Section II: Program Level Assessments of Innovation

Evaluating Socio-Cultural Pedagogy in a Distance Teacher Education Program

By Annela Teemant

Increasing pressure has been placed on teacher education to prepare teachers to educate bilingual/bicultural students using scientifically-based teaching methods (e.g., Fillmore & Snow, 2000; *No Child Left Behind Act*, 2001). Socio-cultural theory and pedagogy have emerged as a research-based foundation for diversity teacher preparation (Rogoff, 1995; Rogoff & Wertsch, 1984; Tharp & Gallimore, 1989; Vygotsky, 1978; Wertsch, 1985). Socio-cultural theory rests on the premise that learning is social, and that it is through social interaction with teachers and peers who are more knowledgeable that students receive assistance as needed in their Zone of Proximal Development (ZPD) to engage in culturally meaningful tasks. Researchers at the Center for Research on Education, Diversity and Excellence (CREDE) synthesized relevant research into a socio-cultural model of five pedagogical practices: Joint Productive Activity, Language and Literacy Development, Contextualization, Cognitive Challenge, and Instructional Conversation (Dalton, 1998).

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Most practicing teachers have little systematic education in or experience with socio-cultural theory or pedagogy. Darling-Hammond (1997) argued that in-

creasing student achievement means improved focus on teacher development. The demand for diversity teacher preparation programs is high, yet there are relatively few bilingual/ESL teacher educators available to provide teachers with meaningful content and experience in implementing a socio-cultural model of education.

Lytle (2000) argued for innovations to solve such teacher education dilemmas. Distance-learning formats offer one innovative solution to the dilemma of high demands to supply teachers. Another innovative solution is required, however, for distance teacher preparation to be focused on diversity: socio-cultural perspectives must be taught as well as modeled. This second innovation becomes a question of design. How can a high quality distance education program (i.e., an instructional delivery system) be created that results in reflective practitioners willing to innovate in their own practices in light of a socio-cultural approach (i.e., curriculum design, course materials)?

Brigham Young University's (BYU) effort to evaluate the quality of its distance English as a Second Language (ESL) teacher education program, the *Bilingual/ESL Endorsement through Distance Education* (*BEEDE*) program, is briefly described. Evaluation data is reported to document the quality and impact of the *BEEDE* program's socio-cultural design on participants' thinking and practice. Implications are discussed in light of the tensions that innovations pose to teacher education.

Program Description

Graham, Teemant, Harris, and Cutri (2001) described how the university's early experiments with distance-learning formats resulted in individual faculty teaching courses with little consensus on a shared vision for program content or outcomes. In 1998, BYU and local districts wanted to moved toward a new model of distance teacher education. Faculty agreed to base instruction on a socio-cultural theory, model socio-cultural practices, and pursue a shared, programmatic vision and accountability for learning outcomes using a distance-learning delivery system. Research on teacher development, adult learners, effective distance education, and professional development underpinned program and delivery system design (e.g., Garet, Porter, Desimone, Birman, & Yoon, 2001; Munby, Russell, & Martin, 2001; Verduin & Clark, 1991).

The *BEEDE* program (16 semester credits) is comprised of a series of six video-anchored courses and an integrated practicum. Participants learn the foundations of bilingual/ESL education, language acquisition, assessment, family involvement, literacy, and sheltered instruction methods. To offer *BEEDE* at multiple distance sites a delivery system called *ProfessorsPlus*™ was developed (Teemant, Smith, Egan, & Pinnegar, in press). In the *ProfessorsPlus* delivery system, BYU professors authored course instructional guides, CD-ROMs, and video segments. Instructional guides provided the step-by-step session flows with detailed learning activities and homework assignments. Video segments depicted important academic content by weaving together student, teacher, family, community, and researcher perspectives. CD-ROM

case studies represented ESL students' experiences, master teachers' authentic implementation of socio-cultural practices, and researchers' perspectives on teaching, learning, and research. The university developers designed the courses to include social interaction, high levels of assistance, and performance in multiple and culturally meaningful contexts and tasks. However, creating a learning environment that honors the socio-cultural elements of design is dependent on well-trained facilitators — the *Plus* portion of the delivery system.

The *BEEDE* program offered two innovations to diversity teacher education: a distance-education format (*ProfessorsPlus)* and a socio-cultural approach to curriculum and delivery. Distance education has been defined by student isolation, transmission of content through lecture, and limited teacher-student interaction. *BEEDE's* design posits that school district facilitators, armed with carefully crafted instructional materials and multimedia teaching models developed by professors, can enact a distance teacher education program that values social interaction, assistance, and situated performance. The teacher education partnership between BYU and its public school partners has met the high demand for quality ESL teacher preparation. Since 1999 over 3,700 pre-service and in-service students have registered for *BEEDE* courses.

Quantitative and qualitative data from pre- and in-service participants and qualitative data from facilitators are used to evaluate the quality of the courses, learning outcomes, and *ProfessorsPlus* delivery system features (i.e., instructional guides, video segments, CD-ROMs, and local-onsite facilitators). Data were collected and analyzed from the pilot *BEEDE* courses taught between fall 1999 to fall 2002.

Participants, Data Sources, and Analysis

Participant data represent large-group and single-cohort perspectives on the scope of the program. For the large-group view, participants included 206 pre-service (29%) and 508 in-service (71%) participants (N = 714; female = 505). Sixty-four percent of participants were age 35 or older, and 77% had full-time teaching contracts (66% were K-6 teachers). Ninety-four percent of participants taught fewer than 10 ESL students per class. For the single-cohort perspectives, participants included 26 urban/suburban in-service teachers (25 females) where 50% were over age 45 and 75% were full-time elementary teachers. Fifteen facilitators participated in focus-group discussions giving developers feedback following the piloting of each course. The facilitators were, with few exceptions, female, master's-level, ESL-endorsed, experienced public school teachers.

Data were collected from four sources: (1) course evaluation data (Likert-scale items and open-ended questions) from the first three *BEEDE* courses; (2) focus-group facilitator feedback from the same courses; (3) pre-/post-learning surveys from the large group for a single course, *Foundations of Bilingual Education*; and (4) a focused investigation of a single cohort of 26 in-service teachers who completed the entire pilot version of the program.

Participants rated statements related to the quality of the course, facilitator, and activities at the end of the course using a seven-point Likert-scale. Participants rated their beliefs about key course concepts, using the seven-point Likert-scale of agreement. Change scores between pre- and post survey results were calculated for pre- and in-service teachers. Data were analyzed using descriptive and inferential statistical procedures (i.e., ANOVA).

Analysis of focus-group discussions and written open-ended responses adhered to qualitative methods (Patton, 1990). Using content analysis, qualitative response data were analyzed for themes across courses and subjects. These responses were collated into frequently cited themes critiquing program strengths, weaknesses, and learning outcomes.

Findings

The findings are organized into four sub-sections: quality of courses and delivery system (course evaluations); facilitator response (focus-group discussions); concept learning for a single course (pre-/post-learning surveys); and concept learning in a single cohort (end-of-program survey and portfolio reflections).

Quality of Courses and Delivery System

The quality scale ratings (1 = very poor and 7 = exceptional) from the course evaluations of the first three *BEEDE* courses provided relevant means, standard deviations, and weighted ANOVA results. Differences in overall course ratings were statistically significant, F (2, 712) = 9.27, p = .01. The *Foundations of Bilingual Education* course (M = 5.12, very good) is consistently rated more positively than the other two pilot courses, and *Language Acquisition* (M = 4.50) is consistently rated more positively than the *Assessment* course (M = 4.24). Without exception, facilitators were rated positively between excellent and exceptional (6 range), and only three items were statistically significant across courses. Participants rated facilitators as significantly more knowledgeable—$F(2, 708) = 4.47, p = .01$—and enthusiastic—$F(1, 351) = 9.82$, $p = .01$—about the *Foundations* course content compared to the *Language Acquisition* course content. Facilitators were rated as less prepared to teach the *Language Acquisition* course in contrast to the *Foundations* and *Assessment* courses, $F(2, 706) = 13.52$, $p = .01$. When asked, participants rated the convenience of the distance-learning format as excellent (Language Acquisition M = 6.14; Assessment M = 6.05).

Participants responded to two open-ended questions about what they perceived as course quality, strengths, weaknesses, or suggestions for improvement. Verbatim responses were organized into themes related to learning, pedagogy, or delivery system features and analyzed by counting the frequency with which a theme was mentioned. If at least 10 but no more than 50 participants mentioned an issue, it was considered a medium frequency theme. Any issue mentioned by over 50 participants was considered a high frequency theme.

With high frequency, participants felt courses provided new knowledge, especially in the area of improving assessment practices. For example, one participant wrote, "*I have a much better knowledge of how important assessment is in driving the curriculum and that student learning must be the outcome*." With medium frequency, participants also reported increased awareness, reinforcement of practices, and becoming more accommodating of their students. A teacher reported, *"I now know the why, what and how of what I was already doing. I better understand the theory behind my practice*." With medium frequency, participants identified program strengths as the organization and presentation of valuable, meaningful, useful, and helpful content. A pre-service teacher wrote, "*All these BEEDE courses build upon one another and interlock in a good way*."

Participants recognized that learning activities were structured to model the types of socio-cultural practices being advocated to teach a diverse population. For example, one teacher wrote, "*Dialogues in class are some of the most powerful teaching*." Another teacher commented, "*I like actually using the strategies in the learning activities that we're learning to use with students*." The focus on group work, leading to peer-assistance in learning, was often mentioned as being helpful and effective.

Participants' comments were very positive about the facilitator's role in the delivery system. With high frequency, facilitators were seen as approachable, responsive, knowledgeable, professional, and prepared. With medium frequency, participants mentioned the instructional guides as useful, valuable, helpful, or good resources. Participants said the multimedia materials were exceptional, thought provoking, professional in quality, useful, helpful, and productive. The common themes in response to the *ProfessorsPlus* delivery system demonstrated participants' initial positive evaluation of the program's use of socio-cultural pedagogy in its design.

With medium frequency, participants critiqued the pilot versions of courses because they received materials week-to-week. With high frequency, the instructional guides were characterized as too redundant, unclear, or loaded with difficult vocabulary. The homework assignments were considered too many in number and confusing. Course organization was identified as both a strength and weakness. Participants critiqued, with medium frequency, the CD-ROMs, finding them not useful, confusing, and difficult to use. This quotation best represents participants' critiques: "*The theories and principles of the activities were wonderful. Making them more accessible to the learner would be helpful. Use simpler language*." Another participant said, "*This program really has potential when all the kinks get worked out*."

Facilitator Responses

After piloting each new course in the school districts, developers scheduled full day focus-group discussions to solicit feedback from facilitators. This feedback was analyzed for themes related to program effectiveness, learning, pedagogy, and delivery system response. Overall, facilitators reported that the *BEEDE* program was excellent, organized, challenging for participants, and rich in content, research, and

its focus on reflection and pedagogy. Some facilitators worried that the program was too comprehensive with too little time for reflection in the process. For example, one facilitator said, "*This program is so thorough. This is an excellent, excellent program, and so I hesitate to say too thorough*." Another facilitator offered a different opinion saying:

> I don't want you to leave anything out. I want you to allow me, as the facilitator, to feel what my students are doing, where they are, what they caught, so that we can adjust, on the spot. . . . I can be a real teacher instead of an administrator of a textbook.

Facilitators highlighted making adjustments to the curriculum based on learners' needs; however, they were also uncertain about what could be streamlined or changed from the developers' perspective. Facilitators reported that portfolios provided ample evidence of change in teacher thinking and practices. For example, a facilitator said, "*One teacher told me, 'What I've learned from this course is that I really have to learn how to do group work.' She really saw the value of it.*" Another facilitator reported that the reflection activities had great value:

> Where they really reflected and looked at their classrooms: "What does this mean for me?" As I read those, I could see change. . . . I'm seeing them come up with the generalizations. . . . They carry them with them, because they have ownership of them.

The facilitators were generally very positive about the delivery system features. They reported that the learning activities effectively modeled socio-cultural practices, active learning, and community building. The homework was described as rigorous and more intensive than participants expected. Facilitators, like participants, felt that instructions and vocabulary needed to be simplified. Facilitators reported that the quality of video segment content was excellent and justified more time in sessions for reflection and discussion. In contrast, facilitators received many complaints about the accessibility and functionality of CD-ROMs. Facilitators, in response, extended deadlines and encouraged participants to partner to complete CD-ROM assignments.

The facilitators discussed their own roles in the delivery system as both rewarding and challenging. On the one hand, they felt confident in the quality of the curriculum, their ability to model socio-cultural pedagogy, and the participants' achievement of learning outcomes. Facilitators used their own experience to reinforce concepts. On the other hand, one facilitator with over 20 years in the classroom and a Master's degree in linguistics said,

> This is the first time I have ever seen a text modification assignment. Wow! It's the hands-on part of it [the program]. That whole 'looking at student work' is something I hadn't done in my Linguistics program at all.

From their perspectives, the Master's degree programs they completed had not prepared them adequately for the content or the socio-cultural practices advocated. They reported it was challenging to pilot new courses, content, and CD-ROM materials. A facilitator said:

> I was surprised to find out what the teachers were expecting. . . . They want to be told what to do, step by step. . . . 'Tell me this. Tell me that. Give me the lesson plans to teach.' It just surprised me. . . . They want answers and they want the right answer.

Another facilitator offered this explanation:

> They are shifting from their teacher-person to a student-person, and they're saying, 'As a student, I've always learned this other way. . . . As a student, there was always a right and a wrong. Okay, I'm a student now.' They have never experienced it from the student perspective. . . . It is uncomfortable.

Concept Learning

The Foundations of Bilingual Education course teaches content related to the program's Inclusive Pedagogy framework (Teemant, in press), which has five characteristics: Collaboration, Guiding Principles, Essential Policy, Critical Learning Domains, and Classroom Strategies. Participants self-assessed their pre- and post-course beliefs in these five areas by using a Likert scale of agreement (1 = strongly disagree; 7 = strongly agree). Table 1 displays the means and standard deviations for participants' pre-/post-course change scores, as well as the ANOVA results comparing pre-service and in-service groups.

Participants indicated stronger agreement with key course concepts as a result of course experiences, and pre-service and in-service group differences were statistically significant. Pre-service teachers changed more in their beliefs than their in-service peers. Pre-service teachers changed the most in beliefs about Collaboration while in-service teachers changed most in the area of Guiding Principles (i.e., multiple perspectives, high expectations, knowledge-based practice, and accountability). Pre- and in-service educators felt more positive about collaborating with peers, more morally and educationally responsible for ESL students, more aware of educational policy, more aware of student development, and more aware of teaching strategies. These learning outcomes show changes in participants' attitudes toward teaching ESL students.

Concept Learning in a Single Cohort

The cohort of 26 teachers provided self-assessment data on their use of socio-cultural practices and written portfolio reflections about their learning. Cohort participants generally reported that the CREDE pedagogy standards for language and literacy development, contextualization, and cognitive challenge were typical of their current thinking and practice, rating these items in the five range of a 7-point likert scale (1 = not very typical; 7 = very typical). However, less typical of their pedagogy was student collaboration on a shared product (M = 4.89; SD = 1.43), regular goal-directed instructional conversations (M = 4.66; SD = 1.36), and small group classroom organization (M = 4.88; SD = 1.28). These results suggest the *BEEDE* program needs to improve its focus on the use of these socio-cultural elements of practices.

Portfolio reflections allowed participants to summarize their learning as a result

Table 1
Means, Standard Deviation, and ANOVA of Pre-service and In-service Group Difference Scores by Course Concept

Course concepts (Source):	Mean and standard deviation by courses:	Pre-Service Difference	In-Service Difference	ANOVA: *df*	*F**
Collaboration	M SD n	1.31 1.52 47	0.48 1.01 408	2 452	325.11* (0.50)
Guiding Principles	M SD n	0.95 0.69 34	0.58 0.73 380	2 411	162.29* (0.30)
Essential Policy	M SD n	1.19 1.37 41	0.56 0.86 394	2 432	406.21* (0.30)
Critical Learning Domains	M SD n	0.56 0.85 52	0.36 0.74 416	2 465	187.44 (0.32)
Classroom Strategies	M SD n	1.06 1.49 38	0.47 0.91 395	2 430	255.43* (0.45)

Note. Values in parentheses represent mean square errors.
*$p < .01$.

of participation in the entire program. Eleven themes emerged across reflections indicating substantive development in teacher thinking. From the most to the least frequent, the themes included: (1) using assessment to improve instruction; (2) knowing students as individuals; (3) planning learning goals and assessments first; (4) becoming student advocates; (5) using research-based practices; (6) creating opportunities to collaborate; (7) creating safe learning environments; (8) raising expectations and standards for learning; (9) focusing on cognitively challenging curriculum; (10) understanding educational policy; and (11) reflecting on or improving teaching practice.

Eight different themes emerged as common changes in teaching practices across participants' portfolios. From most frequent to least, these themes were (1) use of socio-cultural pedagogy as defined by CREDE; (2) increased variety of assessment techniques; (3) scaffolding student learning; (4) using varied groupings; (5) organizing teacher teams in schools; (6) use of cross-curriculum and grade activities; (7) articulating a school-level advocacy plan; and (8) increasing family involvement. These common themes in thinking and practice show participants' responsiveness,

directly and indirectly, to socio-cultural perspectives where learning is social, teaching is assistance, and performance is culturally meaningful to learners.

Participants wrote most frequently about the importance of learning to assess students' cognitive, social/affective, and linguistic development to guide and improve instruction. One participant (#23) wrote, "*My unit plans became stronger because I was aware of students' needs*." Another teacher (#1) wrote that in her planning she now starts by asking, "*What does this accomplish and can everyone in the class develop learning from it?"* A majority of participants in this cohort identified getting to know and understand their ESL students as an important learning outcome which in turn raised their expectations for student learning. One participant (#17) wrote:

> When I sit down and prepare the next lesson I am going to teach, I jot down notes of accommodations or extra clarification that ESL students might need. This is a world of difference from how I used to teach. I used to just think of the content I was teaching — NOT the students I was teaching.

Another participant (#8) wrote, "*I have been guilty of 'low barring' my former ESL kids. I didn't expect enough of them. . . . They have risen to higher expectations as I have increased my support and demand*." Another participant (#14) admitted:

> Previously I had been more prone to feel that they [ESL students] are disadvantaged and I often wanted to take a more nurturing approach. . . . I am now more conscious of not wanting to let this get in the way of teaching students to be accountable and setting high expectations for themselves.

Raising teacher expectations for student learning apparently led to concrete actions. For example, a teacher (#17) wrote:

> I no longer tell my L2 learners that a particular assignment is too hard for them so they don't have to do it. Now we find a way for them to show, tell or write what they have learned. This change in my instructional decisions has not only made me a better teacher, but has made my students more successful and accountable.

Many participants reported learning to advocate for ESL students in and outside their classrooms. Participants developed advocacy plans for their school, increased collaboration among teachers and parents, and shared the research-based practices promoted. One teacher wrote (#17):

> Talking to the other sixth grade teachers that my students rotate to has become a common occurrence. . . . This type of collaboration wouldn't have occurred a few years ago because I wasn't aware of my students' needs and strengths.

Another teacher (#7) wrote:

> Working together as a group to share ideas, concerns, discuss students, work on school-wide plans, etc. has really raised the morale in our school.

An administrator (#26) wrote:

> I must be an advocate…not just for 'good feeling and acceptance' . . . but for good practice. . . . The CREDE principles are a good foundation. . . . I had the 'moral' principles, now I better understand and believe in the theoretical principles.

These reflections provide evidence of learning an expanded set of knowledge and skills as well as acquiring a more positive advocacy-oriented dispositions toward ESL students and their potential.

Many participants highlighted specific changes in their pedagogy. One participant (#25) wrote, "*My teaching has changed dramatically. . . . No longer am I responsible for dishing out information and hoping that students understand and apply it.*" Another participant (#7) admitted, "*I used to spend more time at my desk. Now I get more involved, moving around the room to help individual students*." She reported a "*complete change in philosophy and practices*."

Another teacher (#6) described specific changes in classroom organization:

> I am using smaller learning groups this year. . . . I can easily call a group of diverse learners based on their needs. . . . By using instructional conversations and scaffolding strategies I am a more effective teacher.

The self-assessment survey and portfolio reflections provide rich evidence that participants in this cohort made changes in their thinking and practice because of their participation in the *BEEDE* program. One participant (#1) wrote about her change:

> As I looked back to assess what I have learned over these three years, it was difficult to think of specifics. . . . Because many of the ideas, techniques and understandings that I had developed as a result of this course had become part of my belief system and teaching practices. My classroom practices change every year, if not every month, to meet changes in the situation, in curriculum, and in my students. The ways of thinking that I have developed are the basis for those changes.

Discussion

This study set out to evaluate the effectiveness of the *BEEDE* program, with its innovative *ProfessorsPlus* distance delivery system and socio-cultural curriculum, in terms of producing reflective practitioners willing to innovate in their own practices with socio-cultural perspectives. In brief, the evaluation data showed that the strengths of the program rest in the quality, richness, and depth of its curriculum as delivered through video segments and expert facilitators as well as participants' learning outcomes, which were in line with program aims. In the pilot version of the program, the weaknesses were the complexity of the instructional guide — namely in terms of instructions, use of difficult vocabulary, and amount of homework assigned from the in-service participants' perspective. The CD-ROM case studies also posed significant challenges to users in accessibility and functionality. Based on these findings, the discussion focuses on improving program design in the context of the tensions that innovation presents to teacher education.

Tension 1: Frozen and Human Elements of Delivery

To design a distance education program capable of promoting teacher development, the *ProfessorsPlus* delivery system relies on a reciprocal and respectful relationship between professors and facilitators. The professor vision is carried in static materials, and the developers must take seriously the fact that facilitators will be the only teachers participants will know. It is the facilitators' responsibility to ensure and value social interaction, substantive assistance, and meaningful learning outcomes in the dynamics of an actual classroom environment.

On the surface, the weaknesses of the instructional guides, for example, are easy to remedy through revisions. The addition of glossaries, use of cross-referencing, reduction of multi-step learning activities, improved proofreading for clarity, and providing improved rubrics for grading have been made to improve the instructional guides, and therefore program delivery. At a much deeper level, the evaluation data make visible the advantages and potential disadvantages of such a division of labor between professors and facilitators in the teacher education enterprise. For example, unlike a traditional textbook, the instructional guides carry the page-by-page lesson flow for each session. Instructions are explicitly written to allow developers to teach and model effective practices and provide some assurance that program participants, no matter the location, will have access to the same quality content, pedagogy, and learning experiences. Quality control in a distance-learning format is an advantage in an era when the value and knowledge base of teacher education is questioned and defended on many fronts (e.g., Cochran-Smith, 2001; Walsh, 2001).

From the user perspective, the instructional guide can actually stand in the way of learning, confusing participants with complex, multi-step instructions for completing activities or assignments. Participants are unaccustomed to instructional guides that make instructional plans visible. The facilitators must follow the guide and adjust instruction, requiring a high level of investment and skill on their part. They not only must take on the professors' vision for learning as their own. They must also trust that the activities in the instructional guide deserve to be taught, even if poorly worded and even if the facilitator does not initially see the connections. Although *BEEDE* facilitators have demonstrated this type of commitment and respect for the materials, it is not considered a given in every context or with every facilitator.

As Goodlad (1994) maintains, the integrity of a teacher education program requires high value be placed on the reciprocal relationships between universities and school districts. The findings of this study provide initial evidence that professors and public school facilitators, working collaboratively, are a promising partnership in meeting the high demands for ESL teacher preparation.

Tension 2: Bridging Theory and Practice

One of the challenges, and sometimes failures, of teacher preparation is helping participants to recognize the theory of learning, for example, underpinning their practices and the practices that can emerge from various theoretical orientations

(Munby, Russell, & Martin, 2001). The decision to produce high-end multimedia materials — video segments and CD-ROM case studies — was based on the belief that supporting teachers in juxtaposing theory and practice would lead to greater autonomy, flexibility, and cognitive complexity. On-going, systematic, and multiple opportunities to question and discuss theory and practice increase the potential of the evolution of teacher beliefs and practices (Korthagen, 2001; Smith & Neale, 1989).

Based on these assumptions, *BEEDE* was designed so participants could read, see, and experience socio-cultural practices. The evaluation data reveal program success in promoting awareness, reflection, and use of socio-cultural theory and practices. The video segments were well-received by participants and facilitators while the CD-ROMs were not. Video is familiar, easy-to-use technology. It tells a story in linear fashion and is viewed by the entire group together. The video segments effectively brought to life the human, visual, emotional, and intellectual components of learning, promoting reinterpretation of experience. The CD-ROMs were designed to produce the same type of learning but were less successful. The CD-ROM technology, in contrast to video, was unfamiliar, nonlinear, individual yet interactive, and computer-based.

Two steps have been taken to improve participant experiences with the CD-ROMs. First, testing procedures of CD-ROM functionality on a wider range of Macintosh and PC computers has been formalized. Second, participants are now introduced more formally to the CD-ROM format and content to reduce user anxiety and encourage greater efforts to gain accessibility to CD-ROM content. The use of CD-ROM case studies will become more common in teacher education and issues of functionality and accessibility less daunting over time.

Tension 3: Mutual Accountability

BEEDE development reinforced the importance of simultaneous renewal in teacher education at the university and public school levels (Goodlad, 1994). Professors were required to model socio-cultural practices through *BEEDE*'s curriculum and delivery system, and participants positively evaluated this innovation over traditional lecture courses. These innovations provide leverage in the university's capacity for teacher education while maintaining high standards for participants' learning. Professors must make themselves accountable for participants' learning outcomes through appropriate data collection and analysis. This is not always the case for professional development activities.

From the public school perspective, the *BEEDE* program also required higher levels of accountability than typical of professional development. It required a system that values homework, data collection, and commitment to school-based, collaborative, problem-solving learning communities that bring about growth and change (e.g., Hawley & Valli, 1999). Teacher learning, like all learning, is a developmental process marked by improvement over time. *BEEDE*'s evaluation data demonstrated that when teachers in a single cohort from the same schools

engaged in ESL teacher preparation, they developed shared goals for student learning and for their school communities. This outcome became possible because of *BEEDE's* innovative distance-education format in which the university and its partnership school districts assumed mutual accountability for learning outcomes in the teacher education enterprise.

Conclusions

Socio-cultural theory and pedagogy underpin the development of the *BEEDE* curriculum and *ProfessorsPlus* distance-learning delivery system. The findings of this study provide evidence that a distance teacher education program can be designed to teach and model socio-cultural perspectives and yield reflective participants who have increased knowledge, skills, and dispositions to innovate in their own teaching for the benefit of students who are learning English as a second language.

Course evaluations, self-assessment surveys, and portfolio reflections represented only first steps in program evaluation. The use of CD-ROM and video-based materials is worthy of further improvement and investigation in teacher education. While changes in teacher thinking were documented in this study, participants' pedagogical learning outcomes also need to be studied using valid and reliable pre-/post-program observations of classroom practices and by connecting shifts in teachers' pedagogical practices to their students' academic achievement. A longitudinal, multi-layered program evaluation can only occur in a professional context where university developers, district implementers, and researchers have a shared, defined vision for learning and an on-going and tenacious commitment to shared accountability. Such efforts are difficult to establish and maintain in socially, politically, and financially dynamic professional contexts. Nevertheless, such efforts should become more common in this era of high stakes accountability and debates over the value of the teacher education enterprise.

References

Cochran-Smith, M. (2001). Desperately seeking solutions. *Journal of Teacher Education, 52,* 347-349.

Dalton, S. S. (1998). *Pedagogy matters: Standards for effective teaching practice.* Santa Cruz, CA: Center for Research on Education, Diversity & Excellence, University of California.

Darling-Hammond, L. (1997). Education, equity, and the right to learn. In J. I. Goodlad & T. J. McMannon (Eds.), *The public purpose of education and schooling* (pp. 41-54). San Francisco: Jossey-Bass Publishers.

Fillmore, L. W., & Snow, C. E. (2000). *What teachers need to know about language*. Washington, DC: Center for Applied Linguistics.

Garret, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*(4), 915-945.

Goodlad, J.I. (1994). *Educational renewal: Better teachers, better schools.* San Francisco: Jossey-Bass Publishers.

Graham, C. R., Teemant, A., Harris, M., & Cutri, R. M. (2001). The pedagogy and technology of distance learning for teacher education: The evolution of instructional processes and products. In L. E. Henrichsen (Ed.), *Case studies in TESOL practice series: Distance-learning programs*, (pp. 141–149). Alexandria, VA: Teachers of English to Speakers of Other Languages.

Hawley, W., & Valli, L. (1999). The essentials of effective professional development: A new consensus. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 127-150). San Francisco: Jossey-Bass Publishers.

Korthagen, F. A. J. (2001). *Linking practice and theory: The pedagogy of realistic teacher education.* Mahwah, NJ: Lawrence Erlbaum.

Lytle, J. H. (2000). Teacher education at the millennium: A view from the cafeteria. *Journal of Teacher Education*, *51*(3*),* 174-179.

Munby, H., Russell, T., & Martin, A. K. (2001). Teachers' knowledge and how it develops. In V. Richardson (Ed.), *Handbook of research on teaching,* 3rd ed., (pp. 877-904). Washington, DC: The American Educational Research Association.

No Child Left Behind Act of 2001. (H.R. 1), 107 Cong., 110 (2002) Enacted.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd Ed.). Newbury Park, CA: Sage Publications.

Rogoff, B. (1995). Observing sociocultural activity on three planes: Participatory appropriation, guided participation, and apprenticeship. In J. V. Wertsch, P. del Rio, & A. Alvarez (Eds.), *Sociocultural studies of mind* (pp. 139-164). Cambridge, UK: Cambridge University Press.

Rogoff, B., & Wertsch, J. V. (1984).*Children's learning in the zone of proximal development*. San Francisco: Jossey-Bass Publishers.

Smith, D., & Neale, D. C. (1989). The construction of subject matter knowledge in primary science teaching. *Teaching and Teacher Education, 5*(1), 1-20.

Teemant, A. (In press). New conceptual tools for content-area teachers: A programmatic approach to content-based instruction. In J. Crandall & D. Kaufman (Eds.), *Case studies in TESOL practice: Content-based language instruction in K-12 settings*. Alexandria, VA: Teachers of English to Speakers of Other Languages.

Teemant, A., Smith, M. E., Egan, M. W., & Pinnegar, S. (In press). Modeling sociocultural pedagogy in distance education. *Teachers College Record.*

Tharp, R. G., & Gallimore, R. (1989). *Rousing minds to life: Teaching, learning, and schooling in social context*. New York: Cambridge University Press.

Verduin, J. R., & Clark, T. A. (1991). *Distance education: The foundations of effective practice.* San Francisco: Jossey-Bass Publishers.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*, (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Cambridge, MA: Harvard University Press.

Walsh, K. (2001). *Teacher certification reconsidered: Stumbling for quality.* Baltimore, MD: The Abell Foundation.

Wertsch, J. V. (1985). *Culture, communication, and cognition: Vygotskian perspectives.* New York: Cambridge University Press.