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Overcoming Deficit Thinking Toward English Language Learners:

Technological Possibilities

By Ramona Cutri and Cary Johnson

Abstract

The urgent need to prepare more mainstream classroom teachers to work with English language learners (ELLs) prompts innovative approaches to teacher preparation. One such innovation, use of technology, can prepare a large number of teachers efficiently. Yet quantity does not ensure quality. Focusing only on teaching strategies may diminish attention to developing positive dispositions toward ELLs. Field participation has been shown to be prospective teachers' most influential experience in developing attitudes toward ELLs, but neither early classroom experiences nor home visits with ELLs are always logistically possible. This article explores possibilities for pre-service teachers coming to know and developing positive dispositions toward an ELL and her family through a multimedia technological intervention. Using design based research (DBR) methodology and narrative inquiry, this article reports qualitative findings that suggest the positive influence of using digital stories in teacher education programs.

Overcoming Deficit Thinking Toward English Language Learners:

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Field experience has been shown to significantly impact pre-service teachers' attitudes toward ELLs (Smith, 2004). Classroom participation and home visits can elicit strong cognitive and emotional engagement with ELLs and with issues related to their education. But logistical, legal, or other barriers may make direct field experiences with ELLs impossible. Can technology be used as a proxy for these experiences? This study investigates the use of a multimedia technological intervention to elicit cognitive and emotional engagement with an ELL and to encourage prospective teachers to express their attitudes toward such students and their families.

Literature Review

This literature review first succinctly describes what ELL certification of new teachers generally includes. Second, attention is given to literature documenting the importance of teachers' attitudes and dispositions toward ELLs and other multicultural students. Third, the term *multimedia technological intervention* is operationalized as used in this study, and then issues related to technology and its use in teacher education, particularly the preparation of teachers for ELLs, is discussed. Finally, a few attitudes that are prevalent among educators are defined in preparation for exploring the data.

Teachers and ELLs

Training Requirements

ELL certification requirements for new teachers in kindergarten through high school vary significantly by state. Each state is responsible for crafting its own certification policies. Only four states require ELL certification for all new teachers, while fifteen states do not require any training or expertise in working with ELLs (NCELA, 2009). States generally post documents describing the training and expertise teachers should have in order to receive ELL certification. Many such documents include phrases referring to the following: (a) effective ELL instructional strategies, (b) knowledge of second language acquisition (SLA), (c) accommodations for ELLs,

and (d) appreciation for language as a component of diversity. Aside from the latter disposition, most of the training and expertise states require for ELL certification concentrate on skills and strategies for teaching ELLs. However, much of the research literature suggests that mastering teaching strategies and understanding second language acquisition are not enough to prepare a teacher to maintain high academic expectations of ELLs and morally commit themselves to these students' school success.

Educator Detachment

The majority of teachers in the United States continue to come from white, middle class, English-speaking, Christian backgrounds (Ladson-Billings, 2005; Slater, 2008). The demographics of teachers contrast sharply with the demographics of today's students. ELLs are the fastest growing group of public school students, and this group is expected to keep growing with increased density across the U.S. (NCELA, 2009).

Goodlad (1984) describes scenes of "rather well-intentioned teachers going about their business somewhat detached from and not quite connecting with the 'other lives' of their students" (p. 80). Goodlad is not specifically referring to teachers working with ELLs; but considering the cultural mismatch of the majority of teachers and teacher candidates with the students of today, Goodlad's assessments of detachment, or at least disorientation, and failure to connect do apply. The operative phrase in Goodlad's statement is "rather well-intentioned teachers"—he is not describing teachers who do not care or who consider themselves racist. There are cultural factors that can and do tend to distance well-intentioned teachers from their ELL students, factors that transcend the realms of effective ELL instructional practices and SLA knowledge. Teachers' attitudes toward ELLs and their families must be thoroughly explored.

Teachers' attitudes toward ELLs and their families reflect dominant societal trends, often based on misinformed assumptions (Walker, Shafer, & Iiams, 2004). ELL students in the U.S. come from various language backgrounds and countries of origin, including being born in the U.S. While many people tend to think of ELL students as living illegally in the U.S. and taking undue advantage of the country's limited educational resources, most PK-12 ELL students are legal citizens: 80%-93% of them (Fix & McHugh, 2008; Garcia, 2008). Another common misassumption about ELLs and their families is that they cling to their native languages and are slow to acquire English. Tse (2001) documents the inaccuracy of this assumption, highlights the

role of the media in perpetuating such inaccurate public perceptions, and explains how such stereotypes translate into policy decisions.

Images and Identities

Harklau (2000) asserts that prevalent images of ELLs are formed in the educational institutions in which they participate. Harklau calls for exploration of how "schools categorize and position students with identities; how classroom curricula, social organization, and interactions serve to reinforce or contest these categories; and how students accommodate, resist, and counter identities imposed on them" (p. 37). Obviously teachers' attitudes toward ELLs significantly influence classroom curriculum, social organization, and interactions in the educational institutions in which ELLs form their learner identities. Thus studies that seek to better understand how to positively impact teachers' attitudes toward ELLs are crucial.

Teachers' attitudes not only impact identities formed by students, but also influence teachers' academic expectations of students and their teaching strategies implemented in the classroom (Nieto, 1995; Terrill & Mark, 2000; Tse, 2001). Yet so often teachers' attitudes are not addressed in teacher education programs or in professional development efforts. This article calls for teacher education programs to stop overlooking this critical piece in preparing teachers to work effectively with ELLs.

Gay and Kirkland (2003) assert,

> [T]eachers knowing who they are as people, understanding the contexts in which they teach, and questioning their knowledge and assumptions are as important as the mastery of techniques for instructional effectiveness. Critical racial and cultural consciousness should be coupled with self-reflection in both preservice teacher education and in-service staff development. (pp.181-182)

Delpit (2006) reinforces Gay and Kirkland's assertion when she criticizes teacher education and professional development efforts for failing in these crucial areas:

> Nowhere do we foster inquiry into who our students really are or encourage teachers to develop links to the often rich home lives of students, yet teachers cannot hope to begin to understand who sits before them unless they can connect with the families and communities from which their students come. To do that, it is vital that teachers and teacher educators explore their own beliefs and attitudes about non-white and non-middle-class people. (p. 179)

The multimedia technological intervention studied in this article presents prospective teachers with opportunities to display their knowledge of and assumptions about ELL students and their home lives. But the stumbling blocks involved in exploring one's attitudes and sources of detachment from those who are not like them can be formidable. Below, two possible explanations of the pattern of well intentioned teachers remaining detached and not quite connected with ELLs are explored.

Possible Sources of Detachment

One source of detachment between teachers and their ELL students may be that some teachers have a deficit or inferiority perception of the diverse learners they are expected to teach. Valencia (1997a) labels such a perception as *deficit thinking*, and then explains,

> [T]he deficit thinking paradigm, as a whole, posits that students who fail in school do so because of alleged internal deficiencies (such as cognitive and/or motivational limitations) or shortcomings linked to the youngster—such as familial deficits and dysfunctions…systemic factors (for example, school segregation; inequalities in school financing; curriculum differentiation) are held blameless in explaining why some students fail in school. (p. xi)

A belief in deficit theory allows well-intentioned teachers to avoid accepting full responsibility for ensuring access to knowledge for such students.

A second possible explanation of detachment between teachers and ELLs involves racism. *Passive racism* is a term used to describe the subtle and socially acceptable ways in which hurtful and discriminatory practices persist (Tatum, 1999). Teachers may exhibit passive racism by assuming that certain types of students will have certain types of behaviors, by doubting the academic ability of a student who does not speak English, or by commenting about certain types of parents not caring about education, etc. (Marx, 2006). Well intentioned teachers may harbor passive racism and have significant difficulty acknowledging it and recognizing how it influences their work with ELLs. Research shows a likelihood that teachers' positive attitudes toward ELLs in mainstream classrooms significantly deteriorate over time (Walker, Shafer, & Iiams, 2004, p. 132).

In this article, we argue that attention must be given to both attitudinal *and* pedagogical preparation of teachers to work with ELLs. The task of attending to both attitudinal and pedagogical training in preparing new teachers to work with ELLs can become even more

complicated with the use of technology. Technology use in teacher preparation and professional development is increasing according to the latest accounts (Sawchuk, 2009). Sawchuk (2009) describes the common scenario:

> So imagine a teacher who finishes grading some papers, puts the children to bed, and at 9:30 p.m. logs on to an online module to learn new practices for differentiating instruction for his or her English-language-learner students. That scene is swiftly becoming a reality, as more and more teachers tune out the distractions, turn on their PCs, and log on to Web-based training programs at times that suit their own schedules. (p. 1)

If such isolated learning is merely drill and kill, it will not be effective for tired individuals alone at the end of the day who are learning to differentiate instruction for ELLs but unable to work directly with them with guidance from more expert others. Barron (2006) asserts that technology use is distributed among multiple settings that can be labeled as learning ecologies. Drawing on sociocultural and activity theory, Barron's (2006) learning ecology framework highlights the need for carefully structured interactive and reflective opportunities as opposed to technology used to merely deliver information.

Use of Technology

Defining the term *technology* is beyond the focus of this article, but a working understanding of how the term is used in this study should be developed. In this study, video clips from a multimedia CD-ROM were used as the technological intervention. Guan (2009) explains that multimedia presentations consist of "learning material [that] is often presented with text, audio, video, and static pictures, whereby [the] same information is sometimes repeatedly presented by different media" (p. 62).

Technology Enhanced Field Experiences

Hixon and So (2009), in their literature review titled "Technology's Role in Field Experiences for Preservice Teacher Training," identify three types of technology-enhanced field experiences. Type I experiences involve placement in real classrooms where teacher candidates instruct and/or observe real students while using technology tools to facilitate supervision, reflection, and/or communication. Type II experiences are vicarious, as teacher candidates remotely observe teachers and students in real classrooms either synchronously through video-conferencing technology or non-real-time through pre-recorded video cases available on CD-

ROMs or via the Internet. Type III experiences utilize simulated classrooms, teachers, and students, as teacher candidates observe virtual classrooms. Hixon and So (2009) also acknowledge that different types of technology are commonly used together at different points in a teacher preparation program. The technological intervention used in this study was a Type II level of technology-enhanced field experience.

Hixon and So (2009) identify "promoting reflectivity" as one of the major benefits of Type II technology use (p. 297). In summarizing existing research, they conclude that, "video-supported reflection, compared to memory-based reflection, [has] enabled teacher candidates to shift their focus of reflection from superficial features of classroom management to pedagogical issues" (p. 298). The data presented in the Findings section of this article depict such a holistic consideration of issues in a teacher candidate's life beyond superficial features.

The focus of this study is not the technology itself, but rather "how that technology can be used to bring out the very best in how teachers teach and how students learn" (Robin, 2008, p. 221). The digital stories presented in the video clips are what Robin (2008) describes as "an instructional tool [in which] teachers have the option of showing previously-created digital stories to their students to introduce content and capture students' attention when presenting new ideas" (p. 222). The digital stories used in this study incorporate the seven elements of a digital story that Robin identifies (2008, p. 223):

1. Point of view: [T]he main point of the story and [the author's] perspective on it.
2. A dramatic question: A key question that keeps the viewer's attention and will be answered by the end of the story.
3. Emotional content: Serious issues that come alive in a personal and powerful way and connect the story to the audience
4. The gift of the writer's voice: A way to personalize the story to help the audience understand the context
5. The power of the soundtrack: Music or other sounds that support and embellish the storyline
6. Economy: Just enough content to tell the story without overloading the viewer
7. Pacing: The rhythm of the story and how slowly or quickly it progresses

Emotional Connections

Specifically, the digital stories shown to the participants in this study sought to emphasize Element 3 of digital story telling: Experiences of an ELL and her mother were selected to elicit a "personal and powerful emotional" connection between study participants and the issues presented (Robin, 2008, p. 223). Such emotional connections can help bridge the oft-noted gap between merely learning ideas to be able to recite them and learning them at a level of personal engagement, retention, and future application (Lave & Wenger, 1991). Developing such connections is crucial in electronic learning environments in which students often encounter learning objects in isolation from professors, peers, and field experiences. Technological interventions must not be used merely for depositing information for recall. Emotional engagement with people and issues presented electronically can help students move to deeper levels of learning.

What we know about teacher education tells us that isolated non-emotional engagement with material and issues is not the most effective way that teachers learn either traditionally or technologically (Charalambos, Michalinos, & Chamberlain, 2004; Garet, Porter, Desimone, Birman, & Yoon, 2001). Benavides and Midobuche (2004) go so far as to ask,

> How is it possible to truly become a culturally responsive teacher (Villegas & Lucas, 2002), when we spend so little time in contact with and experiencing what makes other people different from ourselves? [Teacher candidates] who take language and culture courses online may be limiting their ability to understand ELLs, their families, and communities. (p. 51)

Technology offers the potential to bring multiple contexts and realities to university classrooms while avoiding the logistical complexities of bringing teacher candidates to home settings.

Potential Limitations

Predictably, technology enhanced/virtual field experiences have limitations. Hixon and So (2009) identify four of them: "(a) lack of interactions with teachers and students, (b) limited reality and complexity, (c) availability of relevant cases, and (d) technical problems" (p. 299). Benavides and Midobuche's (2004) more critical examination of the use of technology introduces a poignant concern with the question "How does respect come across on a computer screen?" (p. 52). This question calls attention to an essential characteristic of culturally responsive teachers: respecting ELLs' native culture, language, and home context and thus

striving to include these elements in the curriculum and structure of schooling (Gay, 2000). Respecting and valuing another's culture entails more than just gaining factual knowledge about that culture. Emotional engagement and judgment are inherent in these attitudes.

Use of technology to prepare increased numbers of mainstream teachers to work with ELLs must be guided by sound pedagogical practice that engages learners cognitively and emotionally with the issues. In concluding their review of technology's role in proxy field experiences, Hixon and So (2009) assert that, "pedagogical considerations are critical to the design and implementation of successful technology-integrated field experiences that meet intended goals" (p. 300). The theoretical construct of *technological pedagogical content knowledge* (TPCK) may guide technology use in preparing teachers (Mishra & Koehler, 2006). Mishra and Koehler (2006) explain that TPCK (or, more recently, TPACK) "emphasizes the connections, interactions, affordances, and constraints between and among content, pedagogy, and technology . . . [and] the complex interplay of these three bodies of knowledge" (p.1025). This holistic consideration of the use of technologies echoes Barron's (2006) learning ecology framework. The broad perspectives help to avoid an over emphasis on technological skills. Rather, TPCK promotes focus on the "knowledge of students' prior knowledge and related epistemology and knowledge of how technologies can be used to build on existing knowledge and to develop new epistemologies or strengthen old ones" (p. 1029).

Higher Order Thinking: TPCK

A study by Ochoa, Kelly, Stuart, and Rogers-Adkinson (2004) highlights the power of multimedia technology to strengthen emotional connections of teacher candidates with the ELL students portrayed in a multimedia case study. They argue that the emotional connections formed by these candidates are stronger than if they had just read a case study of the ELL student in print. As a result, they claim, the emotional connections formed by the teacher candidates for the ELL student increase the complexity of their thinking about the student's educational situation--the type of higher order thinking called for in TPCK. The researchers report that teacher candidates valued the open-ended possibilities of solutions presented by the multimedia components of the case study.

Bull (2002), referencing Halpin (1999), states,

> [T]he integration of technology across the teacher education curriculum provides [teacher candidates] with an explanatory and discovery oriented environment . . . the use of technology facilitates a problem-solving environment, a tenet of constructivist theory, with the goal to motivate students to seek information and solve problems. (p.3)

A problem-solving environment differs from a didactic approach in which teacher candidates are told how they *should* think about ELLs and their families. Coercion and appeals to political correctness are sometimes used in persuading teacher candidates to adopt positive attitudes and dispositions toward multicultural students, but these approaches can produce negative backlash against efforts to advocate for socially just treatment of all people (Barreto, 1997). Using technology to elicit both emotional and cognitive engagement with ELLs and their families seems to be more effective as it allows teachers to articulate their own opinions and seek new information.

Methods

The research question guiding this study was "How can a technological intervention elicit both cognitive and emotional engagement with English language learners and influence teacher candidates' attitudes toward them?" This research question clearly moves beyond an isolated examination of technology. The technological pedagogical content knowledge (TPCK) framework (Mishra & Koehler, 2006) focuses research on uses of technology on a complex situated form of knowledge. Our research question highlights ways technology can promote deeper engagement with issues and make "abstract or conceptual content more understandable" (Robin, 2008, p. 224). This article reports qualitative findings collected from prospective teachers' narrative responses generated while viewing digital stories from a multimedia technological intervention.

Participants

The study was conducted at a private university in the Rocky Mountain West in a state that does not require all new teachers to have training and expertise working with ELL students. Participants were 91 freshmen who had declared themselves as teaching majors when they first entered the university. They were participating in a program called Freshman Academy in which freshmen interested in similar majors engage in seminars and other activities designed to support

and guide them throughout their freshman year. Three Freshman Academy seminars participated separately in the study; each seminar included about 20-30 students, making a total of 91 participants.

Though these freshmen had declared that they intended to be teaching majors, they had not yet been accepted into the teacher education program. At this university the formal application process for the teacher education program typically occurs in the junior year. Students intending to apply to the program are allowed to take several prerequisite courses before formal program acceptance.

The 91 participants in the study were females from white, Christian backgrounds. This demographic information is important, as these characteristics match the majority of the teaching force nationwide and differ from the background of most ELLs. The students were asked to share their previous experiences of living abroad or interacting with ELLs. Most of them had had little to no experience with ELLs. However, 2 of the 91 participants were immigrants themselves. The majority of the students had interacted with foreign exchange students at their high school, had a number of friends (or acquaintances) who were immigrants, and/or had lived in communities with high percentages of immigrants. A few of the students had lived abroad, but had known this residence was temporary or had attended international schools with other expatriate students. The data suggest that most of the students, even with their varied previous experiences, had throughout their lives maintained a perspective of themselves as part of the majority culture. They had had very little experience and no formal training in working with ELLs or understanding their life experiences.

Technological Intervention

The technological intervention used in this study consisted of digital stories on an interactive CD Rom titled *A Video Ethnography of A Day in the Life of an English Language Learner*. These digital stories consisted of interviews with Vanessa Gomez (an ELL), her mother, her teacher, and administrators at her school. The interviews occurred both in Vanessa's home and in her school. The digital stories included in the technological intervention are titled "Student Identity" and "Family and Home Life"; together they are 7 minutes long. The video clip "Student Identity" has three subsections titled "Vanessa and Her Family," "Vanessa's Identity," and "Teacher Insight." The footage is primarily of Vanessa responding to a series of interview questions regarding her use of English and Spanish, her cultural identity, and her introduction of

her family. Her mother also appears in the video clip, expressing her impressions of Vanessa as a daughter and student. The video clip "Family and Home Life" has five subsections titled "Household Responsibilities," "Family Time Together," "Other Family and Support," "Family Situations," and "Lorena's Roles." The footage is primarily of Vanessa's mother, Lorena Gomez, but includes footage from Vanessa's teacher and an administrator at her school.

Procedures

The 91 prospective teachers participated in the study in the context of their Freshman Academy seminar. They experienced the technological intervention and produced their narrative reflections during a one-hour period. There were no follow-up data collection efforts after the original intervention. This type of "one-shot" intervention is typical in teacher education programs and in other settings where credit hours are in high demand and ELL certification is not required. Recognizing that these "one-shot" interventions are typical is not meant to imply that they are ideal; for logistical reasons they are common. If accepted into the teacher education program, the participants will be required to take a multicultural education course and have an opportunity to complete an optional ELL endorsement. But at this stage in their education, devoting one hour exclusively to ELL students and their home contexts as part of the freshman seminar on teaching was a logistical and curricular accomplishment.

Design based research (DBR) was the methodological approach used to conduct the study. DBR is used to examine learning in environments that are designed and systematically

changed by the researcher. Its goal is to use "the close study of a single learning environment, usually as it passes through multiple iterations and occurs in naturalistic contexts, to develop new theories, artifacts, and practices that can be generalized to other schools and classrooms" (Barab, 2006, p. 153). The single learning environment reported in this article was the freshmen seminar in which prospective teachers were watching the digital stories while simultaneously writing narrative responses.

Data Collection

The participants viewed the selected video clips of the ELL student and her mother from the CD-ROM. While viewing, they simultaneously wrote their spontaneous observations. In Iteration 1, the participants wrote their narrative responses on paper while viewing the video clips. The classroom where Iterations 2 and 3 of the study were conducted was a computer laboratory with an individual computer screen and keyboard for each participant. Prior to viewing the video clips, each participant logged on to an electronic survey tool that hosted the demographic information survey and the spaces for the participants to write their spontaneous narrative responses as they viewed the digital story video clips. The name of the electronic survey tool was *Qualtrics*. (Please see Appendix A for a copy of the data collection instrument.) As a tool for data collection, Qualtrics offers an array of qualitative and quantitative data analysis options.

Three iterations of this learning environment were designed and systematically changed by the researchers. In the first iteration, the students responded to the prompts "What strategies did Vanessa use to overcome adversity?" and "What strategies can I apply to my own life?" We found these prompts problematic because they focused on the problems or deficits in Vanessa's life. In the second and third iterations, the participants were asked to use their keyboard and screen to watch the video clips and simultaneously type their responses to the writing prompts "What surprised you most about what Vanessa and her family do and experience in their everyday life?" and "What other things do you notice Vanessa and her family doing in their everyday life?"

It was crucial in all iterations of the study that the participants record their observations spontaneously while they were watching the video clips. This arrangement lessened the chance that the participants would feel the need to edit their observations in order to please the researchers or themselves. They were specifically instructed not to worry about spelling or grammar, but rather to just focus on recording their spontaneous responses to the writing prompts while watching the video clips.

Data Analysis

The research question guiding this study explores the ways that technology can be used to promote deeper cognitive and emotional engagement with issues related to ELLs and their families. Since the research question inquires how technology can be used to make existing knowledge and assumptions transparent, the data analysis must be able to capture the epistemological and emotional nature of the data. Using prospective teachers' narratives as research data acknowledges the affective and cognitive dimensions of these participants as learners (Cutri, 2009; Mayes, Cutri, Rogers, & Montero, 2007; Schwarz, 2001). This acknowledgement is particularly appropriate in this study as it examines how a technological intervention can elicit prospective teachers' attitudes.

Spontaneous Narrative Writing

The spontaneous narratives written by the participants while viewing the digital stories serve as powerful field texts to examine how their knowledge and assumptions about ELLs emerge when viewing digital stories of an ELL. Analysis of these narratives highlights how the participants made meaning and gained new insights as their existing knowledge and assumptions about ELLs came into contact with the digital stories. Bruner (1990) asserts that narratives

belong to a specific time in an individual's life and have the potential to capture emotions. In this sense, he argues that narratives are not merely passive documents but are active and infused with inherent meaning communicated by the author of the narrative. Connelly and Clandinin (1994) assert that narrative writing is not simply telling one's story, but that it involves rethinking, analyzing, critiquing, and thus rewriting and retelling new stories that imagine other possibilities. The spontaneous narratives that the participants wrote not only reveal their existing knowledge and assumptions about ELLs and their families, but also represent the initial possibilities that they will gain new knowledge and expand their consideration of the realities of ELL students' lives.

Content and Textual Analysis

The narratives were coded using qualitative methodology. The data analysis consisted of two approaches: a content analysis and a textual analysis. Content analysis in a qualitative data analysis procedure entails counting the frequencies of particular words, phrases, or concepts (Miles & Huberman, 1994). For this study the content analysis, performed by the second author, involved identifying reoccurring phrases and concepts. The three most frequently reoccurring responses in the participants' narratives in the DBR Iteration 1 of the study were identified. Subsequently, the four most frequently reoccurring responses in the participants' narratives in the DBR Iterations 2 and 3 of the study were identified as well.

We also conducted a textual analysis of the narrative data to identify themes within and across the teacher candidates' narratives. The first author conducted this form of analysis. First, the frequently mentioned phrases and concepts identified in the content analysis were considered in relation to one another. This consideration revealed similarities among the high frequency phrases and concepts documented in the content analysis. The second step in the textual analysis was to further examine the high frequency phrases and concepts in the context of the participants' narratives. This data analysis step revealed two overarching themes under which the high frequency phrases and concepts could be considered. The third step in the textual analysis consisted of considering the two overarching themes in relation to the literature.

Validity Issues

Issues of validity were addressed by consistent attention given to the temporality, sociality, and place of the narrative reflections (Clandinin, Pushor, & Murray-Orr, 2007). Thus it was crucial while analyzing the data and writing up the findings to keep in mind that the

participants were freshman prospective teachers with little experience with ELLs writing narratives during a one-hour technical intervention. Their individual knowledge, assumptions, and new insights were considered valuable and noteworthy. Clandinin, Pushor, & Murray-Orr (2007) point out that analyzing narrative texts demands that the inquirer be diligently aware of how the participants will be represented in the final product or research text. As researchers, we had to attend to our biases, which included being very familiar with Vanessa, the ELL featured on the CD-ROM, and we had to acknowledge that we did not know the freshman participants in the study outside our one-time interaction with them. Regarding issues of traditional validity, Clandinin et al. (2007) ultimately remind us that constructing a research text is highly situational: "[I]n a different time, in a different social situation, and for different purposes, a different research text might be written" (p. 32).

Findings

Analysis of the data helps us understand what the prospective teachers noticed about Vanessa and her mother as they watched the video clips and simultaneously wrote their narratives. We do not claim causation between the technological intervention and the participants' expressed attitudes toward Vanessa, her family, and the school context. Rather we present the participants' narratives as what is, in our opinion, thought-provoking, hopeful evidence of the type of insights that can be elicited from predominately white prospective teachers when they are exposed to digital stories of an ELL student and family.

Because the narrative data reported in this study were generated as the participants watched the video clips in response to the writing prompts, the writing was a stream-of-consciousness with no revising or rewriting. Thus the findings that emerged depict the raw thinking about, or initial responses to, Vanessa and her family--expressed obviously in the context of the participants' existing knowledge of and assumptions about ELLs.

The participants' narratives vary in length. Because they were written as the students watched the video clips, they were relatively short--realistic for narrative responses generated during a one-hour intervention. Since this study was guided by DBR methodology, after Iteration 1 we modified the narrative prompts and the data collection tools. Therefore, the data from Iteration 1 cannot be presented in a table or cluster graphic like the data from Iterations 2 and 3. However, data from Iteration 1 are included in the content and textual analyses. Table 1 presents details regarding the word counts of the narratives from DBR Iterations 2 and 3 of the study.

Table 1

Word Counts for Participant Narratives Iterations 2 and 3

	n	Mean	St. Dev.	Max	Min
What surprised you most...?	50	63.30	35.00	150	7
What other things did you notice?	50	71.48	39.78	207	7
What does this suggest about working with ELLs and their families?	50	54.22	32.48	166	11

A cluster graphic is an alternate way to represent and analyze qualitative data visually (Pond, 2009). The text from all of the responses from the students in Iterations 2 and 3 was copied into www.wordle.net, and a cluster graphic was created. The larger the word is in the cluster graphic, the higher the frequency of the word in the text. Typical function words in English were removed from the analysis. Clearly the students included topics such as family, Vanessa's mother, her English speaking ability, and her brother being in jail.

Content analysis of the narrative data was conducted to identify trends in the frequency with which specific issues were mentioned in the narratives. In Iteration 1 of the study, the participants structured their spontaneous narratives according to the question "What strategies did Vanessa use to overcome adversity?" while watching the digital stories. The three issues most frequently mentioned in the narratives were (a) *relies on her family* (29 references), (b) *accepts her position in life* (25 references), and (c) *Trusts her mother* (19 responses). In Iterations 2 and 3 of the study, participants typed their responses to the writing prompts "What surprised you about Vanessa and her family?" and "What other things do you notice about Vanessa and her family?" as they watched the digital stories. The four issues most frequently mentioned in the narratives were (a) *Recognition of and admiration of code switching* (15 references Iteration 2; 29 references Iteration 3); (b) *Comment that the mother doesn't speak English* (8 references Iteration 2; 18 references Iteration 3); (c) *Recognition of and admiration of the mother and family* (16 references Iteration 2; 28 references Iteration 3); and (d) *Recognition of issues of identity formation* (6 Iteration 2; 25 Iteration 3).

The textual analysis of the narratives considered the findings of the content analysis according to the literature. Two primary themes emerged from this textual analysis: (a)

combating deficit theory with personal observations, and (b) utilizing home context for holistic observations vs. judgmental observations.

Figure 1

Cluster graphic.

Combating Deficit Theory with Personal Observations

Valencia and Solórzano (1997) identify "the theses of cultural and accumulated environmental deficits" as one of the major models of contemporary deficit thinking (p. 160). They specifically examine the popular diagnosis of "'inadequate' parents, home and child" as a foundational aspect of it (p. 189). Thus examining how the preservice teachers in this study make sense of the digital stories of Vanessa and her mother demonstrates how deficit thinking can be reinforced or dismantled by experience.

The following statement from the data demonstrates not only a move beyond deficit theory, but also an assault on some of its primary principles.

> I think patience is a key part of teaching ELL students. They are trying to accomplish things that most students don't have to worry about. They have to learn a language AND learn in school. [It] is incredible that they are wanting to

> try to do that . . . . They should be looked up to, not looked down on. (Iteration #2)

Clearly this participant's recognition of the tasks involved in ELL students' everyday lives obliterates common deficit theory assumptions that ELLs are lazy and incapable of learning.

Another participant in the study wrote, "The main obstacle and/or difference is just the culture. These types of family things happen with everybody, not just families from different cultures" (Iteration #2). This comment acknowledges the obvious differences between the participant and Vanessa and her mother. However, the participant does not let this observation of differences overshadow the reality that "family things" happen in all families—not just in families that differ from the majority culture—white, English speaking, and middle class.

Another participant wrote for Iteration 2, "These students have added stresses early on in childhood starkly different from those with which I am familiar. Their lives involve responsibility and possible trauma greater than the average child." Although this participant acknowledges the "added stresses" that an ELL with an immigrant family might face compared to someone of the majority culture, she avoids pitying Vanessa. She bypasses pity by casting the possible traumas in Vanessa's life as a source of responsibility for Vanessa. With responsibility comes the assumption that Vanessa can meet these responsibilities, and the comment of the pre-service teacher connotes respect and high expectations of Vanessa—two things in stark contrast to a deficit theory perspective.

> It takes more than just the effort of the one teacher. The teacher more than any other student needs to understand about the background this child is coming from to help them best. They need to know where they came from to help get them where they are going. There needs to be collaborated effort between parents and teachers and perhaps even other people who are important in the child's life. The more people who understand the child that get together to help the child, the better they will be able to function and succeed in American society. (Iteration #2)

By calling attention to the role of teachers, this participant moves beyond deficit thinking, which places most of the responsibility for a student's failure on the student rather than on the accommodations that the teacher might make in order to facilitate ELL students' school experiences and success.

> English language learners might need to be in a position that is comfortable for them when they are learning and trying to put to use their new language skills. No one likes to be wrong, and when learning a language you can be very self-conscious, and making a good environment for them to learn in would be helpful. It would be good to help ELLs find a sense of identity—many do not have one thing to call themselves, they are a mix, but people want a label and they struggle to come up with one. (Iteration #3)

This participant aptly recognizes that academic success for ELLs involves many issues beyond linguistic ones, thus demonstrating keen awareness of the ELLs' life beyond the walls of the classroom and recognizing how a teacher can help ELLs deal with identity formation as well as linguistic and academic development.

Through the data analysis, the researchers felt a desire to quantify the narrative data into those that demonstrated deficit theory and those that did not. However, because of the complexity of the responses, the data could not be quantified according to this either-or mindset. Many of the responses were neutral, descriptive statements of the students' observations. The nature of the prompts led the students to narrate and describe rather than pass judgment demonstrating presence or absence of deficit theory. For example, one student wrote,

> She uses both languages a lot. Only sometimes will she speak English with her mother. She seems to have three identities. She has lived in Nicaragua. Her brother is in jail now, and her father does not live with the family because he doesn't "act right" (Iteration #2).

Some of the points could be initially construed as negative, but when viewed in the context of the whole narrative response, they are not simplistically negative or positive.

Some of the responses could easily be interpreted either as demonstrating deficit theory or as directly opposing it. For example, one student wrote, "I am surprised that Vanessa can speak so well and so eloquently" (Iteration #3). This could be interpreted as "I do not expect to be able to understand ELL students because they lack language skills" or as "Vanessa is very functional in her language." Some responses demonstrated both attitudes.

> She knows Spanish and English very well. She speaks English to her mom and her mom doesn't understand it? She knows the Bible very well. She is shy and reserved but very intelligent. It seems like the way her mom is would influence her and not make her want to learn as much. Vanessa and her mom seem very different, but she still seems to trust her mom a lot. Her older brother is in jail and her mom won't accept that her son did something wrong--she won't take the blame and doesn't want to admit they have problems. (Iteration #2)

This response recognizes Vanessa's strengths, but expresses what could be interpreted as deficit theory toward Vanessa's mother. Because both attitudes are present in this student's response, it is difficult to quantify it as positive or negative. A dichotomous coding of the narrative data as either positive or negative would overlook such nuanced complexities. Similar complexity of thought is continually demonstrated in the next theme that emerged from the data.

Utilizing Home Context for Holistic Observations vs. Judgmental Observations

Participants' holistic observations of Vanessa demonstrate complex consideration of the issues involved in her life and her family's life. These contrast sharply with the simplistic judgmental observations typical of deficit thinking.

While watching the video clips about Vanessa and her mother, participants were quick to recognize that teaching an ELL like Vanessa is not just about teaching language.

> It suggests that teaching ESL is more than simply the language. It is about learning about the person's life and family in order to better help them learn. It will be harder for them to learn if they are having problems at home. (Iteration #3)

> Vanessa seems to be a fairly stable, well-grounded person, but there is a conflict between who she believes she is and what her mom wants her to be. It seems like special care needs to be given to ELL students so that they can be comfortable with who they are. I know that confidentiality is important in the school setting, but I think that it is important for the teacher of these kinds of students to be aware of the home situation so that they can be sensitive to these issues as they are trying their best to help the students. Sometimes it is hard for ELL kids to assimilate into a normal classroom setting, because they are trying to adjust to a new culture as well as a new language. It seems essential to take a special interest in these students that are probably experiencing lots of hard things, including major transitions, most or all of which are totally out of the students' control. (Iteration #3)

These observations represent holistic considerations of ELL students and their school experiences, revealing complexity in thinking rather than judgments.

Language issues, however, did surface as an important concern to the participants as they learned about Vanessa and her home situation.

> I think it is important to realize that these kids, just because they are shy or English is not their first language, does not mean they are not intelligent. I think it is also important to realize that some of these kids hear NO English at home! That would be so challenging. When working with students, I think it would be a difficult balance to be able to know enough about them to personalize learning, but not be too involved and know too much about the student's personal life, such as all the marital problems in Vanessa's family. I think it would be difficult to teach children who don't feel like they belong--it is so necessary to help the student feel like they have a place to belong there, at the school, with people who care about and are interested in them. (Iteration #3)

This participant's observations certainly recognize the language issues impacting Vanessa's school performance. Yet her observations extend beyond negative judgments of the situation to consider the complexities involved. Additionally, this participant reflects on the teachers' role in making the best of situations faced by ELLs.

The tendency for participants to acknowledge specific complexities caused by language issues is demonstrated in the next two observations as well.

> Many children come from homes with parents who do not speak both languages as they do. These children come from backgrounds that are very similar to those who learn English first. We must remember to treat them as such. It is important to bring parents into the education of their students; if a parent does not understand English, that does not automatically mean they are uninterested in the education of their children. (Iteration #2)

> Just because a family may not be entirely English speaking, a member of that family still has great potential. A teacher needs to see the good and praise it and notice the weaknesses and help to strengthen them. They need to be positive. Family life may not be the easiest for people who are learning English as a second language, but they need to learn and want to. Sometimes a teacher can misinterpret a child's behavior. (Iteration #3)

The complexity of thought demonstrated in these participants' consideration of issues surrounding Vanessa and her family are opposite of the rash and superficial negative judgments typical in deficit theory thinking. Free of such tendencies, the participants' observations recognize the strengths of this immigrant family.

The participants shared insights and drew conclusions that could not be simplistically categorized as positive or negative, but rather showed multifaceted thinking. The data demonstrate that the participants were able to consider the complexities involved in this English language learner's life and identify teachers' roles in working with these families.

Implications

This study demonstrates that a group of predominately white females who are prospective teachers can have insightful, empathetic observations of ELLs and their families when given the opportunity to "encounter" them through multimedia *and* create structured narratives about what they observe. This article argues for the use of digital stories with simultaneous narrative responses.

In summary, the following two themes emerged from the textual analysis of the narrative data: (a) combating deficit theory with personal observations, and (b) utilizing home context for holistic vs. judgmental observations. These themes raise the question of why these prospective teachers responded so positively to the video sequences of Vanessa and her mother. We assert that the digital story format represents a powerful learning ecology--a virtual space that provides opportunities for learning (Barron, 2006; Greenhow, Robelia, & Hughes, 2009). The learning ecology of the digital story format locates the prospective teachers' learning in contexts and relationships rather than in the abstract realm of individuals' minds. Teacher education programs should attend to the powerful learning potentials of digital stories and make more use of them in addition to traditional learning objects that appeal primarily to the intellect such as textbook readings and academic articles.

Although the findings of this study resulted from a one-hour technological intervention, and have the weakness of a one-shot experience, they do warrant serious consideration of incorporating multimedia digital stories into teacher education programs as a means of prompting further exposure to and empathetic consideration of lives of ELL students. The data demonstrate the value of learning about an ELL from the perspective of an uninvolved observer rather than that of a person of power and responsibility (e.g. a student teacher, a classroom teacher, an administrator, etc.). A teacher or student teacher who is responsible for teaching an ELL must focus on the way the student's home situation impacts his or her ability to do the required class work—positively or negatively. However, when these prospective teachers who had no responsibility for teaching Vanessa just observed her and her family, they were able to engage in complex consideration of Vanessa and her socio-cultural context without making deficit judgments. This type of complex and empathetic thinking about an ELL student represents an emergent ability to call into question what Valencia (1997b) calls the orthodoxy of

deficit thinking. Such abilities in preservice teachers should be recognized and nurtured in teacher education programs.

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Appendix A

Qualtrics Data Collection Tool