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Criteria for submitting a manuscript:

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- APA style
- Not more than 15 pages, double-spaced
- Four copies of the manuscript
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- Autobiographical sketches of the authors (three to five sentences each), on one separate page
- Complete title and abstract (150-word maximum) on the first page of text
- Running head and page number on subsequent pages
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A Collaborative Approach to Preparing Field-Based Teachers/Supervisors for Standards-Based Accountability Systems in Teacher Education

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Abstract

Preparing college supervisors/cooperating teachers to support teacher candidates' performance using standards is a challenge for teacher preparation programs. This paper will describe a professional development program collaboratively developed by representatives of the state department of education, institutions of higher education, and K-12 schools. The implementation of the model by one of the state's institutions of higher education will also be described.

Using standards-driven performance-based systems to develop and assess teacher candidates' knowledge, skills and dispositions has been a challenge for those involved in the preparation of beginning teachers, particularly when considering the field-based component of candidates' preparation. The importance of the field experience cannot be overstated. As Wilson, Floden and Ferrini-Mundy (2001, p.17) note, "…experienced and newly certified teachers alike see clinical

experiences (including student teaching) as a powerful—sometimes the single most powerful—component of teacher preparation." Recognizing the importance of the field experience in the preparation of teachers, professional organizations and state departments of education have identified standards for field experiences (e.g., Guyton & Byrd, 1999; INTASC, 2001; NCATE, 2002).

A critical element in the quality of the field experience is the support provided to the teacher candidate by the college-based supervisor and the school-based cooperating teacher/mentor. Stansbury and Zimmerman (2000) place this support on a continuum, which moves from personal and emotional support, to specific task or problem support, and extends to critical self-reflection. The National Council for the Accreditation of Teacher Education (NCATE) (NCATE, 2002) and the Interstate New Teachers Assessment and Support Consortium (INTASC) (INTASC, 2001) require schools, colleges and departments of teacher education to prepare mentor and supervising teachers to provide this support to teacher candidates in their field experiences.

How can teacher education programs ensure that the faculty members who support teacher candidates in the field, including their preK-12 partners, have the needed knowledge, skills and dispositions to supervise teacher candidates in this standards-driven, performance-based system? During the last two decades a number of mentor teacher preparation programs have been developed to prepare field-based teachers (Villani, 2002). After conducting a substantial review of the existing research on mentoring, Wang and Odell (2002) have questioned whether the prevalent mentor support practices are consistent with a standards-driven model of teaching and learning. They note that the prevalent focus of mentoring has been on the personal, emotional, specific task or problem-solving end of the mentor support continuum, with little attention paid to the teaching and learning espoused in the standards-based movement. They note, "Mentors should engage novices in examining their beliefs about teaching and learning to teach, challenge them to construct new images of practice and help them to develop relevant dispositions for learning to teach" (Wang & Odell, 2002, p. 533). Developers of cooperating teacher/mentor professional development programs are being encouraged to in-

clude information about teacher standards and the kind of teaching, learning and professional behavior inherent in the standards-based reform movement in their professional development activities (Stansbury & Zimmerman, 2000).

The State Context

Over the last ten years the Rhode Island Department of Education (RIDE) has facilitated a collaborative effort between the state's eight colleges of teacher education and their K-12 partners. This collaborative effort is designed to ensure that all stakeholders have an opportunity to contribute to the development of tomorrow's teachers, a key component of effective organizational change (Fullan, 1993). Using a concept of design teams, the state engaged the key stakeholder groups in a systemic reform process that addressed each area of the professional development continuum for state licensure (Center for Improving Teacher Quality, 2003), with the ultimate goal of improving student achievement. These various teams functioned in a way similar to what Cashman, Linehan and Rosser (2007) are referring to as Communities of Practice. Communities of Practice are an approach to solving complex educational problems by engaging stakeholders in collaborative problem solving. In Communities of Practice state leaders use their leverage to engage stakeholders in learning and acting together, rather than acting as the experts and disseminating information to stakeholders. The participants in the Community of Practice share knowledge and expertise, develop action steps to take to solve common areas of concern and implement the practices recommended. The various design teams developed: (a) the Rhode Island Beginning Teaching Standards (RIBTS) (RIDE, 1995) that are aligned with Interstate New Teacher Assessment Support Consortium's Model Standards for Beginning Teacher Licensure (INTASC, 1992); (b) a performance-based program approval process (RIDE, 1997); and (c) a recertification process based on individual plans (I-Plans) connected to the teaching standards (RIBTS) and the individual's school improvement plan, i.e., children's learning (RIDE, 2005). A list of the RIBTS is provided in the Appendix.

Another component of these collaborative efforts has been to design assessments and assessment systems to evaluate the performance of teacher candidates on the state's RIBTS (e.g., RIDE, 1997). In 1999 a group of four teacher educators and four K-12 teachers worked with a RIDE facilitator to create a more systematic program for preparing cooperating teachers and college supervisors to support and review teacher candidates' performance in a way that was consistent with type of teaching and learning espoused in the Rhode Island Beginning Teacher Standards. The state saw this initiative as important in its redesign of teacher preparation and recertification to a performance-based system and provided the leverage (the program approval standard related to the preparation of cooperating teachers and college supervisors), and financial and facilitator resources. The participants from the institutions of higher education viewed this initiative as important in their change to a performance-based approval and accreditation system. Finally, the school partners appreciated their role in the preparation of these preservice teachers, their colleagues of tomorrow, but also in the development of their districts' induction programs, an initiative that had recently been mandated through state legislation. Thus, a common need to understand standards, support beginning teachers, provide meaningful feedback and promote professional growth based on research-based practice brought the stakeholders in this and the follow-up Communities of Practice together.

The design team members reviewed the former Regional Lab for Educational Improvement of the Northeast and Islands', "Mentoring: A Resource & Training Guide for Educators" (Newton et al., 1994). Using this document, coupled with their own knowledge and experience, they developed training activities based on the Rhode Island context. The resulting professional development program was intended to support teacher candidates in the field as they learn to integrate theory and practice and develop the knowledge, skills and dispositions expected of highly qualified teachers (RIDE, 1999). A critical difference between the earlier guides, such as the Regional Lab's guide and the work of this Rhode Island design team, was the focus on a common vision of good teaching defined by the Rhode Island Beginning Teacher Standards. This common vision of teaching would not only support teacher candidates in

their professional development, but it could also support the mentor/cooperating teacher's own development (Huling & Resta, 2001), as well as create the conditions to produce a cadre of reform-minded school leaders who promote effective practices in our K-12 schools (Kahne & Westheimer, 2000).

Facilitators from the Rhode Island Department of Education, including two teacher fellows, teachers on leave from their districts to work for RIDE for two years, developed the materials produced by the design team into a professional institute (RIDE 2001). The main components of the institute are included in Table 1.

Table 1: Overview of Rhode Island Department of Education Cooperating Teacher Institute

Topics	Critical Questions/Behaviors
The Rhode Island Beginning Teacher Standards	What do they mean? What do they look like in teachers' work? How will I use them as a cooperating teacher/ supervisor?
Samples of Teachers' Work	Instructional Planning—Why is it important? What does the planning of a beginning teacher look like? How are instructional plans linked to student standards? How can instructional plans provide a basis for targeting areas of growth? Implementing Instruction—How are the lesson plans implemented? What is the connection between implementation and the standards? What observation skills will help the cooperating or mentor teacher record teaching? How are the observations linked to the standards and how can they help the teacher continue to grow? Reflection on Teaching—How do teachers reflect on their own teaching? What is the connection between the reflections and the

Topics	Critical Questions/Behaviors
	standards? Considering plans, implementation and reflection, what do we learn about a teacher? How can these data be used as the basis for individual growth?
Evidence, Observations and Interpretations	Evidence—Specific notes that serve to capture the data from the performance (e.g., problem-solving task with pi, "I do not allow calculator use."). Observations—Specific behaviors seen or heard. Students are seated in groups, but working independently. All students miss problem #5. Interpretations of Performance—Professional interpretations that synthesize the evidence and identify patterns (e.g., "The teacher consistently asks students to justify their reasoning.").
Questioning and Conferencing Skills	How do I question in a manner that fosters inquiry and self-reflection? How do I share the evidence in a way that promotes growth?

The institute was piloted with approximately 240 cooperating teachers and college supervisors from the eight institutions of higher education in the summers of 2000, 2001 and 2002. The participants self-selected to attend the training. At the end of each summer session the materials were revised based on the input of the participants. An important component of the training was the inclusion of both the college supervisors and cooperating teachers in this shared experience. This provided opportunities for reflection and feedback from both supervisory roles in the student teaching experience. It also fostered enhanced communication and partnerships.

Through the various activities, which included reviewing samples of candidates' and children's work, analyzing video

tapes and participating in simulations, cooperating teachers and college supervisors developed a better understanding of the expectations for teachers, the Rhode Island Beginning Teacher Standards. They also developed strategies and skills: (a) for reviewing student teaching performance with respect to the standards; (b) for identifying patterns of strengths and weaknesses with respect to the standards; (c) for providing feedback and direction; (d) for helping others learn to reflect on their practice; and (e) for helping develop plans for individual growth. The expectation of this collaborative effort was that the eight institutions of higher education would then use these training materials to develop their own preparation activities for cooperating teachers and college supervisors. This would enable them to fulfill the Rhode Island Department of Education's program approval standard that states:

> 2.09 Recruit and Prepare Cooperating Teachers and Internship Supervisors. Approved programs recruit cooperating teachers, internship supervisors or mentors whose practice is consistent with the Rhode Island Beginning Teacher Standards and who are committed to supporting the development of prospective educators. The programs provide professional development opportunities to help these educators serve effectively in these roles and other incentives to encourage them to assume responsibilities (RIDE, 1997, p. xx).

The Providence College Context

Providence College (PC), a primarily undergraduate institution, is one of the state's eight institutions of higher education that prepares teachers. It averages approximately 140 program completers a year and has approximately 250 student teaching placements a year. The criteria for the college's cooperating teachers/supervisors are: (a) have three years teaching experience; (b) demonstrate a serious commitment to teaching and represent a model of teaching excellence; (c) possess knowledge and employ practices that are consistent with the Rhode Island Beginning Teacher Standards; (d) have a clear understanding of the Rhode Island Beginning Teacher Stand-

ards and how they apply to student teachers; and (e) be recommended by his/her principal, department head or PC education department faculty member.

Although a few of Providence College's cooperating teachers and supervisors self-selected to attend the state pilot training, PC and the other institutions preparing educators were expected to prepare all cooperating teachers and supervisors. Working with two of the cooperating teachers and one of the supervisors who had taken the state-sponsored training, the college developed a one-credit, graduate course which is offered free of charge to cooperating teachers/college supervisors during two days in the summer or two Saturdays during the semester. The goals of the course are: (a) provide a unifying vision of what we expect teacher candidates to know and be able to do (RIBTS); (b) provide opportunities for mentors/ supervisors/cooperating teachers to develop the knowledge, skills, and dispositions needed to support the performance of teacher candidates that is consistent with the RIBTS; and (c) provide practical experience in assessing teacher candidates' standards-based performance using college-specific observation forms, rubrics, rating scales, etc.

Some of the typical activities that take place during the two-day training and their purpose are included in Table 2.

Table 2: A Sampling of Providence College's Cooperating Teacher Course Activities

Activity	Purpose
A Tale of Three Teachers Written portfolios of three beginning teachers' performance on mathematics lesson are presented. Participants are asked to rank them best to least in terms of mathematics teaching. Discussion focuses on rationales and connection to RIBTS.	Defines what good teaching looks like. Serves as introduction to RIBTS.
Matching RIBTS to Artifacts of Teaching Using various teaching artifacts, such as plan book, parent newslet-	Identify evidence of RIBTS within multiple materials typically available to cooperating

Activity	Purpose
ter, a student conference, unit plan, etc., participants identify examples of RIBTS.	teacher/college supervisor. Reinforces RIBTS.
Evidence vs. Judgment Powerpoint/discussion on evidence vs. judgment that emphasizes the use of RIBTS in gathering evidence from the student teacher's work.	Gathering evidence that is descriptive, not interpretive, to be used to assist student teaching in identifying areas for growth.
Components of a Quality Lesson Participants review a sample of lesson plans, identify the components of a quality lesson and connect them to the RIBTS.	Practice reviewing lesson plans for evidence of RIBTS. Identify areas for growth.
Observation Strategies Introduction to various observation strategies and their purposes. Identify evidence of standards through observations of student teacher's performance.	Participants will understand the importance of accurate observation and recording of teaching and the connection of observational evidence to RIBTS.
Questioning and Conferencing Techniques Introduction to various types of conferencing, such as coaching, collaborative and consultative. Practice questioning to be used in various types of conferences.	Participants will understand appropriate questions and dialogue to use in conferencing with student teachers.
Putting It All Together Participants gather patterns of evidence of the standards from reviewing a lesson plan, observing the lesson on videotape and reading the reflection written after the lesson. They identify standards that should	Using multiple sources to collect evidence of the standards. Identifying standards in need of improvement and developing a plan for improvement. Practicing

Activity	Purpose
be the focus for a plan of improvement and practice the conferencing skills they would use with the student teacher.	questioning and conferencing skills.

Since the inception of the program in 2001, approximately 200 cooperating teachers and supervisors have participated in the course. Preference is given to those individuals who have taken the course when selecting cooperating teachers and supervisors. In addition, administrators in partner schools are encouraged to invite teachers who have not been cooperating teachers and who meet the criteria for cooperating teachers to take the course. Since the initial training was collaboratively developed with the other institutions of higher education and uses the Rhode Island Beginning Teacher Standards as the foundation for the course, the preparation can be recognized by other institutions in the state when selecting their cooperating teachers.

Evaluations completed by the cooperating teachers/college supervisors who took the course have been very favorable. They have reinforced the importance of using a common vision of teaching and learning in assisting student teachers to examine their teaching and their children's learning (Wang & Odell, 2002). They have also emphasized the value participants place on being able to practice various skills deemed critical in their roles, such as gathering specific evidence of the standards, observing, questioning and conferencing (Stansbury & Zimmerman, 2000; Villani, 2004). The power of the experience can be gleaned from a review of some of the participants' comments.

> You think you are observing with all the standards in mind but until you actually practice you do not realize where the focus needs to be. It will help me to be clearer on the standards for beginning teachers and what to look for when conferencing with your student teacher. I will definitely use the observation techniques, work on more observable information and have my yellow RI standard card handy.

> While I thought I had been observant of my student teachers, this course puts it in a new light.
>
> Helped to formulate ideas for improving beginning teachers' practice.
>
> How easy it is to make personal judgments. How necessary it is to have evidence to guide discussions with student teachers.
>
> Realizing that the job of the cooperating teacher is not to develop a clone of themselves, but to further the development of the teacher's skills.
>
> Very helpful and clearly designed to help new teachers grow.

Participants also considered the experience a benefit to their own professional development (Huling & Resta, 2001;Villani, 2004).

> I feel much more prepared to help a new teacher and I can use the materials/information with my own teaching practices.
>
> I appreciate the extensive use of the standards, as I have now internalized them.

Participants in this course have also expressed a need for a follow-up session to discuss their mentoring experiences and to learn from each other.

> A follow-up class would be a nice way to check in with each other and talk about any concerns or successes.

Their suggestions are supported by the writings of Feimer-Nemser (2001), Wang and Odell (2001) and Villani (2004), who have all noted the importance of not only initial preparation for mentors, but also the provision of opportunities for ongoing professional development, particularly in the area of providing the support needed to enhance the beginning teach-

er's own professional growth. How best to provide these additional supports is a topic in need of more study and review.

Conclusion

One of the complex problems facing state departments of education, schools of education and K-12 schools is how to best prepare beginning teachers in a way that is consistent with the research based on teaching and learning. The focus on the standards movement has helped these various stakeholders develop a unifying vision of teaching and learning grounded in the knowledge of what effective teachers need to know and do to help children achieve at high levels. Curriculum, field experiences and assessments must all be aligned to this unifying vision. By using their leverage points and resources, state departments of education can work collaboratively with schools of education and their K-12 partners in Communities of Practice to develop this common vision, and to provide professional development resources and opportunities for college faculty and their K-12 partners to support teacher candidates in the development of the knowledge, skills and dispositions imbedded in the standards. This becomes most critical during the teacher candidates' field experiences, oftentimes the defining component of their teaching education program. The Community of Practice project described in this paper has provided one model that can be used by state departments of education to capitalize on the expertise of faculty in colleges of education and their K-12 partners. Their expertise can be used to develop models of professional development that can prepare cooperating and mentor teachers, as well as college supervisors, for their important and demanding roles in preparing effective teachers for our nation's schools.

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Appendix

Rhode Island Beginning Teacher Standards

1. Teachers create learning experiences using a broad base of general knowledge that reflects an understanding of the nature of the world in which we live.
2. Teachers create learning experiences that reflect an understanding of central concepts, structures and tools of inquiry of the disciplines they teach.

3. Teachers create instructional opportunities that reflect an understanding of how children learn and develop.
4. Teachers create instructional opportunities that reflect a respect for the diversity of learners and an understanding of how students differ in their approaches to learning.
5. Teachers create instructional opportunities to encourage students' development of critical thinking, problem solving and performance skills.
6. Teachers create a learning environment that encourages appropriate standards of behavior, positive social interaction and active engagement in learning and self motivation.
7. Teachers foster collaborative relationships with colleagues and families to support students' learning.
8. Teachers use effective communication as the vehicle through which students explore, conjecture, discuss and investigate new ideas.
9. Teachers use a variety of formal and informal assessment strategies to support the continuous development of the learner.
10. Teachers reflect on their practice and assume responsibility for their own professional development by actively seeking opportunities to learn and grow as professionals.
11. Teachers maintain professional standards guided by legal and ethical principles.

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A Model for Developing Literacy Leadership through an M.A. Ed. Program in Reading

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Abstract

Arthur Levine's (2006) study of teacher preparation in the United States and his resulting controversial recommendations have increased the need for teacher educators in independent institutions to share insights into designing and implementing effective degree programs. To that end, this article highlights aspects of an innovative M.A. Ed. program whose overarching mission is to shape reading specialists into literacy leaders.

Changing Role of the Reading Specialist

In 2000, the authors of this article designed a two-year graduate-level reading cohort program[1] whose mission is to prepare reading specialists as literacy leaders because we recognized that the role of the reading specialist in public schools was changing (Bean, 2004). Due in large part to state-mandated standards of learning and testing programs and the No Child Left Behind Act of 2001 (Public Law 107-110) and its impending consequences for schools that do not meet literacy standards, school administrators have dramatically redefined the role of the reading specialist. No longer primarily responsible for students with special needs in small group pull-out settings, many reading specialists are now responsible for wide-

[1] Program participants complete a set order of consecutive courses together over a two-year period.

ranging literacy issues and concerns at the local, state and federal levels (Puig & Froelich, 2007; Toll, 2006). For example, today's reading specialists must know the content of assessment and measurement, including a thorough understanding of informal and formal assessments. They must know how to properly administer and interpret such tests, and use the results of individual and school-wide standardized assessments to guide instructional decision-making. Reading specialists must be able to locate and write grants that will support a school system's literacy program needs. They must understand the intricacies of change and the process and context in which change takes place.

Clearly, the role of reading specialists in public schools today has become broader and more complex (Bean, 2004). Schools now need literacy professionals with highly specialized knowledge who can assume roles that characterize them as literacy leaders (Burkins, 2007; Moxley & Taylor, 2006). Therefore, our program focuses on the knowledge, issues and concerns facing those in administrative and literacy leadership positions (Allington, 2006; International Reading Association, 2004). With an eye to the regulations for reading specialist licensure in our state, our knowledge of literacy research and our vision to develop a program whose graduates can function as school-wide and system-wide literacy leaders, we have created a distinctive program that we believe accomplishes our objectives.

What Makes Our Program Distinctive?

Four factors distinguish our program from many others. We emphasize literacy leadership. We employ our graduates as teaching partners. We teach our students how to use and interpret a battery of standardized reading and language assessments. We emphasize a sociocultural perspective of dis/Ability.

Leadership

First, we emphasize changing our students' perspectives about themselves as professionals (McAndrew, 2005). We instruct our students, who are primarily teachers, that as literacy leaders they can't talk about school-related issues with their peers in the next classroom in the same way that they have in

the past. Being in a leadership position means that what you say and do is interpreted differently by your peers. We examine this kind of transition and specifically address what it means to move from the classroom to literacy leadership in a school, or to move from an administrative position and background into a literacy leadership position within a school or school system.

During the program, students learn how literacy leaders within a school address a variety of responsibilities at the building level. They must be advocates for children, assessors, researchers, grant writers, organizers of professional development, liaisons between family and school, overseers/managers of state and federal expectations and advocates for school change (Bean, 2004). Students examine important relationships literacy specialists need to develop with other professionals, including Title One and Reading Recovery teachers, various professionals in local intervention programs, social workers and school psychologists.

Students apply their learning and developing perspectives to answer relevant questions. For instance, how do literacy leaders act as agents for change while addressing what the principal requires? How do literacy leaders maintain productive relationships with friends and colleagues who perceive staff development and program changes as threatening? How do literacy leaders develop positive and productive working relationships with other instructional specialists in schools? We teach our students how to address these real questions by asking them to approach their reading with a particular focus and to engage in projects that help them shift their thinking.

In some of our classes, our students are asked to discuss how the content and issues in each piece of their reading relates to what is happening in their individual classrooms, in their schools and in their school systems. We ask them to address each of these areas specifically. We also ask them how the reading applies to state and national standards. This approach moves them away from thinking only about instructional issues in their own classrooms to considering the larger school and school system contexts. Over time they internalize this larger perspective, and the growth is evident in their writing and their presentations as they proceed through the program.

Students interview many different constituents to gain an understanding about how these stakeholders view the same content and issues our students are examining. We ask them to interview principals, reading specialists in their own school and

central office administrators in their school systems to learn about how they conceive of and go about accomplishing their jobs. For instance, one topic our students cover is asking various decision makers how books and materials are selected. Students then develop plans to help schools and school systems do a better job of selecting developmentally appropriate literacy materials. Such interviews and reports are not limited to instructional and curricular issues. In one course, for instance, students interview decision makers about informal and formal assessment practices for students in special education. Such experiences allow students to gain insight into the issues they will address as literacy leaders.

Near the end of the program, students form into groups and do a presentation on what they have learned about assessing and improving literacy instruction. Most of our student groups report to their principals. However, others report to their instructional supervisors, their superintendent or their entire local school board. This event provides yet another experience in which our students assume the role of literacy leaders.

The various presentations our students do throughout the program deepens their expertise and gives them confidence. As a result, our graduates go on to serve on school system-wide committees and state-level committees and give professional presentations at local, state and national meetings. For example, one of our graduates is currently serving on a middle school curriculum task force in Virginia. Another graduate conducts professional development classes for the Virginia State Department of Education and is currently serving on a state-level committee that is revising end-of-year Standards of Learning (SOL) social studies tests. Additionally, graduates present at state-level conferences, including the Virginia Association of Teachers of English and Virginia State Reading Association. Others have moved into school leadership positions. Some of our students have published their work.

Our Graduates Become Our Teaching and Research Partners

We believe that our graduates, whose goals are to move into literacy leadership positions, continue to benefit from professional experiences designed to stretch them beyond their experiences and current professional comfort zones. Consequently, after our students complete the program we look for opportunities to support their ongoing professional development. For example, we invite accomplished graduates to be-

come our teaching partners in both our undergraduate and graduate programs. During this time M.A. Ed. faculty members serve as mentors to those graduates as they strengthen their ability to work effectively with both preservice and inservice teachers.

We encourage our graduates to engage in research of their own, because we believe that scholarship is an integral component of professional development and improving school effectiveness. We invite students and graduates to join the M.A. Ed. faculty in research projects. For example, several of our graduates are involved in the authors' current study of children's use of marginalia to reinforce reading comprehension development for learners in pre-K through middle school classrooms (Thompson & Justice-Crickmer, 2006). When we lead county-wide professional development for school systems, we ask our graduates to participate as co-presenters. We also invite them to accompany us to state and national conferences to present study findings.

Standardized Assessment

Increasingly in today's public schools, formal or standardized assessment results are commonly used to identify, evaluate and demonstrate areas of effectiveness and to target instructional improvement efforts (Hamilton, 2004; Lachat, Williams, & Smith, 2006). To that end, another way our program is unique relates to the number and kinds of formal assessments our students are carefully trained to administer, score and interpret. Prior to a clinical experience using standardized assessments, students learn about educational measurement as it relates to standardized testing. Consequently, our students study descriptive statistics including scores used in norm-referenced assessments, reliability, validity and norm groups. They use their developing knowledge to evaluate standardized tests by examining such data in test publishers' technical manuals.

We teach students that the real value of standardized testing is in the information that can be gleaned from a detailed error analysis of test items. For example, students use measures that allow them to analyze an individual's oral receptive and expressive language skills in morphology, syntax and semantics. Experience with written language tests provides structure and understanding for assessing writing conventions, grammar, syntax, vocabulary, spelling, sentence construction and story

construction. Measures of phonological processing illuminate the roles phonological awareness, phonological memory and rapid naming play in the acquisition of early reading skills. Measures of oral and silent reading achievement allow our students to closely examine a reader's word identification skills, fluency and comprehension processes in order to identify relative strengths and address areas of needed improvement. It is important to note that our students learn about the shortcomings of such measures including issues surrounding ethnic, racial and gender bias (American Educational Research Association [AERA], American Psychological Association [APA] & National Council on Measurement in Education [NCME], 1999). Students also learn about the ways standardized tests can be misused in educational settings (Popham, 2001), for example, when placement decisions for students with limited English proficiency are based on measures that fail to include such groups in the standardization sample.

Standardized measures, combined with informal assessments and the instructional procedures our students learn, allow them to create one picture of a learner's profile that is documented as a well-developed and comprehensive case study. We include formal assessment in our program for two main reasons. First, standardized tests are widely used in educational settings; therefore, our students will be responsible for overseeing the administration of such tests and interpreting the results of those measures. However, while it is true that formal assessments provide norms that allow comparisons for the purpose of rank ordering students and making student placements and services (i.e., reading groups and special education placements), our second and perhaps more important purpose for having students use such instruments is analyzing and interpreting the skills and cognitive processes that characterize effective literacy learners. Therefore, we teach students to use individually administered formal tests to capture a piece of a literacy learner's reading and language profile. We tell those who express an interest in our program that our graduates have the tools to assess literacy learners and their environments and provide pictures revealing important information others may have missed.

Our Perspective of dis/Ability

Literacy leaders will be dealing with issues that surround students with special education labels. Consequently, another

distinctive aspect of our program is the way we ask our students to conceptualize dis/Ability. We believe it is important for our students to understand that people with disability labels have many abilities including the ability to acquire literacy skills. We encourage such thinking in many ways including spelling dis/Ability with an uppercase "A," thereby emphasizing the ability portion of that label.

Throughout our program, students learn to recognize and address the needs of learners who experience difficulties acquiring reading proficiency including those with special education labels. Research strongly suggests that teachers' beliefs about students' abilities significantly influence their instructional decision-making (Stronge, 2002) and, ultimately, their students' learning outcomes. Consequently, another factor that distinctively shapes our program is its emphasis on the sociocultural perspective of dis/Ability over the more widely accepted medical model orientation.

Currently in the field of special education there are two major discourses that influence the decision-making of teachers: the medical model of disability and the sociocultural orientation. The medical model orientation in the field of learning disabilities grew out of clinical studies of medical researchers who investigated cases during World War I in which brain injury in adults resulted in the loss of cognitive functions (Torgesen, 1991). Extending this work, researchers began to identify similarities between speech, language and reading difficulties presented by healthy school-age children whose IQ scores fell within the normal range. Similar behavioral findings between the two groups of patients led doctors to conclude that the children's specific speech and language difficulties were related to neurological impairments.

More recently, technological advances have increased interest in brain studies, particularly in the field of dyslexia (Shaywitz & Shaywitz, 2004). Consequently, neurologically-based inquires have served as the impetus for the discourse associated with the medical model in the field of special education. Given its foundational beginnings, it comes as no surprise that deficit perspectives, based on reductionist models (Poplin, 1988; Trent, Artiles & Englert, 1998), have influenced special education pedagogy in the United States for the last hundred years (Heshusius, 1989). In the reductionist paradigm, students are viewed through the lens of their weaknesses and deficits.

Teachers with deficit perspectives hold low expectations for their students with special education labels and others who experience difficulty acquiring literacy (Stronge, 2002). This is disturbing considering a large body of research reveals that students show greater gains in classrooms where teachers' expectations are high, and conversely, students show lesser gains in classrooms where teachers' expectations are low (Stronge, 2002). When teachers hold low student expectations, they scale down assignments by reducing amounts of work and reducing the time students spend on literacy-related tasks (Justice-Crickmer, 2005). Such findings are troubling because the research convincingly argues that "some students who struggle will never achieve complete success in reading without [rigorous] instructional support that is given *in addition to the balanced classroom program* that everyone else receives" (Cooper, 2003, p. 453).

In an effort to push against a reductionist orientation, we attempt to broaden our students' thinking about dis/Ability by asking them to consider the sociocultural perspective of learning dis/Abilities, a view supported by Vygotsky. Vygotsky argued that from a social perspective, the primary problem of a dis/Ability is not the organic impairment, but its social implications (Gindis, in Vygodskaya, 1999). He maintained that a dis/Ability is viewed as an abnormality only when and if it enters into a social context. According to Vygotsky,

> [a] disability is kind of 'social dislocation' brought about by a relationship of the child to his environment. And although the disability itself…is a biological fact, the educator is confronted not so much by biological facts as by their social consequences. Therefore, the education of such a child comes down to straightening out these social dislocations. The goal of the teacher is to help the child live in this world, and to create compensations…so that the disruption of social relationships is repaired in another. (in Vygodskaya, 1999, p. 331)

That is, a dis/Ability is consequential when it limits the way in which a person can participate in socially-constructed activities that are viewed as important in a community.

It is important to remember that problems identified in one culture may not exist in another, because task interpretations

and consequences are not the same in every culture. Therefore, cultures define disabilities when agreed-upon task expectations clash with the phenomenon of human variation (McDermont & Varenne, 1996). Additionally, societal discourses influence the attitudes and beliefs that are formed around human variation.

We include special education issues in our curriculum thereby creating yet another distinctive aspect in our program. Literacy leaders, more often than not, will be certified reading specialists whose knowledge base includes very little about special education laws and programs. Such reality is perplexing, since over 80 percent of students considered for special education evaluations are referred because they are experiencing reading difficulties. Literacy leaders, with their highly specialized knowledge, need to work closely with special educators who are designing instructional programs for struggling literacy learners. Therefore, it is imperative that literacy leaders understand aspects of special education law that shape special education decisions and practices.

Literacy leaders can play key roles in assisting in the pre-referral process. Prior to costly special education evaluations, literacy leaders can help general-education teachers reshape and broaden their literacy practices to include and facilitate learning for students with language-related learning dis/Abilities. We teach our students how to provide this kind of assistance.

We believe it is important for our students to deliberately examine their own perception of dis/Ability because of its powerful influence on teaching practices (for an in-depth discussion, see Carrier, 1986). Moreover, we believe that literacy leaders who value the sociocultural perspective of dis/Ability will take into account the learning environment in relation to an individual's learning profile when designing literacy instruction, considering both to be of equal importance.

Conclusion

In the last six years, 150 students have graduated from the program and another 40 students are currently enrolled. Though our college prints a calendar-sized poster to advertise the program, our primary mode of recruiting has always been word of mouth communicated by faculty in the teacher prepa-

ration program, school administrators who employ our graduates and, of course, the graduates themselves.

Our program's successes are measured in a variety of ways. Testimonials are particularly important to us. For example, in one K-8 school system the number of students with reading problems who were referred for special education evaluations has dropped from its previous average of around 40 students a year to its current average of around two students a year. A local assistant superintendent of instruction in a different school system reports that he has observed a significant positive shift in his school system's approach to literacy instruction, which he directly attributes to the influence our graduates have had on the instructional program. Tracking our students' pass rates on a state-required test for certification as reading specialists also provides us with important assessment data. To date, the mean pass rate for our graduates on that test is higher than the mean statewide pass rate for all institutions.

A principal goal of the M.A. Ed. program is to develop literacy leaders—professionals who can provide literacy leadership for their school communities and beyond by influencing beliefs and restructuring practices and policies. Throughout the program, students who are inservice teachers review the professional literature to develop their understanding of effective practices. Then they engage in action research by analyzing their own school systems and structures to see how they are currently functioning. Further, students are required to formulate plans of improvement. After those plans are written, our students meet with their school faculty and administrators, including school superintendents, to report their findings and recommendations. Results and outcomes are also discussed with fellow students and program faculty. Throughout the program, recent graduates and others who are working at the state level share their experiences with current students, thereby enriching ongoing discussions surrounding the political nature of public schooling and the ways in which literacy leaders *can* and *need* to contribute.

Future Program Goals

Great things are happening across the nation to insure literacy success for learners in K-3 classrooms. However, we are observing the same gaps in effective instructional practices in

upper elementary through high school classrooms as those reported in the Carnegie Foundation Reports, *Reading Next* (Biancarosa & Snow, 2007) *and Writing Next* (Graham & Perin, 2007). So, regardless of the progress we feel we have made as literacy leader program developers and professors, we realize we need to improve our design so specialists will be better equipped to address both the pressing needs known to us and those yet to be identified. We believe that effective program development is a journey and not a destination. Our work has just begun.

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Appendix A

MA Ed. Reading Cohort Program Course Sequence
Emory & Henry College
Emory, VA

ENLA 502 Developmental Teaching of Reading
Fall (3 credits)

EDUC 510 Language and Literacy Development
Spring (3 credits)

EDUC 503 Theories of Cognitive Processing: Implication for Teaching
Summer A (3 credits)

ENLA 516 Reading Comprehension Across the Curriculum
Summer B (3 credits)

EDUC 504 Assessment in Special and Inclusive Education
Fall (3 credits)

EDUC 511 Formal Assessment Practicum
Fall (3 credits)

EDUC 512 Needs of the Exceptional Reader
Spring (3 credits)

ENLA 514 Practicum in Intervention of Reading Difficulties
Spring (3 credits)

ENGL 520 Modern Grammar, Theory, and Practice
Summer A (3 credits)

EDUC 519 Issues in Multicultural Literacy and Research
Summer (3 credits)

Detailed course descriptions can be assessed through our institution's online catalogue at www.ehc.edu

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An Alternative Model to Implementing Technology Integration in Teacher Education

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Abstract

Federal educational technology grant coordinators from seven small liberal arts colleges were interviewed to determine the ways in which technology had been infused in teacher education programs over the life of the grant. Substantive integration of technology had occurred in each of the schools. Traditional change models were unable to explain how change occurred at these institutions. The study suggests a new model of institutional change based on the entrepreneurial efforts and interpersonal connections of local change agents.

Introduction

Over the past 20 years considerable effort has gone into the reform of K-12 schools to incorporate electronic technologies in teaching and learning. In a parallel effort this has been true of teacher education as well. Over the last decade this reform in teacher preparation has taken two theoretical paths that are seemingly contradictory. Do teachers drive the incorporation of new technologies based on perceived educational needs or does the existence of the technology itself drive its implementation into the classroom?

Traditional educational change literature (McLaughlin, 1990) has proposed that educational innovations must occur based on identified needs by teachers; they must be local; and these changes are unlikely to be sustainable if based on opportunistic funding. Further in this vein (Fullan, 1992; Hall & Hord, 1987), change is systematic and must be supported at each stage of its implementation. And, perhaps most fundamental, change will not occur unless teacher beliefs are changed (Cuban, 1998). Findings related to this framework appear consistently in the teacher education literature (Eifler, Greene & Carroll, 2001; Signer, Hall & Upton, 2000; Todd, 1993).

A different approach is that advances in technology are occurring independent of schooling. The introduction of electronic technologies in schools will by itself create a change in educational practice. This point of view is supported by diverse literature, a significant portion of which comes from the business community (CEO Forum, 2000; Culp, Honey & Mandinach, 2003; Johnson, Schwab & Foa, 1999). This framework has been dubbed *Technology as Change Agent*. In this model, teaching (and consequently learning) improves as the quality of the tools made available in schools improves.

Schools of education are putting considerable energy into the consideration, adoption and infusion of educational technology in their teacher preparation programs (Mehlinger & Powers, 2002). Pressure has been exerted externally from state and national accrediting agencies (NCATE, 2004) for this to happen. It is unclear which change model (i.e., does the teacher or the technology drive the integration?) has greater success in developing programs that prepare teachers to effectively and efficiently integrate technology and education or whether a totally different model may be the answer. A better understanding of how change is likely to be most effectively implemented around technology will be of benefit to teachers, schools of education and eventually K-12 students.

Purpose

The specific purpose of this paper is to examine a grant-funded project designed to integrate technology into teacher

education. Because this endeavor was successful, we want to determine what model best describes the change process employed.

Background

In 2001 the Oregon Technology in Education Network (a consortium of six teacher education programs in private colleges in Oregon) received a U.S. Department of Education Preparing Tomorrow's Teachers to use Technology (PT3) grant. The grant was designed to put technology into the hands of student teachers during their field experiences and to provide a variety of supports while they were investigating uses of these tools in their teaching. These six institutions graduate approximately 600 new teachers each year. A grant coordinating committee, composed of one teacher education faculty member (Campus Coordinator) from each of the six institutions and the grant director, was formed to oversee the implementation of the objectives of the grant. Each Coordinator was responsible for implementing activities and resources provided under the grant in ways that were specific to his or her program.

Over a four-year period, the grant provided substantial resources to each of the participating institutions. Each year, Campus Coordinators purchased $5,000 of new equipment that was to be used exclusively in the schools of education to support student teacher use of technology in practicum experiences. Two conferences were held annually for student teachers to examine effective uses of technology in K-12 classrooms. Further, student teachers could submit competitive proposals for small grant allocations to support innovative projects in their classrooms; these grants averaged about $500. In all, each school of education received about $30,000 per year of direct support from the grant.

Although administrators at each of the institutions gave tacit approval for grant activities, the original grant proposal was developed without discussion by the larger school of education faculties at each institution. In essence the grant was developed and administered as an entrepreneurial activity, separate from other departmental goals, on the part of the Campus Coordinators and the rest of the grant administrative staff.

External reviews of the grant coordinated by the International Society for Technology in Education (ISTE) demonstrated that outcomes from the grant showed substantive impact on the preparation of new teachers, increased infusion of technology in teaching and learning within schools of education, advancement in the use of technology in College of Arts and Science classes and expanded support from the information technology units on each of the campuses. Something had clearly happened over the course of the grant. The purpose of this study is to investigate/explore how Campus Coordinators impacted the integration of technology in teaching and learning within the teacher education programs. What model best describes the work of these Campus Coordinators?

Methods

The respondents for this study were the six Campus Coordinators and the director of the PT3 grant. All but one were faculty members in schools of education in small liberal arts colleges in northwestern Oregon. One Campus Coordinator was a faculty member in a college of arts and sciences. Participant tenure at these institutions ranged from four to fourteen years. Two had been hired the same year as the beginning of the grant. Four of the seven had been hired specifically to teach educational technology courses but for only one of the four was that a primary responsibility.

In the spring of the fourth year of the grant, interviews were conducted with each of the participants on their own campus, usually in the respondent's office. We wanted to hear their perceptions of how changes were occurring on their campus. We thought a way to get at these perceptions was to explore the Campus Coordinators' interactions with the relevant constituencies on their campuses. Specifically, questions focused on interactions with campus administration including Instructional Technology (IT) departments, processes for facilitating student uses of technology, actual technology use by students, effects on instruction of both the coordinator and other faculty and effects of grant support on institutional goals. Interviews were audio recorded. After the interview, the campus was toured to gather data on instructional settings, storage and dissemination

of equipment and materials, and to gather supporting and clarifying data related to the interview.

The interviews and observational data were transcribed. Data were analyzed in a recursive manner. Each of the three authors individually developed coding categories (Bogdan & Biklen, 1998) to identify themes in the data. Group discussion clarified themes and the data were recoded in terms of that revision. A final review as a group was used to select the most descriptive examples among coded entries for each theme.

Results

The interviews with the Campus Coordinators averaged about 40 minutes. Even though an outline protocol was used to guide the interviews, the respondents had much to say on related topics. All of the respondents talked about the changes that had occurred over the four years of the grant in their departments. Universally the perceptions were that technology was now integrated to a substantially greater extent and the faculty, overall, were considerably less resistant to discussing appropriate uses of technology in their work and in their programs. Respondents felt they had a considerable effect at program and institutional levels by spearheading changes in institutional policy toward integration of technology including working with the instructional technology personnel to make infrastructure improvements and encouraging broader approaches to technology access policies from administrators. Because we were interested in how these changes were occurring, we analyzed their responses through the lenses of the two models: technology as change agent and needs as the driving force. Five major categorical themes emerged: One-To-One Interactions, Co-Conspirator, Faculty Reticence, Solving Problems Independently, and External Group Support. These are expanded below.

One-To-One Interactions

All Campus Coordinators felt their major impact was through working with faculty one-on-one.

> Adam—For many years I have served as the informal Go To Guy when something isn't working or when, you know, "I was thinking I might like to try this in my class, could you suggest a way to do that?" So, that has been a much more powerful vehicle. It's the *just in time* delivery to question answering more than any formal workshop.
>
> Bob—So I think our influence on an individual basis has basically been as catalysts for their thinking.
>
> Carol—[Faculty] don't use the help desk…when they want to try something new. They come to me. When I'm on campus much of my time is spent in clandestine meetings when I'm walking across the quad and I end up over in the science building helping a faculty member do something.
>
> Ed—I think there have been a number of instances over the years where whether it is talking to another person in a PT3 meeting or sitting down with another faculty member over lunch, or trying to help someone out to get something done, that a lot of those moments have a very great impact. They have been very successful moments and the person that I was working with and myself both got a great deal out of those.

Interestingly, these one-to-one relationships were described as burdensome at times by several of the Campus Coordinators. They felt not so much that it was a drain on their time, but the faculty consulted the Coordinators for non-instructional reasons. The Coordinators took the place of the "help desk workers" rather than a source for ideas about the infusion of technology about teaching and learning.

> George—At first I was just getting asked every question all over the place and I have tried to make other people more confident so they get asked the questions. I sort of know you get punished for knowing things. I knew that would happen but I always had in mind that this can't be, I don't want to be the guru.

> Ed—I got tired of talking about how the boxes worked. I wanted to get into discussions about what would help students learn.

Co-Conspirators

At the onset of the grant, most of the respondents had only one or two other faculty in the department who were of a like mind about the infusion of technology into teaching and learning. Consequently, these relationships had a conspiratorial tone.

> Adam—Partly because, of course, I was using [technology] and Sally was using it, then everybody rejected it.

> Adam—Mike's biggest asset was [when he was hired] that he wasn't Adam or Sally to begin with, and so here was this other person who could say things that [I] and Sally were saying, but wasn't [me] or Sally.

> George—He and I became close colleagues kind of on that basis of, "well shoot, now what are we going to do?" and so we started taking steps from there but it was a lone ranger/pirate operation to try to keep meeting student needs even though the university said, sorry.

In some cases that relationship manifested itself during the hiring process.

> Adam—I remember during the interview process one of the interviewers said, "So, what do you think about the World Wide Web?" and I said excitedly, "Oh, it is great. I watched it in Mosaic, and I think it has a future for this that and the other," and so she was very understanding that this would be sort of the edge and was looking for someone who might have a background in tech.

> Bob—I was hired to teach tech-specific courses. John was the one that was pretty much doing that and kind of over time he started to fade out of that and I started to fill in and we had lots of conversations along the way about the direction of the course.

Mostly the other faculty member served as someone with whom to reflect on how the grant work would proceed or how technology initiatives would be handled at the department level.

> Bob—When Diane came in a few years ago we had our mind meld and so we really pushed together towards doing more of a curriculum focus. I remain frustrated with [lack of technology use impacting student learning] and Diane and I constantly had conversations on how would we revamp the ed tech course to do that and we've tried to push into things like the planning and implementation courses.

> Ed—The grant process was entrepreneurial at that point. When we did come into that grant, Tom and I spent a considerable amount of time participating in the meetings around that grant up to and including the meetings around the writing of the PT3 grant.

Faculty Reticence

Most of the respondents talked about being on a faculty that spoke of being resistant to integrating technology in their programs and in some cases were openly hostile toward it.

> Ed—There were a substantial number of faculty members who were not terribly interested in the infusion of technology into our program, and some of them for fairly legitimate reasons, I think. But still there was a lot of resistance to focusing resources and energy in this area when we didn't necessarily feel like we had the other areas under control.

> Carol—There is a constant dissidence about the appropriate role of technology in a liberal arts institution, and technology taking over, and uses of technology for instruction.

> Adam—[In planning to integrate technology into our program] there had been at that time a really reticent team about this, "I have academic freedom," and one faculty member voiced this specifically, "Look, you can't make me use this stuff in my class. I have academic freedom to teach the way I want to and I'm not going to use tech and you can't make me."

There were others who weren't quite as extreme in that respect who said, "Look, this is just something else I have to do and I'm busy enough the way it is. [Technology] is tangential, it's a nice toy, but there's no real reason to have to use this."

> Diane—We have my next door person here—hates technology and declares it frequently.

> Bob—Other people see it as power brokering kinds of things, that's well: "Bob seems to be getting power, that's a problem." And there are dynamics within the faculty where it is like, my new role is to rein in Bob's pushing the school of ed in a particular direction. It's not a big happy family. I mean it is okay as long as it stays constructive conversation but it is not always that way.

Solving Problems Independently

Another recurring theme in the Campus Coordinator conversations was that they had little or no administrative support, either from information technology departments or from central university administrators. Often early in the grant, Campus Coordinators needed to find ways to make technology work on their campuses without a lot of support. At the same time, comments were frequently made about the need to intervene at

a policy level to accomplish grant goals. Interactions were not always positive in this area.

> George—All we needed here was a server like mine to plug [course management software] in on and no one realized that if you have a fixed IP address in your office you have a server. So this machine, this Celeron, became our first web server that we installed that on and just started going kind of unbeknownst to all but a couple people in IT. [They] had to help us but they were just sort of, well we don't really do this but I guess we will.

> Adam—The [computers] were my baby and the understanding of Information Services was, "that's Education and they're just weird and so they take care of all of that." So, I put the machines in, installed them, administered them, and fixed them.

> Carol—I represent what could be an institutional change because I've been involved in all of these institutional changes…it's not like, Oh, let her do her thing, we'll never see it, because if she does her thing we will see it. So it's really true that when she does something and if she gets traction it does change things. I feel I really have their respect; I just don't have what I would say was a full partner.

All of the respondents talked extensively about their interactions with the IT departments on their individual campuses. These interactions were by no means consistent among the respondents. Some encountered IT units that considered the Schools of Education generally, and the Campus Coordinator specifically, as renegades and tried to distance themselves from them as much as possible. Conversely, other Campus Coordinators talked about amiable and productive relations with IT. In these cases the respondents received substantial assistance and grant work went smoothly at the institutional level. In the middle were controlling IT units that were willing to help Campus Coordinators but within limits defined by IT.

> Frank—As far as I know we're pretty happy. They're the network hardware guys and I'm the software usage person. So it works fairly well. They're a little hesitant to relinquish that control. There's always good reasons for that—fine line somewhere—don't want to let people do any old thing and then botch up the system, and for good reason—security and the whole bit.

To greater or lesser degrees all of the Campus Coordinators had devised ways to accomplish what was needed with their IT units. What varied was the level at which IT tried to control the activities initiated by the Campus Coordinators. The problems occurred because technology-related activities often require use of institutional level infrastructure. Not all IT departments were willing to accommodate the special requests that required technology change at that level.

External Group Support

Most of the respondents talked about the value of the other Campus Coordinators as a support group. These comments were volunteered outside the scope of the questions asked. The PT3 grant group served as a sounding board and a place to reflect on ideas and activities that were appearing in the individual schools. Over the course of the grant, the Campus Coordinators met about once a month with the program director to plan grant activities and to accomplish administrative tasks. The conversations often strayed from the agenda to include discussions of a more specific nature about what was occurring on their individual campuses.

> Adam—I can't imagine having survived this long doing the things I'm doing and I wouldn't be doing the same things without this network of people. We have formed our own network [on our campus] but it isn't nearly as powerful and as change promoting and supporting as this network has been and so it truly has been this great catalyst. …all the things that come together—this has made it a really good environment to support the kinds

> of things I used to think were tangential to what I do and now are at the heart of what I'm doing.
>
> Carol—[At our Campus Coordinator meetings] as soon as we get involved in anything like this the conversation gets so animated among us and I love those conversations and we have to go back to the agenda to get those things done that need to be done, but I think that is an appropriate place where you have colleagues with expertise and same kinds of teaching responsibilities where we all answer to TSPC [state level licensing authority]; we're all working with school districts.
>
> Bob—It was really helpful to break out of the [our school's] box and get into the [PT3] group and have people talking about their own struggles and visions for what technology ought to be.

Conclusions

Even though Campus Coordinators frequently met resistance with the integration of technology in teaching and learning, over the life of the grant external evaluations confirmed that faculties were adopting technology with less reticence and they less frequently challenged the notion that technology has an important place in teacher education. As Cuban (1998) points out, teacher beliefs need to change for real change to occur and the Campus Coordinators seem to be reporting early vestiges of those belief changes. Was this shift in attitude and practice the result of a needs-based change or of technology as change agent? The case could be made that the need for implementing technology had been established both internally and externally (e.g., NCATE), but there was no systematic attempt at the department or institutional level to identify and implement new directions. Because no attempt to identify teacher needs was ever reported, no evidence that those needs were the driving force for change is apparent in this study. However, the data similarly do not support the idea that the technology itself served as a change agent.

Respondents did not talk about how things changed as the equipment appeared. While the presence of the technology obviously was essential for a shift, the equipment itself was less the catalyst for change than the persistence of the Campus Coordinators.

It would appear that a different model of educational change was occurring. It is clear that above all else, the Campus Coordinators felt that what they were able to accomplish was, to a great degree, the result of their positive interpersonal relationships with others and with one another on their campuses. Although the grant-provided resources were a help, the respondents talked much more about affecting the culture of their departments and institutions through one-to-one interactions. Their private discussions with other faculty, administrators and IT personnel were at the root of the changes in technology use.

Additionally, the Campus Coordinators talked about their need to be supported in their work by others of a like mind. They found that support network to a limited extent within their departments but primarily outside of their institutions via the interactions with the other Campus Coordinators.

An important aspect of this project, which may be different from other settings, is that the Campus Coordinators had *control* of the grant resources (particularly the equipment). They were responsible for housing, organizing and sharing the grant-funded resources with other faculty and students. This sense of ownership and control in the department rather than through an IT department may have influenced the dynamics of the system.

The following summarizes the salient points that surfaced from the interviews with the Campus Coordinators concerning the successful infusion of technology into teaching and learning in these schools of education:

1. Each of the Campus Coordinators stressed that the infusion of technology in schools of education had to be focused on how the technology would affect student learning and that the equipment and how to use it was subservient to that aim. Those who are responsible for leading technology integration need this point of view.

2. Schools of education need independent resources that they control to encourage faculty and preservice teachers to infuse technology in teaching and learning. While an initial concern was that the dissemination and maintenance of equipment would be time consuming and difficult, the Campus Coordinators did not find this to be true.

3. Those from schools of education who are in charge of these efforts need to establish relationships with IT departments. Inevitably infrastructure conflicts occur and resolution is more likely to appear if IT and schools of education are negotiating on a first name basis. Administrators were generally not effective in this role.

4. Change happens one-to-one. Technology leading faculty members are generally better support for other faculty than IT personnel because faculty members have a better understanding of the context in which the problems have appeared. IT personnel tend to look at needs from an equipment/infrastructure point of view. Faculty are generally more oriented toward learning and productivity. Interestingly Campus Coordinators provided this support in their own and other departments outside of other faculty duties.

5. Complex organizational change is a dynamic process. Those who are leading change need an opportunity to reflect on their progress. Collaborating with others of similar interest outside of the schools in which leaders are working is important. It provides grounding in the broader context of the problems that are being encountered.

If we were to describe a model that best depicts the change process occurring on these six institutions, the two frequently proposed educational change models would need to be refined. Neither adequately captures these cases. Needs-based change models don't accommodate the impact of entrepreneurial efforts of the Campus Coordinators and technology as change agent diminishes the importance of interpersonal interactions. Sustained change tends to be very organic—growing individually from interest, need, observation and support.

It may be that the answer to how to infuse technology into teaching and learning in schools of education is that it is idiosyncratic and context-specific. It is a melding of needs, resources available or easily obtained, and, perhaps mostly importantly, faculty members wishing to take on leadership roles. Indeed, the changes that occurred on the campuses in this study were not the same. One campus brought on new educational technology courses, another implemented technology requirements in clinical experiences, another provided numerous faculty development experiences. What was similar was the ways in which the Campus Coordinators each became leaders on their campuses. Seeing how educational technologies can be used as teaching tools to promote learning gains, and *just-in-time* support to help with the implementation of these strategies seem to be more dependent on a few technology leaders than on simply buying equipment or even articulated vision within the schools of education.

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Tomorrow's Teachers:
Balancing Federal Guidelines and Professional Judgment

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Abstract

Teachers, and those who prepare them, struggle to balance test-centered legislative mandates and conscientious professional practices. Increasingly, professional judgment may be at variance with federal testing guidelines. Present federal testing requirements, if strictly followed, will retain a significant number of students in grade resulting in an increased likelihood of ultimate academic failure.

Few would argue *No Child Left Behind* (NCLB) has transformed American public education. Progressive child-centered, nurturing doctrines of the 70s and 80s have given way to "accountability standards" based upon corporate quality control models. Teachers and those who prepare them historically focus upon individualized instruction and developing professional judgment rather than lock-step content mastery. Professional judgment is deemed critical because classrooms invariably hold off-target, on-target and beyond-target learners—and teachers must effectively challenge them all.

The bell-shaped curve prescribed by off-target, on-target and beyond-target learners is so pervasive it defines validity in the world of standardized, norm-referenced tests. Educators must resolve testing with best practices—central tendency with Adequate Yearly Progress (AYP). Regardless of efforts to standardize *X*-graders, "bells" form up according to social-economic opportunity, motivation, native ability (IQ) and a

variety of other factors (Tomlinson, 1999). Current federal high-stakes testing guidelines press for near 100% pass rates (U.S. Department of Education, 2002), but failure is as unavoidable as it is unfortunate for a portion of any population taking a valid test. Professional educators express concern not so much over tests, but over high-stakes decisions based on a single test.

The primary goal of assisting each student to accomplish his or her personal best has become secondary to all students earning a passing score on a test. Though these goals are not necessarily mutually exclusive, it is not surprising that teachers and teacher educators wrestle with reconciling student interests, exploration, social learning, constructivism and vocation to bubbling in answers on a few dozen content area test questions. Of considerable concern is the fact that schools are not worried about exemplary scores, but *passing* test scores. For most professionals, NCLB contradicts centuries of academic investigation and practice. Renowned theorists such as Bloom, Dewey, Erickson, Froebel, Herbart, Maslow, Montessori, Pestalozzi, Piaget, Vygotsky and others—a virtual Pantheon of Educators—would question the wisdom of high-stakes testing. Dewey (1897) might pragmatically state, "Education is life," but as testing dominates education, today's teachers may be tempted to reply, "Testing is life."

Dilemma: Legal vs. Professional Mandates

Teacher educators face a dilemma as they prepare preservice teachers for a context in which test scores mandate retention, but other equally valid indicators suggest promotion is in the better interest of the student and society. The gap between what is prescribed and what many educators believe and have practiced for years is significant. Teachers are taught to identify a child's developmental stage, individualize instruction and use multiple assessments to optimize and document individual learning. Because a single content area test cannot do likewise, a strict test-for-promotion policy guarantees a future impasse.

If test-for-promotion guidelines are implemented as written, public school testing will follow one of two paths. The first path assures high pass rates, but will result in tests so easy the

majority will consider them a waste of time. This path establishes a low performance standard, but is inclusive. The second path assures valid and reliable measures of knowledge and skills, but will produce a riptide of retentions that will sweep a significant part of the population out of the system. This path establishes elevated performance as a standard, but is exclusive.

NCLB legislation is predicated upon standardized assessments for all while embracing the notion of universal pass-rates—clearly evocative of production-line quality control models. Unfortunately, what works when turning steel into cars does not work when turning children into educated adults. A corporate quality control standard governs the first, but central tendency governs the latter. Bell-shaped curves associated with standardized testing will not be dismissed by NCLB legislation.

No doubt testing can be a powerful indicator of achievement in a broader context. In fact, reliable and valid tests are very informative in the context of central tendency, normal populations and fundamental statistics. NCLB testing has had at least one positive influence in our schools—nominal students (disabled or uninspired) are now getting more attention than ever before. Unfortunately, despite increased attention, 10% to 15% of our nation's children continue to post insufficient test scores.

Mandated Retention

Last year, pass-the-test-or-else guidelines were supposedly implemented in third, fifth and eighth grades. Unapparent to casual observers is an *invisible grade* hidden away in our age-grading system. The average student spends 14 years moving from pre-kindergarten through twelfth grade. However, roughly 10% find it difficult to graduate in 15 or more years, if at all. Approximately one in ten of our nation's 54 million students (U.S. Department of Education, 2006) face an additional year in school in a test-for-promotion world.

The expense of non-promotion should cause many to pause and question whether such a strategy is fiscally responsible. The cost of a year's education for one student ranges from

$3,750 to $5,000 (Consortium for Adequate School Funding in Georgia, 2002; Cortez & Cortez, 2005). Last year the State of Georgia reported more than 27,000 non-promotions in grades three, five and eight, adding $135 million to its education budget (Jones, 2006). Texas reported 187,000 overall retentions, adding $921 million to its education budget (Radcliffe, 2006).

Of course, Georgia and Texas are not the only states facing non-promotion expenses. California, Delaware, South Carolina and Wisconsin all have laws requiring schools to reinstate retention (Kelly, 1999). In recent years states have reported non-retention rates from 4%—10% before NCLB guidelines for grades three, five and eight were implemented. North Carolina reported 61,070 (4.4%) kindergarten through twelfth grade non-promotions in 2005 (North Carolina School Report Card, 2005). Florida reported 201,684 (7.7%) non-promotions in 2004 (Florida Department of Education, 2005). Louisiana reported 64,496 (10%) non-promotions in 2005 (Louisiana Department of Education, 2006). One report from the National Center for Education Statistics (2005) stated 9.6% of 16-19 year-olds were "non-promoted" at least once in their school careers. Finding non-promotion data is challenging because most states do not widely publicize retention statistics.

The National Association of School Psychologists (2006) estimates "as many as 15% of American students are held back each year, and 30%—50% of students in the US are retained at least once before ninth grade." Another NCES study reports 16.8% of students repeat at least one grade (Kelly, 1999). Darling-Hammond (2000) estimates an overall retention rate of 15%—20% annually, most of them at-risk students in urban settings.

Considering central tendency, a 10% non-promotion rate is actually somewhat reasonable. In a typical distribution, at least 15% fall outside one standard deviation below the mean. In fact, 10% non-promotion rates tell us something about the rigor or scoring of promotion tests. If children failing pass-for-promotion tests are indeed retained, our public schools may face serious class size problems, increasing ability gaps among students, motivational issues for teachers and students and increased costs. The U.S. Department of Education (2006) estimates our nation has approximately 54 million students—yet

the Department's $56 billion budget does not include the estimated $27 billion needed to re-educate 5.4 million non-promotions (American Association of Colleges of Teacher Education, 2007).

Research studies, from as early as 1930, catalog the negative effects of non-promotion on student achievement (Ayer, 1933; Kline, 1933). Non-promotion is strongly correlated with dropping out of school (Grissom & Shepard, 1989; Roderick, 1995). Non-promoted students are 70% more likely to leave school and those not promoted a second time almost certainly drop out (Setenich, 1994). Sixty-five studies completed in the last decade overwhelming indicate non-promotion not only fails to help, but often damages students and increases the likelihood of dropping out dramatically (Jimerson & Kaufman, 2003). Adding insult to injury, 50% of non-promoted students do no better their second time around, and 25% actually do worse (McCollum, Cortez, Maroney, & Montes, 1999).

Ironically, current "rigorous" accountability measures demonstrate the need to reinstate social promotion for disadvantaged populations. Until recently, students with limited capacity could count on social promotion to stay in school with age-level companions and perhaps receive vocational guidance. Social promotion dealt with the reality of limited mental capacities. Last year, NCLB testing-for-promotion guidelines closed the door on social promotion. One might well wonder what led us to this point in American education.

Globalization and Education

Corporate America probably was the first to glimpse the emerging role of education in a global economy. As corporate planners shifted from a domestic to a global paradigm they found technology, democracy and education leveled the playing field for nearly everyone, everywhere. American students must compete globally for jobs. Perhaps they foresaw that dropping out of high school would be tantamount to joining the poorest economic classes *on the planet*. In an attempt to ramp up education for the coming competition Corporate America turned to what it understood best—quality control.

In the early 1980s Corporate America began lobbying for "quality control" in America's schools (National Commission on Excellence in Education, 1983). American industry successfully used quality control standards to eliminate inferior products and assumed preparing children for future employment could not be much different from preparing cars for the road. Products failing to meet standards could be repaired or redone until quality standards were met. Corporate lobbyists convinced our leaders that similar standards would work with children. In theory, *all children* would meet standards. Children failing to meet standards would be "recycled"—re-taught or retained until standards were met.

Corporate America has participated in various "commissions" that consistently find fault with American education. The National Commission on Excellence in Education wrote *A Nation at Risk* (1983) and more recently, the New Commission on the Skills of the American Workforce released *Tough Choices or Tough Times* (2006). A review of commission reports reveals Corporate America's influence on education reform in the United States. Various commissions, such as the Education Commission of the States (2007), Commission on the Future of Higher Education (2007) or National Assessment Governing Board (2007), have significant corporate input. Commission memberships are stacked heavily with higher education administrators, politicians, ex-governors and corporate officers. The makeup of numerous education-related commissions may be found at www.ed.gov under "Boards and Commissions."

A common theme in commission reports on the American workforce is the deplorable state of our nation's high school graduates—specifically the nominal variety who are non-college-bound, non-trade-school-bound, non-otherwise-employed—those at the left end of the bell-shaped curve. Ironically, the New Commission on the Skills of the American Workforce (2006) states they "never dreamed" our students would "end up competing with countries that could offer large numbers of highly educated workers willing to work for low wages." Technology, outsourcing and global economics have placed American corporations in a frightening position—if they continue to hire locally, they will be undercut by overseas competition.

Global math: In a global market our least educated citizens compete with the most educated citizens in Asia. The sobering truth about globalization is that Asia can numerically match all Americans—one-to-one—with the top 15% of their population. No doubt America's CEOs and corporate boards would prefer to keep production on-shore, but will certainly go off-shore to remain profitable. Corporate America clearly understands that all our 300 million must perform at superhuman levels when competing with nations whose populations are numbered in the billions in an open, technically enhanced global market.

The availability of technology drives globalization and has influenced American worker wages adversely for the past two decades (Pethokoukis, 2007). Holding public schools accountable for the bottom quartile of our nation's workforce may bring sordid satisfaction to some, but offers no solution to the problem. The United States must wake up to the fact that the world has changed and we are competing in a predominately "flat world" where isolation and protected markets no longer exist (Friedman, 2005). Holding teachers accountable for handicapped or uninspired students will not make us more globally competitive. Nor will compressing the curriculum to easy-to-score multiple-choice responses benefit the general population.

The Next Generation—Dualistic, Proactive Teachers

America's teacher preparation programs face a daunting task as they prepare teachers who are well-versed in preparing children for tests, but know better than to place their faith in testing. The next generation of professionals must be able to practice in an arena of contradiction—paradoxically attempting to excel in a test-centered system from which they are actively trying to disconnect. Furthermore, most teachers will strive to nurture creativity, innovation, initiative and strong problem-solving skills in a context predetermined right and wrong answers. In addition, globalization suggests amassing content information will likely be the sole domain of technology, while personal success will favor those with the initiative and creativity to use its information in an innovative manner.

How will teacher preparation programs respond to this new demand? Until NCLB fails authorization by Congress, teacher

educators must prepare preservice teachers who thrive in test-centered schools while advocating the demise of high-stakes tests. Thus, teacher preparation programs might address these issues in their curriculum:

- Accountability—analysis of impact of federal, state and district pressures on principals and teachers for high scores;
- Formal assessments—types of tests (content, norm referenced, end-of-course, etc.), test development, reporting conventions, methods of comparison, state curriculum standards and value-added calculations;
- Standardized test-taking strategies—how to help students take tests, pacing, test reading strategies and guessing strategies;
- Teaching tests—moving beyond drills and practice tests to games and engaging, relevant lessons with embedded test-related tasks;
- Enrichment—intentional daily inclusion of liberal arts, creativity, problem-solving and analogous thinking; and
- Professional dispositions—clarifying duality (responsibly obeying professional judgment and governmental directives), political activism/advocacy, appreciation of valid and reliable measures and remaining child-centered in a test-centered environment.

Proactive Involvement

Educators must be proactive as they attempt to bring about needed changes. Perhaps the upcoming presidential election will serve as a catalyst to coalesce voters around the failure of NCLB legislation to yield better schools. The Bill and Melinda Gates Foundation (2007) recently announced they were launching "ED in '08"—a sweeping public awareness and action campaign designed to mobilize the public and presidential candidates around solutions for the country's education crisis. While focusing primarily on drop-out rates, this campaign may serve as a catalyst for more thoughtful education reform.

According to a recent Rose and Gallup poll (2006), the public believes education is a local concern. In 2008, local and state control of education might be *the* deciding factor for these

voters. This coalition of irritated voters will be bi-partisan—disillusioned Republicans fed up with out-of-control spending and federal intervention joining Democrats concerned about NCLB treatment of marginalized populations and those in poverty.

Those displeased with high-stakes testing, public school labeling, corporate quality control strategies, vanishing liberal arts and the federalization of schools could easily exceed 30 million voters—America's 4 million-plus teachers (National Center for Education Statistics, 2005), teacher educators and administrators, as well as the parents and guardians of 54 million students (of which approximately 10% are failing promotion tests). This constituency will be looking for a champion—someone who will responsibly challenge high-stakes testing. Candidates strongly advocating a return to liberal arts, maximizing individual potential and a fair promotion system may earn the vote of educators and educated citizenry. The best way to rally support is to capture media attention—making public education as high-profile as war, illegal immigration, abortion, same-sex marriages and gun control. Editorials, op-ed pieces, school board appearances and peaceful, high-profile protests are a good beginning.

Letter campaigns involving classmates, small groups, organizations and associations can have an impact. Though many educators find it difficult to set aside time to write political letters, they would more than likely get a response for their efforts. Emails or letters to newspaper editors, especially in smaller communities, have an excellent chance of publication and offer a sense of achievement for those needing immediate validation. Furthermore, a study of political letter-writing done at a ranked comprehensive college reported the vast majority of those taking the time to write receive publication or a direct response from their target (Wakefield, 2005). With a minimal amount of organization, groups can mass mail or target specific decision-makers. Considering the upcoming presidential race, informing candidates of the opportunity to attract a significant block of voters is critical.

Conclusion

NCLB retention policies present educators with one of the greatest professional challenges of our time. Students who reach the limits of their ability or motivation in test-centered schools need well-prepared teachers more than ever. American schools need professionally prepared teachers who can navigate the testing landscape with as few casualties as possible while providing all students a relevant, usable education. Historically, professionals have done everything within their power to "save" students from unfortunate circumstances, bad choices and physical or mental limitations. In many countries, natural selection and attrition automatically and arbitrarily move nominal students out of classrooms and into the unskilled labor force. Today's teachers have a seemingly impossible task—building a bridge that will allow challenged students safe passage from childhood to an adulthood where the doors of opportunity remain open to those with intelligence, integrity *or* industry.

Our nation has a rich history of educating the head, heart and hands, and yes, socially promoting those who do not fit academic molds. America celebrates innovative problem solvers, public servants and diligent workers. Educating head (intellect), heart (ethics) and hands (work skills) yields the kind of society in which most of us enjoy living. American will be best served by teachers who are prepared to handle testing wisely while maximizing individual potential in an environment of challenges and problem-solving. Responsible professional preparation programs will yield teachers competent in teaching content for testing. Moreover, teachers who will challenge students to analyze, synthesize and evaluate critically as they apply their heads, hearts and hands in their areas of talent and passion.

Teacher educators can no longer afford to spend time bemoaning the current testing dilemma before preservice teachers in classrooms and field experiences. We, too, must shift our paradigms and acknowledge our students will compete with their counterparts around the world. Our nation's future may well lie in how well we prepare new teachers to implement a globally competitive curriculum anchored in testing while remaining true to their professional mission.

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