarity with instructional technology, and student access to the cases (Sanny & Teale, 2005). Hence, the depth of case use directly impacted the learning experiences of the pre-service students. For example, while some students made deep connections between theory, practice, lectures, and clinical/field experiences both on and off campus, other students viewed and discussed the cases once in a while during limited class time. Equity and access issues were reported frequently and need to be critically considered if web-based video cases are going to be used in positive transformative ways. The

findings indicate that the complexity of integrating web-based technology into literacy teacher preparation is multi-faceted, including factors related to individual professors and their students, their institutions, and the larger context of teacher preparation for improving literacy achievement in schools. The findings further elucidate that the decision to use cases in literacy teacher preparation has implications not only for the individual professors who use them but also at the program and department levels.

### ***DISCUSSION SUMMARY***

The response to the first research question (In what ways do the pre-service teachers' interview reports and written reflections add to our understanding of their literacy methods course experience and web-based case use in it?) may be summed up as follows: Web-based video case use provides pre-service teachers with a course experience that they otherwise would not have. This anchored or common experience enhances conceptual understanding of the complexities involved in teaching literacy to young children. Pre-service teachers come to understand that good teaching requires problem solving, decision-making, flexibility, and organization, along with knowledge about students, parents, administrators, and school community. They begin to comprehend the breadth of the literacy curriculum, its interrelatedness to content areas as well as technology, the importance of strategies instruction, and the need for multi-faceted assessment. In sum, the web-based video cases afford pre-service teachers the opportunity to unpack the complex art and science of good literacy teaching.

The answer to the second research question (What course changes, interactions, conceptions, and contexts influenced pre-service teachers' case use?) may be summarized as follows: Professors who integrate web-based video cases in their course topics,

assignments, lectures, discussion, and field experiences have powerful impact on the development of pre-service teachers. This impact is even more profound when pre-service teachers have access to the cases on their own and focused access to the cases during classes. Professors who thoughtfully design course experiences, conceptualize the intense impact of anchored and case-based instruction, have positive attitudes toward improving their own teaching practice, and create contexts for learning via virtual and real environments provide their pre-service teachers with experiences that are not otherwise possible.

Conclusions about the third research question (What insights about web-based case use can literacy researchers and professors gain from pre-service teachers' reports?) may be recapped as follows: Pre-service teachers' reports help literacy professors and researchers understand that pre-service teachers require diverse ways of experiencing their courses in teacher preparation. Traditional methods of delivery are not enough, hence, via anchored instruction and web-based case use, pre-service teachers can be exposed to various teaching styles and encouraged to critique these to form their own style. Spurred on by the present investigation, some future research directions involve examining the impact of web-based video cases containing new literacies on the conceptual development of professors and pre-service teachers. It would be valuable to study how professors and pre-service teachers develop conceptions of the convergence and intersection of literacy and technology in this digital age. Some questions worth asking include these: Are we preparing literacy teachers for the new literacies their young charges will come to school with? Do we as professors and researchers understand the changing nature of literacy and the importance of using technology in our own

instruction? Are we using appropriate methods and strategies to prepare teachers to teach children growing up in a digital age?

### *CONCLUSION*

Utilizing multiple theoretical perspectives in data analysis helped us understand the complexities, realities, and possibilities involved in web-based case use in literacy methods courses. The pre-service teachers' interview reports and written reflections were imperative to help us understand what happened as literacy professors used the web-based cases in their courses. The four theoretical perspectives (Transformation, Transactional, Deictic, Critical) illuminated the personal, professional, and institutional factors associated with patterns of case use, transactions, conceptions, and issues of equity. The insight gained through this inquiry is important for professors who are currently using the cases and those who are planning to use them in the future. Issues of access and equity in professor quality, program rigor, and human and technological resources are fundamental to consider as professors employ the web-based cases to improve literacy teacher preparation.

An important limitation of this study was the quantity of data collected from pre-service teachers. The researchers agree that both reflection and interview data should have been collected at least three times during the semester so that developmental patterns could have been better observed. Another limitation of this study was the quality of wording used in the interview questions and reflection prompts. Looking back, the researchers suggest using questions and prompts that directly ask about case use and its impact on pre-service learning.

As mentioned earlier, teacher education is currently a topic receiving a great deal of attention, creating the necessity for research that highlights the important efforts teacher educators and researchers are making to prepare high-quality teachers; the CTELL project and the present inquiry illustrate such work. It is our hope that research examining experiences of pre-service teachers and their professors will provide insight into improving the preparation of pre-service literacy teachers and in turn positively impact the literacy achievement of K-8 students.

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## *APPENDIX*

### *Protocol for Interview #1*

1. Please tell me a bit about yourself and your goals as a future teacher.
2. I'd like you to visualize a classroom and describe that classroom for me. Another way of saying this is that I'd like to have you give me your conceptualization of a classroom and classroom environment.
  - a. Probe: What will influence your work and decisions as a teacher of reading?
  - b. Probe: When you answered this question, what was the background that you drew on for your ideas and conceptions?
3. Please describe this class as compared to other classes that you are taking.
  - a. Probe: Does this class differ in its expectations for how you learn? If so, in what way(s)?
  - b. Probe: Do the activities and assignments differ from other classes? If so, in what way(s)?
4. Please tell me which case or cases you've used this semester.
  - a. Probe: Are you focusing on one case more than the others, to this point in your class? If so, which one?
5. Just a quick yes or no will do for the following. Have you used (either in or out of class) any of the following items from one or more of the cases?
  - Anchor segment
  - Teacher interview
  - Principal interview
  - Parent interview
  - Child's interview
  - Expert/discussant interview
  - Ancillary lessons (classroom video other than the anchor segment)
  - Children's work
  - Children's formal test scores
  - Children's informal assessments (running records)
6. Please talk about how you've used the cases so far this semester.
  - a. Probe: Could you tell me if (and how) you have used the cases during your regularly scheduled class period?
  - b. Probe: Could you tell me if (and how) you have used the cases outside of regularly scheduled class time?

- c. Probe: About what percentage of time have the cases have been used during your regularly scheduled class period?
7. What would you say to instructors considering the use of the cases for the first time?
  - a. Probe: How do you think an instructor approaches the class differently when using cases?
8. What are your general impressions of the cases so far, as you've used them this semester?
  - a. Probe: Could you tell me some details about <insert from their general response>?
  - b. Probe: How is this class different, when cases are being used, from other classes that don't use cases (it's ok to say there's no difference)?
9. Have you had any conversations about the cases with other students in the class, about how they feel about the cases or about how the cases are being used?
  - a. Probe: What are some of these comments?
  - b. Probe: How do you think the class as a whole is reacting to the cases; what do the students think about the cases?
10. Have you had any major difficulties with the cases so far this semester?
  - a. Probe: Have you had any difficulties with the interface; if so, how have you tried to work around them?
  - b. Probe: Have you had any difficulties with hardware; if so, how have you tried to work around them?
  - c. Probe: Have you had any difficulties with students accessing the cases; if so, how have you tried to work around them?
11. Where are you using the cases most often: in your designated classroom, a computer lab, your home or dorm room, or other area?
  - a. Probe: How has this affected your use of the cases?
12. Has the instructor integrated the cases into the class? If so, how does this occur; in what way(s)?
  - a. Probe: Do students refer to the cases during class discussions? Any examples?
13. How do you expect to use the cases during the rest of the semester?
  - a. Probe: Is there anything that you expect to change, with regard to the use of the cases in your class, as the semester goes on? <Ask for specifics as needed>
14. On a scale of 1 to 5, with 5 being the best possible, how would you rate the cases so far?
15. On a scale of 1 to 5, with 5 being easiest, how easy have the cases been to use so far?

1. I'd like you to visualize your first classroom teaching position. Can you describe this classroom and tell me what you will include in your reading program to ensure that students receive effective reading instruction?
  - a. Probe: How do you define effective reading instruction? What things are important for teachers to do to ensure that students learn to read.
  - b. Probe: When you answered this question, what was the background that you drew on for your ideas and conceptions?
  
2. Please describe this class as compared to other classes that you are taking.
  - a. Probe: Does this class differ in its expectations for how you learn? If so, in what way(s)?
  - b. Probe: Do the activities and assignments differ from other classes? If so, in what way(s)?
  
3. Please tell me which case or cases you've used this semester
  - a. Probe: Are you focusing on one case more than the others, to this point in your class? If so, which one?
  
4. Just a quick yes or no, will do for the following. Have you used (either in or out of class) any of the following items from one or more of the cases?
  - Anchor segment
  - Teacher interview
  - Principal interview
  - Parent interview
  - Child's interview
  - Expert/discussant interview
  - Ancillary lessons (classroom video other than the anchor segment)
  - Children's work
  - Children's formal test scores
  - Children's informal assessments (running records)
  - a. If the interviewee states s/he has used some of these, pick **two** of the items that have been identified and ask: Could you tell me a bit more about how you've used <insert item here, e.g., the principal's interview>
  
5. Please talk about how you've used the cases so far this semester.
  - a. Probe: Could you tell me if (and how) **you** have used the cases during your regularly scheduled class period?
  - b. Probe: Could you tell me if (and how) **you** have used the cases outside of regularly scheduled class time?
  - c. Probe: About what percentage of time have the cases have been used during your regularly scheduled class period?

6. What are your general impressions of the cases so far, as you've used them this semester?
  - a. Probe: Could you tell me some details about <insert from their general response>?
  - b. Probe: How is this class different, when cases are being used, from other classes that don't use cases (it's ok to say there's no difference)?
7. Have you had any conversations about the cases with other students in the class, about how they feel about the cases or about how the cases are being used?
  - a. Probe: What are some of these comments?
  - b. Probe: How do you think the class as a whole is reacting to the cases; what do the students think about the cases?
8. Have you had any major difficulties with the cases so far this semester?
  - a. Probe: Have you had any difficulties with the interface; if so, how have you tried to work around them?
  - b. Probe: Have you had any difficulties with hardware; if so, how have you tried to work around them?
  - c. Probe: Have you had any difficulties with students accessing the cases; if so, how have you tried to work around them?
9. Where are you using the cases most often: in your designated classroom, a computer lab, your home or dorm room, or other area?
  - a. Probe: How has this affected your use of the cases?
10. Has the instructor integrated the cases into the class? If so, how does this occur; in what way(s)?
  - a. Probe: Do students refer to the cases during class discussions? Any examples?
  - b. Probe: What activities have you done with the cases?
11. On a scale of 1 to 5, with 5 being the best possible, how effective were the cases in helping you to become a teacher of reading? Can you tell us why?
12. On a scale of 1 to 5, with 5 being easiest, how easy have the cases been to use so far? Can you tell us why?
13. How could the instructor use the cases more effectively in the future?
  - a. Probe: How could the cases be used more effectively to help you learn?
  - b. Probe: Should the cases be used in future methods classes?
14. What was most helpful about the class in preparing you to teach reading effectively?
15. What was least helpful about the class in preparing you to teach reading effectively?

16. What was most helpful about the cases in preparing you to teach reading effectively?
17. What was least helpful about the cases in preparing you to teach reading effectively?

Reflection Prompt: How are you learning about teaching reading and writing in your class so far this semester?