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AILACTE Journal Call for Manuscripts

The *AILACTE Journal* is a refereed journal with national representation on its editorial review board published by the Association of Independent Liberal Arts Colleges for Teacher Education. Each issue is nonthematic. The journal, published annually, is soliciting manuscripts addressing issues related to teacher education within the liberal arts context; including teaching and learning, pre-service and in-service education, research and practice related to the preparation and development of teachers, and other related topics. Project descriptions, research reports, theoretical papers, papers espousing a particular point of view and descriptions of activities or issues pertinent to the education and professional development of teachers at the local, state or national level would be appropriate topics for the journal.

Criteria for submitting a manuscript:

Manuscripts must be postmarked or received by June 13, 2014. Authors may choose to submit using either the traditional paper format or using an electronic format.

For paper submissions, authors are asked for the following:
Authors are asked to submit *four paper copies* of the manuscript. Manuscripts must:

- comply with *The Publication Manual of the American Psychological Association, Sixth Edition* (2010) for format and style;
- not exceed 15 pages, double-spaced, and within the manuscript there should be no identifying information that reveals authorship or institution;
- contain the complete title, abstract (150-word maximum), and keywords, on the first page of text;
- contain running head (of no more than 50 characters) and page number on subsequent pages according to current APA style;
- contain author's(s') name and affiliation *on the title page only* with autobiographical sketches of the author(s) (three to five

sentences each) on one separate page; and,
- a one-page information sheet that contains the complete name, postal address, email address, telephone and fax numbers of the primary author along with the title of the manuscript.

For electronic submissions, authors should comply with the above but submit manuscripts as follows:
- the full manuscript (no identifying information) with a title page that contains only title, abstract, and keywords
- a separate file that contains the title page which includes title, author and institution, abstract, keywords, and autobiographical sketches of each author (three to five sentences for each)
- a separate file that contains the complete name, postal address, email address, telephone and fax numbers of the primary author along with the title of the manuscript
- all files should be sent as attachments in a single email to the following address: fkozicky@transy.edu .

An electronic file copy of the manuscript in MS Word or compatible software for Windows 7 will be needed after acceptance for publication. Submit mailed manuscripts to:

Amelia El-Hindi Trail, Editor *AILACTE Journal*
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In light of our blind review process, please address all correspondence to Frankie Kozicky at fkozicky@transy.edu who will contact the editor while preserving author anonymity.

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Volume X
Fall 2013

Table of Contents

Beyond Small and Nurturing: Tapping the Potential of Liberal Arts Teacher Education 1
Deborah Roose, *Oberlin College*

Responding to edTPA: Transforming Practice or Applying Shortcuts? 19
David W. Denton, *Seattle Pacific University*

Developing Benchmarks to Measure Teacher Candidates' Performance 37
Laura Corbin Frazier, *Mount St. Mary's University*
Stacy Brown-Hobbs, *Mount St. Mary's University*
Barbara Martin Palmer, *Mount St. Mary's University*

Integrating Instructional Technology into a Teacher Education Program: A Three-Tiered Approach 55
Elizabeth Truesdell, *Dominican University of California*
Rebecca Birch, *Dominican University of California*

Co-Learning: Maximizing Learning in Clinical Experiences 79
Hillary Merk, *University of Portland*
Jacqueline Waggoner, *University of Portland*
James Carroll, *University of Portland*

Becoming Culturally Responsive: A Framework for Teacher Development. 97
Melissa Kagle, *Colgate University*

From the Editor

I am very pleased to present Volume X of the *AILACTE Journal*. As I reflect on the process of creating this volume, I want to thank all the authors who submitted manuscripts and compliment them on their fine work. I would also like to thank the 2013 Editorial Review Board, AILACTE Publication Editor Jacqueline McDowell, and my editorial team at Transylvania University.

In putting together this volume, I could not help but marvel at the dynamic of change which characterizes this day and age. We see change on all fronts, from the changes to the accreditation nomenclature to changes in P–12 classrooms where emerging technologies create new expectations for learning.

While we must respond to change, we also cannot lose sight of those timeless ideals of liberal arts education. We still want teachers to create classroom communities where students develop those critical habits of mind and productive dispositions for life-long learning. As we stand at the nexus of change and tradition, creative work ensues. Such is the work that is presented here. Collectively these pieces raise critical questions about the very nature of our discipline as we navigate the uncertain waters of teacher education today. Deborah Roose, in the opening article, engages us in a conversation about what exactly constitutes liberal arts teacher education and underscores its distinctive importance. David Denton's piece provides a critical examination of edTPA, the latest trend for teacher performance assessment. Laura Corbin Frazier, Stacy Brown-Hobbs and Barbara Martin Palmer have collaborated with their professional development school partners to advance the work of performance benchmarks. Elizabeth Truesdell and Rebecca Birch present a project that allows us to see technology integration in a new light. Hillary Merk, Jacqueline Waggoner, and James Carroll present their work on a new model of co-learning that enhances the student-teaching experience. Finally, the volume closes with Melissa Kagle's piece which presents a framework for understanding the development of culturally responsive practices in beginning teachers. We applaud these authors who represent the enduring significance of the liberal arts to teacher education in this time of uncertainty, a time that poses challenges but also presents genuine opportunities for advancing our work.

Amelia El-Hindi Trail

Beyond Small and Nurturing: Tapping the Potential of Liberal Arts Teacher Education

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Abstract

A majority of the teacher education programs in this country reside in liberal arts institutions. Most pride themselves on the benefits from having small and nurturing programs with strong relationships with students and an emphasis on teaching. There are many types of preparation programs situated within liberal arts institutions and also a wide range of program quality. Understanding what constitutes a liberal arts teacher education program and how the liberal arts might distinguish or strengthen programs is not always clear or even considered by many liberal arts teacher educators. This article explores what constitutes the liberal arts and its fit with teacher education, offers suggestions about how to incorporate the liberal arts into preparation programs, and proposes ways for faculty to articulate the benefits of being educated in a liberal arts teacher education program.

Keywords: **teacher education, liberal arts**

What is a liberal arts teacher education program? According to Darling-Hammond and Cobb (1996), 65% of all teacher education programs are located in liberal arts colleges and universities; therefore, the question above, along with others concerning the benefits of such programs, pertains to the majority of teacher education programs in the United States. Within the teacher preparation community, we have explored the importance of liberal arts teacher education (e.g. Johnston, Spalding, Paden, & Ziffren, 1989; Butler, McDowell & Pittard, 2009; Hurley, 2011; Roose & Vande Zande, 2005) and why liberal arts teacher education is valuable in the wider education field (Bjork, 2007; Davis & Buttafuso, 1994) but we do not often explore how such programs are similar and different in areas central to good teacher education and critical for liberal arts teacher education.

Personally, these questions also matter. Throughout my career I have explored ways to bring the liberal arts into teacher education. I have worked in three different liberal arts settings, teaching a variety of courses including foundations, methods and supervision, and facilitating the revision of structures, goals and content of programs. In addition, I served on the Models of Excellence (MOE) Committee of the Association of Independent Liberal Arts Colleges for Teacher Education (AILACTE) that developed the four overarching standards of excellence known as the Qualities, including Quality III which focuses specifically on liberal arts as an integral aspect of teacher preparation. The goal of this committee is to help AILACTE members consider what constitutes best practice in teacher preparation and encourage them to go beyond minimal standards and set a higher bar for AILACTE programs. During the work of that committee, questions arose about different ways programs incorporated liberal arts, faculty members' understanding of the liberal arts, and the potential power of the liberal arts in teacher education programs.

In addition, while conducting a national interview study with teacher education administrators about reform in teacher preparation I noticed differences between programs, stimulating questions about the ways private liberal arts programs are similar to each

other and different from public university preparation programs and about critical differences between liberal arts programs. In 2013, I brought those questions to a national conference session on the liberal arts in teacher preparation and audio recorded and analyzed input from a group of twenty teacher educators who attended (Roose, 2013).

Working in these settings raised many questions about: (a) how institutional context impacts teacher education; (b) how faculty members understand the nature of the liberal arts; and (c) the different roles the liberal arts can play in teacher education programs. The goal of this article is to explore those questions. I will first focus on characteristics and contributions of being small and nurturing and then describe liberal arts in a preparation setting. Next, ideas will be offered about integrating liberal arts into our programs and articulating, for ourselves and others, benefits of being educated in a liberal arts program. Finally, issues that impede work to strengthen programs will be discussed.

Contributions of Being Small and Nurturing

The size of liberal arts institutions in the United States ranges widely, from less than 1,000 students up to 10,000, but in most instances teacher education programs are small. The number of full-time faculty members in liberal arts programs varies but is also small, usually between three and twenty (Kleiner, Thomas, & Lewis, 2007).

Due to the size and nature of their institutions, faculty members in liberal arts preparation programs usually have close and extended relationships with students. Although most liberal arts institutions expect research and scholarship from their faculty, they usually place an equal or greater emphasis on excellent teaching as a requirement for continued employment (Annapolis Group, 2013). This focus on teaching propels faculty members to be student-centered. Because faculty members typically are generalists and teach in various parts of the program, they might teach a foundation course, then a methods course and also supervise in field placements or supervise the student teaching experience. As such

faculty members work with students over time they see students' individual needs and growth. They know when to support, nurture and challenge their students. Relationship building is key (Roose & Vande Zande, 2005).

Furthermore, as generalists they often collaborate within their programs, thinking about how different areas of education intersect and overlap. Faculty members often work closely, informally and formally, with colleagues as they create programs, work on issues about students, problem solve, help each other out in classes and work on state and national accreditation issues (Roose, 2013).

Preparation programs at small institutions are often integral to and integrated with the rest of the college or university. Participants in the conference session reported that education faculty members participate in institutional committees and faculty meetings. Education faculty members, experienced with individual program accreditation and assessment, have been asked to help with overall institutional accreditation and assessment matters. Due to their size, smaller institutions often engage members of other disciplines to teach, for example, a children's literature course in the preparation programs (Roose, 2013). Size and a shared commitment to meet individual student needs are central defining characteristics for many liberal arts education programs, including many programs of AILACTE member colleges (Roose & Vande Zande, 2005).

Exploring the Liberal Arts

In addition to the factors of size and nurturing students, we need to consider a possibly more important quality, the liberal arts. Many preparation programs recognize the effect of liberal arts on their programs. AILACTE is the national group dedicated to liberal arts teacher education institutions, and AILACTE members can apply to earn a Models of Excellence Award in the liberal arts. In AILACTE publications, authors often explore liberal arts teacher preparation (e.g. Egeland & Eckert, 2012; Pittard, Butler, & McDowell, 2009; Warren, 1994) or argue for doing a better job within our settings (Dobbins, Justice-Crickmer & Thompson, 2008; Hurley, 2011). Yet, even within AILACTE, what constitutes a liberal arts preparation

program and how liberal arts might distinguish or strengthen programs is not always clear or even considered.

Before we look at where the liberal arts might be found in a preparation program we first need to understand how the liberal arts are defined in higher education. The Annapolis Group, a national organization of independent liberal arts colleges, describes their institutions as those that develop personal learning environments centered on serious and extensive interactions between students and faculty. That intimacy stems from small class sizes and a faculty that is dedicated to teaching. In addition, they state, "a liberal arts education is a way of knowing and living, an individualized process of growth focused on intellectual engagement and involvement that is deeply personal, highly communal and grounded in the development of critical and analytical thinking, effective and persuasive communication, and active and ethical engagement" (Annapolis Group, 2013). In liberal arts institutions, focus on gaining breadth and depth of major fields of study goes beyond simple subject matter mastery or acquiring expertise and is a launching point to help initiate students into becoming active learners open to exploration, curiosity, and discovery (Epstein, 2007). These processes and skills are at the heart of a liberal arts education and are critical for a liberally educated graduate and teacher to possess.

The liberal arts perspective toward content, skills, and attitudes can be found throughout a teacher education program–in their conceptual framework, courses and experiences, and assessment practices. Some programs incorporate the liberal arts viewpoint through the core liberal arts courses students have as requirements. These courses give students grounding in content such as math, philosophy, and history and also help them learn to think and write critically, analytically, and creatively. Through these courses, students are often introduced to deep disciplinary thinking, new views on gaining knowledge, and interdisciplinary exploration.

Although there is a national move away from focus on foundational work in teacher education (Liston, Whitcomb & Borko, 2009), most programs still have at least one course that approaches education from different disciplinary perspectives. Some programs'

methods courses also include liberal arts ways of approaching the practical. One participant in the national session said that even in his methods courses he introduces ways of thinking. "[A] very big part of my courses has been the history and philosophy of science, getting students to understand the scientific way of thinking. …I have to make sure that they can *do* science with young people" (Roose, 2013).

In a liberal arts teacher education program, the liberal arts ways of thinking, exploring, reflecting, creating and problem solving can be ubiquitous. This way of thinking is embedded in core courses and the general curriculum, in foundational education courses, methods courses, and field experiences. It is also central to assessment systems, and to how we teach as teacher educators.

How to Tap the Potential of the Liberal Arts in Our Programs

Teacher educators hold a variety of ideas about the liberal arts in their programs. In the national session, some educators stated they were grappling with defining "the liberal arts," teacher education's fit with the liberal arts, and also what a liberal arts licensure program could look and be like. Others pondered how to help colleagues understand that teacher preparation was a good fit with their institutions. Discussions also included helping students and those outside the institution understand the role and value of liberal arts in their programs and students' future teaching (Roose, 2013).

Thinking it Through Ourselves

A conference participant said, "I've been at one college for 14 years [and] that is exactly my question–are we a pre-professional program in a liberal arts college or are we a liberal arts program, in terms of teaching…. And I think we are wrestling with that and how to move it towards [being a liberal arts program]" (Roose, 2013). We can work in a preparation program in a liberal arts institution and not have a clear conception of what being a liberal arts program means. Programs may hire former K–12 teachers who have not studied or worked in liberal arts institutions before to supervise or

teach methods courses and they need to understand how a focus on liberal arts alters the ways supervision or teaching methods unfold. Even full time faculty may not have prior experience with liberal arts education. Faculty members cannot be articulate with students and others if they are not certain themselves what the liberal arts consist of and how they can be embedded in a program.

Suggestions for Self-Reflection and Change

A logical and critical step in self-reflection is to revisit (or develop) the program's conceptual framework, looking at the ideas and the language at the core of the program's grounding and philosophy. Is there liberal arts language about the process of learning in it? How is the idea of a "teacher leader" or "reflective practitioner" strengthened by connecting it to the liberal arts? How are the program's theoretical and philosophical foundations influenced by the institution's liberal arts tradition?

Within the framework, does the language there reflect the type of program the faculty wants to have? Conceptual frameworks can be part of accreditation documentation, referred to just for the accreditation process, or living, breathing documents that help faculty strengthen the foundational and methods/practice work in their programs. Some programs have developed double language—one that mattered to them, grounded in their beliefs and traditions, and one that translated their language into more standard accreditation wording to help accreditors be clear about what was happening within the program.

Language used in liberal arts programs differs from the efficiency, product-orientation accountability language now widely used in education. We see ourselves as educators, not trainers, and as preparers, not producers, of teachers. "[T]o regard the preparation of teachers as *training* rather than *education* reflects the view that teachers are only technicians or managers rather than morally engaged people who must be conscious of the political consequences of educational choices" (Beyer, Feinberg, Pagano, & Whitson, 1989, p. 131). Liberal arts language can help illuminate beliefs about teaching and learning that involve moral and political thinking.

Another idea for self-reflection is to revisit how the liberal arts help teachers view ideas and concepts from different perspectives. Each discipline has its own vocabulary, register and domain—a specific way of knowing and thinking about a topic. Pre-service teachers will introduce those subjects to their students, so faculty members can support that initial learning through their own understanding of what the liberal arts core teaches and help students connect those ways of knowing with their students' learning and teaching. Faculty might ask themselves—how do we integrate critical, creative, disciplinary and interdisciplinary thinking into our programs?

When teachers face school issues or problems they need to use various disciplinary lenses to understand the setting and needs more completely. What are the social and developmental needs of the students? How do sociological and economic backgrounds relate to this issue? What moral and ethical considerations are central or tangential to the issue? What historical school and community factors impact this issue? As faculty members become more adept in thinking and speaking of education as an interdisciplinary field of study, they better help students think about and problem solve in the complex, multi-perspective settings of schools.

Now many programs integrate some type of fieldwork within every course. A next step might be to connect practical work with liberal arts processes. One session participant described ways to embed those processes into practice teaching, methods courses, and courses on curriculum.

> Each aspect of the teaching process is examined systematically using the inquiry approaches that characterize other areas of the students' liberal education. Hypotheses testing, problem solving and decision making—all critical for effective practice—are combined with research findings, experiential data and intuition to develop individuals who engage in teaching both as an art and as a science (Roose, 2013).

Some educators are experienced in verbalizing about and

incorporating the liberal arts in teacher education. Others can learn more about those connections through focusing on their own professional and intellectual development—by attending liberal arts teacher education conferences, reading, learning anew or touching base with liberal arts content knowledge and processes, and bringing in experienced educators from admired programs as consultants.

Including the Students

Just because students attend a liberal arts institution does not mean they understand how liberal arts play out in teacher education. The education students can even work against a liberal arts perspective because they want to focus only on practical survival tips for their teaching, and what they need to do tomorrow. They also may come to education thinking that it is an easy field and that people are born teachers; that they love children and that caring is what children and youth need. They may believe they know their content and that is all that matters. They need to be educated in the complex ways of learning and teaching.

The liberal arts curriculum helps them broaden their thinking about learning and teaching, but the preparation program must also make this learning more visible and explicit so students recognize how liberal arts skills and perspectives will help them be stronger teachers.

> [F]ew students understand it is not just the depth and breadth of content preparation that is important but the critical thinking, creativity, and problem solving—what we refer to in our program as "the intellectual tools" of the liberal arts and how you use those tools. By the time they complete the program, [they are ready] to develop and critique education thought—[not] just going out there to be a purveyor of knowledge for K–12 students, but…the next teacher leader (Roose, 2013).

In the interview study, adding rigor and raising expectations was a reform focused on by the teacher education administrators.

Several spoke about moving their programs beyond being mothering and nurturing to ones in which students were more intellectually challenged. David Berliner, an articulate defender of teacher education, speaks of his own dissatisfaction of the lack of complex work often required of students in teacher education methods courses.

> [O]ur students are among the better ones in the universities, as measured by course grades . . . and we know also that they possess high levels of literacy skill and high IQs. But even with those qualifications, pre-service teachers do not ordinarily get the weekly reading loads that are required of literature majors . . . [or] ordinarily get to interpret the primary documents of their field, as history majors do. They do not ordinarily get extra time every week in a laboratory for teaching and learning, which could serve the same function as a laboratory does in physics or biology. . . [or] ordinarily get the case-based instruction that business majors do, despite the fact that case knowledge is the basis for expertise in teaching. I am afraid that here I join the critics. I do not believe that we stretch our students intellectually as we should, or in ways in which they are capable (Berliner, 2000, p. 364).

Perhaps because K–12 education now often seems to equate the idea of rigor with endurance through continually giving teachers an overwhelming number of tasks to complete, teacher educators may also fall into the trap of thinking that more assignments, rather than more rigorous work, means high expectations, inadvertently embodying Berliner's accusation.

Helping students become keen thinkers and problem solvers will support them as they move into the world of K–12 education where they will be faced with complex educational, political, social and ethical issues on a daily basis and will need to be experienced in understanding the scope and depth of these problems and in solving them.

The key curricular challenge for teacher educators in

> liberal arts institutions, it seems, is to develop intellectually rigorous courses that integrate broader content and critical thinking skills (hallmarks of a liberal arts education) with practical, hands-on pedagogical training (Roellke & Rice, 2007, p. 171).

Suggestions and Questions

A way to help bring liberal arts thinking skills into courses is to have faculty discussions about what makes an assignment demand more analysis, problem solving, integration, creativity and other critical-thinking skills on the part of the students. The faculty might think about how lesson planning can involve intellectual flexibility. Thinking about curriculum as "coherent plans and objectives is important, [but] they must encompass rather than threaten a conception of curriculum as emergent, responsive and flexible" (Cook-Sather, Lesnick, & Cohen, 2009, p. 13). Having a capstone experience during or after student teaching that allows students to have "an opportunity to connect their experiences back into the world of ideas and the bigger picture" (Roose, 2013) could also help strengthen liberal arts thinking, especially in relation to daily practice. And faculty might develop language based on institutional liberal arts language to help students understand the relation between teacher preparation and the liberal arts core.

Faculty members can help students apply liberal arts habits of mind when the students feel they are restricted within their placements and future practice. How do the liberal arts and their habits of mind contribute to the practical forms of reasoning once pre-service teachers leave college? What does that intersection look like when teachers use problem solving in their K–12 settings? Have students practice problem solving about limits they experience in their student teaching, going beyond complaining about restrictions to naming and employing the liberal arts' habits of mind that can help them move forward in problem solving (Roose, 2013).

Educating Arts and Sciences Colleagues

In some institutions, educators sense a lack of knowledge about

teacher education. Liberal arts and sciences colleagues may regard teacher education as just pre-professional work, or teacher training. Although they respect education colleagues, they may lack understanding about teacher preparation and especially its relationship to the liberal arts tradition. The dominant critique of teacher education present now in state and national conversations can reinforce negative views. It is crucial for educators to have conversations across campus about language, emphases and goals, making links between liberal arts core and major courses and those in education.

Suggestions for Educating Colleagues

Teacher education faculty might communicate across campus about why core and major content courses of colleagues are central to the teacher education program and how they support the development of the liberal arts skills needed to be a good teacher. Liberal arts courses throughout the curriculum support teacher education in helping to develop in pre-service teachers skills and perspectives such as "logical and critical thinking skills, analytic abilities, aesthetic judgment, interpersonal sensitivity, historical and political awareness, and ethical commitment" (Travers & Sacks, 1989). Strong preparation programs build on what students learn elsewhere in the institution. Liberal arts colleagues need to know how those traits translate into K–12 practice and that they are appreciated for the work they do.

Teacher education faculty might think about ways programs can connect more with the general college curriculum. Some educators have worked with their institutions' curriculum committees to designate education courses to fulfill core requirements, highlighting that liberal arts courses are taught within teacher preparation programs. This "double-dipping" or "cross-pollination" also helps show the college how integral liberal arts are to teacher preparation (Roose, 2013). Instructors of foundational courses might interview members of science, social science and humanities departments to learn about latest research and thinking in those areas that impact teacher preparation.

Faculty members might also think about cultivating liberal arts

and sciences colleagues who have an interest in teacher education or pedagogy. One program's course on learning and teaching had students interview favorite arts and sciences professors about their pedagogy. Many faculty members had never or rarely talked about their teaching and found the interviews challenging and rewarding. They experienced probing interdisciplinary questions and connection making. Students learned more about content pedagogy and professors more about education, liberal arts, and the intellectual caliber of education students.

A final suggestion involves institutional assessment. During institutional accreditation work, teacher education faculty might serve as meaningful resources for the rest of the institution about student learning goals and how they are grounded in the liberal arts.

The Outside World

External forces, pressures, leverages, language and accountability measures presently dominate the world of teacher education. Higher education programs are often cast in a negative light. Teacher education based on technical proficiency and efficiency views and deregulation is the prevailing vision of where teacher preparation needs to head. These ideas are often at odds with the goals of developing liberally educated teachers. The technical model of education "disregards vital information that places at risk certain principles, preferences and convictions which liberal arts institutions find important.…While…programs certainly do not neglect planning, they try not to allow the efficiency and technical aspects of planning to override, replace or interfere with the ambiguous, complex and dynamic side of actual human exchange in and out of classrooms" (Brulle et al., 2009, 30-31).

Suggestions for Educating the Outside World

Revisiting program goals and language might help clarify what program faculty mean by liberal arts preparation before there is any communication with people outside their programs. Faculty might use the scholarship about liberal arts teacher education (e.g. Bjork et al., 2007; Kimball, 2013; and Miller-Lane & Affolter, 2011) to

help communicate about good teacher education and its importance. As Brulle and colleagues say, "As liberal arts institutions, it is incumbent upon us to state clearly what we do that is different and why what we do is a significant contribution to the education endeavor. If we cannot do this, then we may as well fold up shop…" (2009, p. 41).

Issues and Conclusions

In the national conference session a participant summed up the reality of what many teacher educators face. "You get bogged down in the demands of teacher preparation and you know [you need to] work with your arts and sciences folks but you don't always have those conversations" (Roose, 2013). Workloads that keep us from reflecting on and reviewing our programs and connecting the liberal arts with our students, institutional colleagues, and outside educators may partially result from the time and energy we commit to relationship building with public school colleagues and the nurturing of students, in addition to the institutional demands of teaching, research, and community service. Our work is intensified as well by the many demands, some believed less useful than others, of state and national accreditation (Johnson, Johnson, Farenga & Ness, 2005). We need to acknowledge these constraints and also employ the liberal arts traits we want our graduates to develop (self-reflection, communication, problem solving, critical thinking and creativity) to help our programs incorporate more of the power of the liberal arts.

Schools need "pre-service teachers who are broadly educated, have a strong command of content knowledge and pedagogy, and who are…active learners, critical thinkers, problem solvers, decision makers, and risk takers" (Quality III: Liberal Arts, AILACTE Models of Excellence, cited in Roose & Vande Zande, 2005, p. 5). These characteristics will hold them in good stead as they become practicing teachers.

> More than anything else, public school teachers must be able to exercise judgment, to think critically and

> reflectively about the nature and conditions of their work, to continue intellectual engagement with others as part of their professional identity, and to deal with the complexities of an environment that frequently places a number of stresses on their time and energy—stresses that are due in no small measure to the political and ideological cross-currents in which…schools are placed. Teachers need the very orientations and habits of heart and mind that are prized by spokespersons for the liberal arts (Beyer et al., 1989, p. 116).

We hope all liberal arts institutions have strong viable teacher education programs that strive to embody the ideals of the AILACTE Models of Excellence award and help develop in their students the habits of heart and mind urged by Beyer et al. But realistically, there are many types of programs situated within liberal arts institutions and there is also a range of program quality. By having conversations and critical reflection about the inclusion of the liberal arts we can support all our institutions in becoming better at helping develop K–12 teachers who have traits central to a quality liberal arts program. For our own congruence working in liberal arts preparation programs and for the benefit of the K–12 students our graduates will teach, tapping the potential of the liberal arts is essential.

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Responding to edTPA: Transforming Practice or Applying Shortcuts?

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Abstract

Some states have used new teacher performance assessments in an attempt to improve teacher quality for more than two decades. New teacher performance assessments include performance expectations, scoring rubrics, and writing prompts, which are organized into subject-specific handbooks. Teacher candidates completing performance assessments assemble portfolios comprised of teaching artifacts and writing commentary. Early performance assessments focused on growth and professional development. EdTPA is the newest teacher performance assessment and it has been adopted by 24 states. Unlike previous new teacher performance assessments, stakeholders at various levels are using edTPA for credentialing and accountability purposes. The high-stakes features of edTPA may encourage use of strategies misaligned with the goal of improving new teacher effectiveness. Results from a case study show that candidates can apply strategies for earning points on edTPA. Although many of the strategies are connected to educational theory and practice, others are meant to earn points and simplify portfolio assembly.

Keywords: **edTPA, performance assessment, reform, strategies, teacher education**

Many teacher educators are familiar with Teacher Performance Assessment or TPA. However, a fact less well known is that this acronym has been part of educational literature for more than 25 years. Reinhartz and Van Cleaf (1986) used it as an abbreviation for *Teach-Practice-Apply*. Back then, TPA supporters claimed it as a new paradigm for "facilitating change" and "ensuring instructional effectiveness" (Reinhartz & Van Cleaf, 1986, p. 7). The TPA created by Reinhartz and Van Cleaf has come and gone, but it shares an important similarity with the TPA of today. Namely, supporters of both models claim that TPA has the potential to transform teaching.

According to advocates, TPA is "transformative for prospective teachers because the process requires candidates to actually demonstrate the knowledge and skills required to help all students learn in real classrooms" (edTPA, n.d.a). Others have suggested that TPA is the "closest we can come to a complete model of what good teaching looks like" (Renner, n.d.). Strong claims about the virtues of TPA, rebranded as edTPA to emphasize its educative qualities, are perhaps one reason it is being pilot tested in 24 states with plans to expand nationwide by 2015 (National Association of Secondary School Principals, 2011). Whether edTPA is adopted as a national test of new teacher competence remains to be seen. However, the assessment is widespread and some states are planning to include edTPA scores as a qualification for licensure.

Use of edTPA for credentialing is certain to have a significant impact on teacher candidates. However, there may be more implications for liberal arts colleges of teacher education. Liberal arts education emphasizes the importance of individuals, community, and shared responsibility. EdTPA is a standardized performance assessment and standardization deemphasizes individual variation to promote conformity according to external performance expectations. However, surveying the history of new teacher performance assessments suggests that they were designed for both credentialing and professional growth purposes.

Development of New Teacher Performance Assessments

One of the first teacher performance assessments was Beginning Educator Support and Training (BEST). BEST was developed in Connecticut in 1986 as part of a broader effort to improve teacher quality (Kellor, 2002). BEST requires assembly of a teaching portfolio by newly licensed teachers according to performance expectations, scoring rubrics, and writing prompts, all of which is outlined in subject-specific handbooks. One portion of the portfolio includes teaching artifacts such as lesson plans, video recordings, and student work samples. Another portion of the portfolio includes reflective commentary for analyzing teaching and learning (Kellor, 2002). In the BEST system, scorers generate comprehensive feedback reports for use by teachers in identifying areas for growth, along with suggestions for professional development.

In 1998, legislators in California also initiated reform efforts designed to improve teacher quality (Okhremtchouk et al., 2009). The steps taken in California were similar to those taken in Connecticut except that California legislators also focused on improving teacher preparation. Reform activities in California led to the creation of the California Teacher Performance Assessment (CalTPA) and Performance Assessment of California Teachers (PACT).

CalTPA was created by a consortium of California universities and is also organized around performance expectations, scoring rubrics, and writing prompts (California Commission on Teacher Credentialing, 2008). However, instead of a portfolio, CalTPA requires assembly of four tasks focused on planning, instruction, assessment, and reflection. CalTPA also includes pre-made practice opportunities in the form of case studies. These case studies are used by teacher preparation faculty to assist candidates in assembling the four tasks (California Commission on Teacher Credentialing, 2008).

PACT is the latest and most relevant performance assessment with respect to edTPA since edTPA is modeled after it (Darling-Hammond, 2010). However, the link between these two assessments transcends similar content. PACT was created by a

second consortium led by Stanford as an alternative to CalTPA (Okhremtchouk, et al., 2009). The Stanford Center for Assessment, Learning and Equity (SCALE) would later transform PACT into edTPA and recruit Pearson Incorporated as its operations partner. One feature underlying this history is that CalTPA was developed in cooperation with the Educational Testing Service (ETS). Both ETS and Pearson compete for market share in the area of standardized test administration (Public Broadcasting Service, 2002).

Similar to PACT, candidates completing edTPA assemble a portfolio. The portfolio is organized according to performance expectations, scoring rubrics, and writing prompts. Directions are outlined in subject-specific handbooks, which are divided into three tasks focused on planning, instruction, and assessment. There are 15 rubrics, with five levels each, equally divided between the three tasks. Portfolios generally consist of three to five lesson plans, 15 to 20 minutes of video, and work samples from three students. Candidates respond to prompts by writing approximately 30 pages of commentary to describe their knowledge of students, their use of subject-specific pedagogy, and analysis of student learning.

The transformation of PACT into edTPA has produced some interesting claims. For example, PACT rubrics are aligned to California's Teacher Performance Expectations (Chung, 2008). By association, edTPA is also aligned to California teaching standards, even though literature describing edTPA infers inclusion of standards from other stakeholders (edTPA, n.d.a). In addition, the American Association of Colleges for Teacher Education (AACTE) uses research from studies based on PACT to support the effectiveness of edTPA (edTPA, n.d.b). Although PACT and edTPA are similar, there are significant differences in administration which make application of research results from PACT to edTPA problematic.

One difference is that PACT handbooks and rubrics are available through an open website which does not require special permission to access (see http://www.pacttpa.org). In addition, PACT portfolios are scored locally by faculty, supervisors, and mentor teachers, who are trained at consortium schools (Stansbury, 2006a). Another difference is that teacher candidates completing PACT are

"encouraged to seek assistance, input and feedback from university supervisors, cooperating/master teachers, [and] university instructors..." as the portfolio is assembled (PACT Consortium, 2009, p. 25). In addition, PACT scoring policies state that the assessment is "designed to provide formative assessment information during the preparation program for use by the candidate, instructors, and supervisors for the purpose of improving the teaching knowledge, skill, and ability of the candidate" (Stansbury, 2006b, p. 1).

Alternatively, Pearson Incorporated (2013a) prohibits distribution of handbooks and rubrics through open sites. Those administering edTPA at institutions must ensure assessment materials are not shared with unauthorized persons. Portfolio scorers include teachers and teacher education faculty recruited and trained by Pearson using online methods. Portfolios are also scored online. In addition, edTPA administrative rules prohibit university instructors and supervisors from providing substantive feedback on portfolios before submitting them to Pearson for scoring. For example, instructors and supervisors are not allowed to suggest changes to commentary, use rubrics to provide analysis, or assist candidates with selection of video clip evidence (Pearson Incorporated, 2013a).

Incentives for Adopting edTPA

Changes in administration have been accompanied by other shifts in terms of why states adopt edTPA and the way that results are used. For example, scoring rubrics for the second phase of Race to the Top (RTTT) reward states for developing "effectiveness measures" which link K–12 student test performance to teacher education programs (United States Department of Education, 2012, p. 6). Additional criteria on RTTT rubrics infer that state authorities will use performance assessment results to sanction teacher education programs (United States Department of Education, 2011). In addition, some reformers envision edTPA as the first layer of a progressive evaluation system for tracking competence throughout a teacher's career by correlating performance assessment results with student test scores (Darling-Hammond, 2010).

Along with RTTT, incentives for adopting new teacher assessment schemes were predicated on legislation included in the American Reinvestment and Recovery Act (ARRA) of 2009. States electing to receive ARRA funds after the most recent recession agreed to develop and maintain teacher preparation accountability measures and elaborate K–12 student data tracking systems (United States Department of Education, 2009). Grants awarded through ARRA prepared states for phase two of RTTT, strengthening the link between new teacher education, performance evaluation, and K–12 test achievement.

Influential professional organizations have also advocated for teacher performance assessments. For example, AACTE promotes edTPA to establish one assessment model for defining new teacher competence and also to counter criticisms that teacher training programs are ineffective (edTPA, n.d.c; Robinson, 2012). AACTE's support of edTPA aligns with policy statements from the American Federation of Teachers, National Education Association, and Council of Chief State School Officers. These groups have indicated the importance of creating new teacher recruitment, training, and induction systems to improve the profession and reduce potential exclusion from reform efforts (American Federation of Teachers, n.d.; Council of Chief State School Officers, 2012; National Education Association, 2013).

There is some evidence to show that the adoption of edTPA has been helpful in keeping stakeholder groups in the debate surrounding teacher preparation reform. For example, the National Council on Teacher Quality (NCTQ) rated teacher education programs across the United States, but neglected to incorporate performance assessment results, specifically results from edTPA (Darling-Hammond, 2013; Wallace, 2013). Groups involved in teacher training have identified this omission as a significant flaw (American Association of Colleges for Teacher Education, 2013). However, using edTPA results to counter groups like NCTQ has required a significant expenditure of time and resources for everyone involved.

Resource expenditures associated with edTPA are often first

discussed in terms of the price teacher candidates pay to have their portfolios scored, which is $300 for an entire portfolio and another $100 for individual task retakes (Pearson Incorporated, 2013b). One explanation for these fees is that test developers spend three to ten times more to create performance assessments in comparison to objective tests, which have traditionally been used for credentialing purposes (Stecher, 2010). The cost of edTPA to faculty and staff is more difficult to quantify. However, most agree that accommodating edTPA requires support through various methods such as course redesign and faculty training.

Using new teacher performance assessments as a method for improving teacher quality has become more complicated since Connecticut designed BEST more than 25 years ago. Competing interests at the state, federal, and corporate level have converged to influence development of edTPA in ways that are different from the design and implementation principles used for CalTPA and PACT. In addition, linking edTPA performance as a credentialing requirement and charging hundreds of dollars for a score may detract from the goal of improving teacher quality. There is some anecdotal evidence to show that the interplay of competing interests is having some negative effect already. For example, one faculty member involved in pilot testing edTPA stated that, "students have already learned to manipulate it... their answers are shaped by what the test requires" (Winerip, 2012).

Although there is limited evidence showing that teacher candidates are manipulating edTPA, there is evidence showing that high-stakes assessments in general influence student and instructor behavior in negative ways (Campbell, 1979; Haertel, 1999; Rouse, Hannawy, Goldhaber, & Figlio, 2013). Two examples of the negative effects of linking performance to consequences include narrowing curricula to focus on tested subject matter and coaching students to use boilerplate answers (Rouse et al., 2013; Williams, 2009).

Exploratory Case Study

The effects of edTPA on new teacher competencies are relatively unknown, unless research using PACT is considered. This means

that determining the positive and negative effects of edTPA is a topic future researchers will need to investigate. However, one question underpinning this research is whether edTPA scores can be positively influenced using specific strategies. The exploratory case study that follows investigates this question by examining similarities and differences between high-scoring and low-scoring edTPA portfolios.

Participants in the study included 57 female and 17 male teacher education candidates enrolled in three programs at the same university. All participants created an edTPA portfolio and submitted them for scoring to Pearson Incorporated during the same academic quarter. Although candidates received some training on edTPA, portfolio evidence and commentary was developed independently by each candidate, according to administrative procedures defined by Pearson Incorporated (Pearson Incorporated, 2013a).

Forty-one of the participants were enrolled in a graduate program and 33 were enrolled in an undergraduate program. Graduate candidates were in either a one-year or a two-year track, with a 38 or 14 week internship, respectively. The education component of the undergraduate program is four academic quarters, with a 20 week internship. Table 1 shows a summary of participant and program characteristics.

Table 1
Participant and Program Characteristics

Track	n	Male	Weeks of Internship
Graduate One-Year	29	10	38
Graduate Two-Year	12	4	14
Undergraduate	33	3	20

Participants in this study completed edTPA portfolios in a variety of subject areas. However, three subject areas were disproportionately represented either by graduates or undergraduates. These areas included elementary literacy and mathematics, with 21 of the

27 portfolios coming from undergraduates, along with secondary mathematics and science, with 15 of the 18 portfolios coming from graduate students. Table 2 shows a summary of subject area portfolios according to each of the three program tracks.

Table 2
Distribution of Portfolio Subject Areas and Performance

		Graduate				
	n	One-Year	Two-Year	Undergraduate	Mean	SD
Elementary Literacy	16	3	2	11	3.18	.47
Elementary Mathematics	11	1	0	10	3.15	.42
Performing Arts	5	2	1	2	3.24	.47
Secondary English-Lang. Arts	13	5	5	3	3.08	.47
Secondary History-Soc. Studies	7	2	3	2	3.00	.27
Secondary Mathematics	5	3	0	2	3.12	16
Secondary Science	13	11	1	1	3.31	.33
Visual Arts	3	1	0	2	2.40	.72
World Languages	1	1	0	0	2.20	—

Participants received 15 scores from Pearson Incorporated several weeks after submitting their portfolios. These scores corresponded to the 15 rubrics included in edTPA subject-specific handbooks. Each rubric has five levels, labeled one to five, and each of the three tasks is assigned five rubrics. In addition, the evidence used for generating scores is specific to the task. For example, the planning task depends on lesson plans and the planning commentary, while the instruction task depends on video clips and instruction commentary. Although rubrics vary slightly between subject areas, they generally assess the same performance expectations. A brief description showing sources of evidence and general performance expectations for each rubric is presented in Table 3.

Table 3
Summary of Performance Expectations and Sources of Evidence for edTPA Rubrics

Task	Sources of Evidence	Rubric Performance Expectation
Planning	Lessons Plans Planning Commentary	1. Learning targets build on each other 2. Activities aligned with learning targets 3. Knowledge of students to plan instruction 4. Activities to teach academic language 5. Multiple assessment to monitor learning
Instruction	Video Clips Instruction Commentary	6. Positive classroom environment 7. Students engage with subject matter 8. Candidate deepens student engagement with subject matter 9. Use of subject-specific pedagogy 10. Candidate proposes specific improvements to instruction
Assessment	Student Work Samples Assessment Commentary	11. Analysis of assessments for whole class and individuals 12. Feedback provided to students 13. Students use feedback to revise 14. Evidence showing student use of academic language 15. Candidate proposes specific steps for whole class and individuals

Most edTPA scores across subject areas were similar, with three exceptions. Portfolios in secondary science scored somewhat higher in comparison to other subject areas, while portfolios in visual arts and world languages scored somewhat lower in comparison to other subject areas. Table 2 summarizes mean scores across the 15 rubrics by subject area.

The initial analysis of edTPA scores produced interesting results, especially when comparing subject area performance. However, the purpose of the case study was to compare similarities and differences between high-scoring and low-scoring portfolios as a way to identify strategies for earning points.

The first step for identifying strategies was to rank all 74 portfolios according to their individual mean scores calculated across the 15 edTPA rubrics. Descriptive statistics showed an mean score of 3.12 and standard deviation of .45. The maximum mean score was

3.9 and the minimum score was 1.8. Ranking portfolios by average scores showed that five graduates and five undergraduates comprised the top 10 scores, while six graduates and four undergraduates comprised the lowest 10 scores.

Analysis of high-scoring and low-scoring portfolios was further narrowed to the top five and bottom five portfolios. The top five portfolios showed an average rubric score of 3.82 with a standard deviation of .08. The bottom five portfolios showed an average rubric score of 2.14 with a standard deviation of .22. Results comparing high-scoring and low-scoring portfolios are shown in Table 4.

Table 4
Comparison of High-Scoring and Low-Scoring Portfolios

	N	M	SD	Maximum	Minimum
High-Scoring	5	3.82	.08	3.9	3.7
Low-Scoring	5	2.14	.22	2.4	1.8
Total	74	3.12	.45	3.9	1.8

Once five high-scoring and five low-scoring portfolios were identified, they were analyzed for similarities and differences. Although each portfolio included unique features, some trends were observed which could be translated into strategies for earning points on edTPA rubrics.

General Strategies

Minimum number of lessons. Although candidates may include up to five lessons in a portfolio, the minimum is three. Most high-scoring portfolios included the minimum number of lessons, which likely reduced the amount of time spent planning and teaching for edTPA and perhaps increased the amount of time available for writing commentary.

Maximize commentary page limits. High-scoring portfolios also showed more pages of commentary. The average number of pages included in the planning commentary of high-scoring portfolios was 10.8. Alternatively, the average number of pages

of planning commentary for low-scoring portfolios was 5.6. This pattern of high and low page counts repeated across the instruction and assessment commentaries.

Concise writing. Including the maximum amount of commentary pages was insufficient for earning a high score. Effective commentary writing needed to be analytical and concise, with frequent reference to lesson, video, and student work sample evidence. For example, one top scoring portfolio included the following description, "The central focus for this learning segment is, 'Students will identify and describe patterns in multiples of 5 and 10 to count and add within 1000.'" Alternatively, one low-scoring portfolio showed, "The students learn and apply the vocabulary of different clothes that we are learning while using and practicing this with a variety of exercises, both spoken and written, in class."

Strategies for Planning

Carefully authored learning targets. Attention to carefully authored learning targets was another characteristic of high-scoring portfolios. Effective targets included one measurable objective and the targets showed a clear connection to one another between lessons. For example, the learning target from a high-scoring portfolio showed, "Students will count by 5s and describe two patterns in multiples of five." However, learning targets for low scoring portfolios were complicated, non-measurable, and disconnected from one lesson to the next. The learning target for one low-scoring portfolio showed, "Know that art is a form of communication; Learn about the how [sic] sculptor Auguste Rodin's life and work; Use gesture line to communicate motion or emotion."

Linking learning targets to academic language. Referencing learning targets to address academic language requirements was another feature common to high-scoring portfolios. This meant including one to three subject-specific words and identifying the verb in the target as an element of the language function. For example, one candidate wrote, "the language function 'describe' is present in all three of my lessons, and is embedded in all three learning targets."

Strategies for Instruction

Scripted interactions. Characteristics of high-scoring instruction videos showed candidates asking specific questions of students, often working from a script to structure interactions. Successful candidates referenced the learning target often and used simple activities like think aloud, show of hands, and pair share to engage students in self-assessing their progress toward meeting the target. The proportion of talk time between candidate and students was at least equal on high-scoring videos. When direct instruction was shown, it was broken into two to three minute segments and followed by opportunities for student talk, in the form of review or formative assessment.

Activities to emphasize learning targets. Low scoring portfolios showed candidates neglecting the learning target, or delivering direct instruction without student interaction. In addition, questions presented to students were unstructured and disconnected from the learning targets. Video evidence also emphasized classroom management and showed minimal student interaction with subject matter.

Strategies for Assessment

Pre-assessment and post-assessment. Most high-scoring portfolios included a pre-assessment and post-assessment as bookend activities to the lesson sequence. Inclusion of the pre- and post-assessment model provided a structure for analyzing the performance of individuals and the whole class. For example, some portfolios calculated gain scores or in some other way showed change in student understanding over time using pre- and post-assessment results. However, in order to maximize the benefits of this method, results of the assessment needed to be thoroughly described in the assessment commentary.

Assessment and work sample. Another method shown in high-scoring portfolios was use of the assessment as the student work sample. Although edTPA portfolios permit separation of the assessment from the work sample, candidates may choose to combine these requirements. Overlapping the assessment with

the work sample increased opportunities to connect planning and assessment tasks, as well as analyze outcomes across the lesson sequence. Similar to the strategy of including the minimum number of lessons, using the assessment as the work sample decreased the number of portfolio elements that candidates had to manage.

Characteristics of feedback. High-scoring portfolios also included handwritten feedback on the work sample, along with a response from the student showing corrections. Additional qualities of the feedback described student performance in terms of strengths, weaknesses, and identification of resources for getting help. Low scoring portfolios showed one or two of these features, such as check marks indicating a correct response or a question posed to the student that was left unanswered.

Conclusion

Some of the strategies identified from the portfolios in this case study can be connected to educational theory and practice. For example, carefully authored learning targets, pre- and post-assessment, and feedback are accepted teaching practices. Alternatively, other strategies are disconnected from educational theory and practice, such as maximizing commentary page limits, scripted interactions, and overlapping the assessment with work samples. These strategies are meant to earn points and simplify portfolio assembly. Although they do not violate edTPA administrative policies, they are misaligned with the goal of improving new teacher effectiveness.

It is unsurprising that some confusion and misalignment surrounds edTPA since various stakeholders have been involved in its design and implementation. One example of this is the use of financial incentives by the federal government to encourage states to adopt edTPA as an accountability measure. Another example is the fee candidates are charged to have their portfolios scored. Yet another example is the shift to more restrictive policies in terms of candidates receiving help for assembling their portfolios before submitting them for scoring.

The use of edTPA for teacher preparation reform should also

be considered in comparison to research dealing with high-stakes testing in general. There is evidence to show that linking performance to consequences can result in negative outcomes. There is little reason to believe that teacher candidates, or their instructors, will avoid all of the deleterious effects associated with high-stakes assessment. Indeed, analysis from the case study presented here suggests that strategies indicative of test-taking shortcuts may be helpful in earning points on edTPA.

Many involved in teacher education find the circumstances surrounding adoption and implementation of edTPA disconcerting. Those involved in teacher preparation at liberal arts institutions may find these circumstances entirely misaligned with their beliefs about schooling and education. Nevertheless, reform of teacher preparation is well underway and edTPA will surely be a significant part of this process.

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Developing Benchmarks to Measure Teacher Candidates' Performance

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Abstract

This paper traces the development of teacher candidate benchmarks at one liberal arts institution. Begun as a classroom assessment activity over ten years ago, the benchmarks, through collaboration with professional development school partners, now serve as a primary measure of teacher candidates' performance in the final phases of the teacher education program. The benchmarks are research-based and align with InTASC principles, the university mission, and the departmental conceptual framework. The benchmarks reflect the developmental stages of the novice teacher at three levels: Beginning, Transitional, and Program Completion. Benchmarks provide guidance to candidates, mentors, and supervisors about what is expected at each of the three points of internship. Uses and benefits are discussed.

Keywords: **benchmarks, performance assessment, pre-service**

Teacher education at Mount St. Mary's University (MSM) is grounded in a common intellectual experience that spans four years. The core curriculum integrates the liberal arts with study in the major. As a part of the education major, teacher candidates complete two internships [i.e., 100 days in a professional development school (PDS)] as second semester juniors and first semester seniors. Internship I includes 25 days in schools and accompanies methods coursework. Internship II requires full-time teaching in schools and begins the first day that teachers report to school for the new academic year. The MSM internship sequence provides many benefits to teacher candidates, but starting as it does in January it contributed to some uncertainty for mentors (those teachers who coach and support teacher candidates during internships) and supervisors (university faculty who observe teacher candidates and provide evaluative feedback and encouragement) in our early days of PDS.

Mentors year after year and across PDS sites lamented the "too general" and "vague" language of the education department's internship assessments based on the Interstate New Teacher Assessment Support Consortium (INTASC), now the Interstate Teacher Assessment Support Consortium (InTASC) principles. To address these concerns, supervisors and mentors brainstormed indicators of effective teaching for each INTASC principle. These were collated and included in the Internship Handbook to serve as a reference when completing the internship assessments. However, during regular mentor meetings in one PDS, uncertainty about what was expected at various points within the internships, particularly at the start of Internship I, remained a concern despite the ancillary resource. Both supervisors and mentors seemed clear about what the final outcome would be (i.e., what makes an effective teacher) at the conclusion of Internship II, but were unsure about what was "standard" acceptable performance at the beginning of Internship I or II. Today's MSM Benchmarks reflect ten years of development and reflection on this dilemma.

Literature Review

In today's accountability-driven educational environment much has been written about the alignment of teacher standards to content standards (Sandholtz & Shea, 2012), and the need for standards to guide teacher education and teaching practices in K–12 schools [e.g., InTASC, National Council for the Accreditation of Teacher Education (NCATE), National Board for Professional Teaching Standards (NBPTS)]. Standards of practice and performance inform the work of teacher education and support the evaluation of coursework and clinical practices (Danielson, 2007).

Though policy discourse supports varied approaches to effective teaching and teacher preparation, most agree that subject content knowledge plays a prominent role. Teaching pedagogies, understanding of learners and their development, accountability and assessment, communication and participation in professional communities, reflection, professional ethics, classroom management, and leadership are also key to effective teaching (Brouwer & Korthagen, 2005; Danielson, 2007; Hollins, 2011; InTASC, 2011; Sandholtz & Shea, 2012). These are multifaceted and complex competencies to acquire. To support novice teacher development, education programs couple coursework with clinical practice. Brouwer and Korthagen (2005) found, in a longitudinal study spanning over four years and including 357 students, 128 cooperating teachers, and 31 university supervisors from 24 graduate programs, that gradual increases in teaching complexity supported teacher candidate development. During the novice teacher developmental timeline, it is incumbent on teacher educators to provide teacher candidates with feedback to support professional growth.

According to Hattie and Timperley (2007) "feedback is a consequence of performance" (p. 81) and is needed to help learners "fill the gap" between current and desired understanding. Winne and Butler (1994) define feedback as "information with which a learner can confirm, add to, overwrite, tune, or reconstruct information in memory, whether that information is domain knowledge, meta-cognitive knowledge, beliefs about self and tasks, or cognitive tactics and strategies" (p. 5740). Feedback that is meaningful

occurs in context (Hattie & Timperley, 2007). When teachers help learners set specific goals at appropriately challenging levels and include criteria for success, student learning is supported (Hattie & Timperley, 2007). Therefore, feedback and assessment are inherently intertwined.

Assessment is often defined as an activity to evaluate student proficiency, but it is also a tool used to generate the information needed to provide feedback (Hattie & Timperley, 2007). A formative assessment is used for improvement and provides information about a learner's strengths and weaknesses (Keefe & Eplion, 2012; Frohbieter, Greenwald, Stecher, Schwartz, & National Center for Research on Evaluation, 2011; Yorke, 2003). Formative assessment can occur before, during, or following instruction (Keefe & Eplion, 2012) and is more frequently used than summative assessment (Black & Wiliam, 2009). According to Black and Wiliam (2009) formative assessments can also be used to support remediation. Yorke (2003) views formative assessment as a dialogue between teacher and learner to improve the learner's abilities. Feedback is central to formative assessment and requires evaluators to have knowledge of the goal or standard for achievement. Summative assessment is often equated with the final exam. Summative assessments provide cumulative judgments about individual achievement and are more infrequently used (Black & Wiliam, 2009; Frobieter et al., 2011; Keefe & Eplion, 2012; Taras, 2010). Feedback is provided, but in many cases is not intended to provide information to alter immediate actions. Teacher education necessarily relies on formative and summative assessments.

Defining Benchmarks

Benchmarks are a type of assessment. They can be used for formative and summative evaluation. The term "benchmarks" refers to "behaviors that typify certain stages of achievement or development" (Cooper & Kiger, 2001, p. 515). In teacher education, benchmarks communicate expectations and ground assessment practices during teacher internships. MSM Benchmarks are used as reference points for teacher candidate performance and development at three

varying levels, across five distinct benchmark components.

MSM Benchmark Development

In the course "Reading Assessment and Intervention," one of the authors, PDS Coordinator at the time and instructor of the course, used *Literacy Assessment: Helping Teachers Plan Instruction* (Cooper & Kiger, 2001) as the core text. Cooper and Kiger discuss assessing literacy learning across five stages of development, and for each stage they provide a detailed list of benchmarks for three literacy components: oral language, reading, and writing. Students in "Reading Assessment and Instruction" were seniors in their final semester. They had completed their internships the previous two semesters. To help students understand the process of developing benchmarks so as to appreciate and better understand the literacy benchmarks of Cooper and Kiger, the instructor posed this query to students: Are there stages of development for teacher candidates moving through MSM's internships? Could the class create benchmarks for MSM's teacher candidates?

The class analyzed the structure of the benchmarks developed by Cooper and Kiger (i.e., five stages with three components per level) and decided the teacher candidate benchmarks would have four stages: Beginning of Internship I, Conclusion of Internship I, Beginning of Internship II, and Conclusion of Internship II. The class began with the end in mind. Teacher candidates discussed the types of feedback shared during Internship II final conferences (referencing documentation) and reached consensus regarding statements about what every candidate should know and be able to do upon the completion of Internship II. Candidates shared what was expected of them in the components of planning, assessment, management, instruction, professionalism, and differentiation. The class also consulted the MSM Internship Handbook and INTASC principles for indications of end point expectations, and added additional expectations to the list of teacher behaviors.

In another class period the class sorted the statements, and grouped related items, resulting in six components of teacher candidate effectiveness. Candidates worked in groups to develop

indicators for each benchmark. They crafted benchmark statements to convey what can be expected of a novice teacher candidate in the six components. Groups presented their work to classmates and this helped to focus discussion on measureable achievement at distinct points across Internships I and II. A teacher candidate at the beginning of Internship I would be expected to "become familiar with aspects of managing the classroom" in the management component and by the end of Internship I be expected to "maintain classroom management."

Draft benchmarks were inserted into the Internship Handbook as another ancillary resource to better communicate performance expectations to candidates, mentors, and supervisors. Response to the draft benchmarks was positive, launching the collaborative revision process that lead to the benchmarks in use today. One major revision was derived from discussion during professional development sessions focused on helping mentor teachers understand the stages of development for a teacher candidate. Participants observed that though some maturity occurred between the end of Internship I and the beginning of Internship II, in terms of teacher development there was little change. Thus, the benchmarks were changed from four stages to three, and were renamed to focus on the developmental trajectory of the novice teacher (Beginning, Transitional, Program Completion). Following similar discussions with stakeholder groups (e.g., PDS governing council, mentors) the education department edited the benchmarks twice more.

Structure of MSM Benchmarks

Following a multi-year validation process, MSM's Benchmarks reflect the developmental stages of the teacher candidate and the increasing expectations within the program of study. There are three distinct levels: (a) Beginning Benchmarks for teacher candidates as they enter Internship I; (b) Transitional Benchmarks as teacher candidates conclude Internship I and begin Internship II, and (c) Program Completion Benchmarks for assessment at the conclusion of Internship II. These benchmarks are included in the Internship Handbook, in evaluation documents used during

Internships I and II, and on the education department website. In the handbook and on the website, each benchmark level is included in its entirety and is color coded to show alignment with the department's conceptual framework.

Each benchmark level consists of five benchmark components: (a) Planning, Instruction and Assessment; (b) Communication; (c) Management; (d) Analysis and Reflection; and (e) Professionalism and Leadership. Within the benchmark component are integrated statements about the knowledge and skills acquired through a carefully sequenced program of study. For example, in Planning, Instruction, and Assessment, teacher candidates are asked to demonstrate in their planning the connections between instructional strategies used in the field and what is taught in the university classroom and to incorporate knowledge of learning theory and cognitive development by planning for the social, emotional, cognitive, physical and cultural needs of the learner. Each benchmark level includes the statement "Intern plans for the social, emotional, cognitive, physical and cultural needs of the learner" in the benchmark component Planning, Instruction and Assessment. Beneath this statement are sample indicators which illustrate the developmental stages of the teacher candidate. Table 1 illustrates the developmental growth expected for a teacher candidate in this area of the component.

Table 1
Developmental Growth in Sample Indicators

Planning, Instruction and Assessment Benchmark component statement: **Intern plans for the social, emotional, cognitive, physical and cultural needs of the learner**	
Benchmark Level	**Sample Indicators**
Beginning	• Makes connections of instructional strategies used in the field to what is taught in university • Discusses needs of learners with mentor
Transitional	• Uses a variety of teaching strategies • Recognizes needs of learners and tries to incorporate appropriate teaching strategies that encourage learning
Program Completion	• Uses a variety of teaching strategies to purposefully meet various needs of learners • Recognizes, independently, the needs of learners, and incorporates appropriate teaching strategies that encourage active learning

The Transitional and Program Completion Benchmarks are converted to a tabular form to facilitate use for assessment. In this form each benchmark level, benchmark component, and sample indicators are presented with a four point rubric for teacher candidate, mentor, and supervisor evaluation (Appendix A). Rubric descriptors include: (a) Distinguished for candidates exceeding Program Completion Benchmark assessment expectations; (b) Proficient for candidates meeting Program Completion Benchmark expectations; (c) Basic for candidates partially demonstrating Program Completion Benchmark expectations, and (d) Unacceptable for candidates that have not demonstrated Program Completion Benchmark expectations. Following each benchmark component, space is provided for written comments by the evaluator.

It should also be noted that technology is integrated into the benchmark components and not specifically identified as a stand-alone component. It is the belief of MSM that technology not be used for technology's sake and therefore various technologies and methods for instructional application are interwoven in the teacher candidate experience. That integration carries into the benchmark components. For example, in Planning, Instruction and Assessment a sample indicator reads, "uses a variety of materials and technology to support instruction" and in Communication an indicator reads, "uses technology as a communication tool."

Uses of Benchmarks

Benchmarks Used for Evaluation

When teacher candidates enter Internship I, mentors and supervisors use the Beginning Benchmarks as a basis for communicating expectations to teacher candidates. As candidates move through the internship, the target becomes Transitional Benchmarks. The first formal teacher candidate evaluation occurs using the Transitional Benchmarks at the conclusion of Internship I. The teacher candidate, mentor, and supervisor individually complete the Transitional Benchmark assessment, an electronic submission. A rating of "not able to rate" is also provided for benchmarks at this level, as

candidates may not have had an opportunity to demonstrate proficiency with all benchmarks. Space is provided for clarifying comments on scoring decisions. The assessment requires each evaluator to make a recommendation regarding the teacher candidate's advancement to Internship II. The evaluator may recommend, recommend with conditions, or recommend that the teacher candidate not proceed to Internship II.

The teacher candidate, mentor, and supervisor then meet in a three-way conference to discuss their perspectives on teacher candidate performance. Using the language of the benchmarks, goals are set for the teacher candidate as s/he proceeds to Internship II. This conference informs a formal, written reflection by the teacher candidate about areas of strength and areas for improvement, the frontispiece of the Internship I portfolio.

Teacher candidates recommended with conditions receive a letter that documents the benchmark components identified as needing improvement. The letter is copied to the mentor and supervisor working with the teacher candidate in Internship II. The purpose is to clearly communicate and set well-defined expectations. Teacher candidates not recommended for Internship II meet with the PDS Liaison for counseling about the rigor of the teaching profession, the teacher candidate's dispositions, and goals for the future.

When teacher candidates move to Internship II, the Program Completion Benchmarks are used for both midterm and final assessment. The teacher candidate, mentor, and supervisor evaluate teacher candidate performance in the same manner as in Internship I except that only the final assessment is completed electronically and becomes part of the assessment system. At midterm a three-way conference is held resulting in a list of expectations for the remainder of the internship. At the conclusion of Internship II a final three-way conference is held to evaluate candidate overall performance. From this conference a final score, contributing two-thirds of the grade for Internship II, is determined. Benchmark components have been weighted in the determination of final score: Planning, Instruction, and Assessment (30%); Management (25%); Communication (15%); Analysis and Reflection (15%); and

Professionalism and Leadership (15%), based upon feedback from stakeholders (e.g., supervisors and mentors). An electronic, program completer portfolio accounts for the remaining one-third of the Internship II grade.

Teacher candidates are evaluated using the benchmarks in both their teacher internships (candidate performance assessment as described above) and in the benchmark section of the Program Completion Portfolio (evidence-based assessment). The Program Completion Portfolio is the capstone assessment that occurs at the end of Internship II. The portfolio is comprised of three parts: professional section, benchmark section, and Maryland Teacher Technology Standards (MTTS) section. The benchmark section, which accounts for 50% of the portfolio grade, requires the teacher candidate to explain and document, through artifacts from the internships and university experiences, their effectiveness in meeting each benchmark component.

Benchmarks Used for Accreditation

Benchmarks are a central data source in the evaluation of teacher candidates in MSM's assessment system for accreditation. Aligned to the standards of the profession, benchmarks provide an accountability measure and inform program improvement decisions. The assessment coordinator monitors teacher candidate performance on benchmark assessments and reports these data to stakeholders annually. Because data are collected electronically, the assessment coordinator is able to analyze data at the benchmark component level across internship evaluations (i.e., candidate, mentor, and supervisor; Internships I and II) and in the electronic Program Completion Portfolio.

Benchmark data findings are important for program design and accountability decision making. Collaboration with arts and sciences faculty and PDS partners strengthens MSM's teacher education programs. A Content Area Advisory Committee (CAAC), with representation from all departments directly serving certification areas in the department of education, was convened to provide regular dialogue (twice yearly) with arts and sciences faculty on

issues of relevance to teacher education and teaching and learning in K–12 schools. The CAAC also reviews program data including findings from benchmark assessments. Benchmark assessment data are of particular interest to CAAC as content knowledge mastery, included in the Planning, Instruction and Assessment benchmark component, falls within the domain of arts and sciences faculty. A PDS Advisory Committee, with representation from each PDS school, meets four times a year to discuss matters pertaining to teacher internships and to review program data. PDS principals also meet with the education department annually to review program data, including benchmarks. Principal input has proven valuable in analysis of benchmark data. Often, the school-based perspective of principals provides insight on actions occurring in schools. Further, informed by benchmark findings, principals hold the authority to implement school-based changes to support internship experiences.

Accrediting organizations require comprehensive assessment systems. MSM implemented an integrated approach to meeting accreditation criteria by aligning assessments to national and state accreditation standards and the standards of Specialized Professional Associations (SPA). Data collected from benchmark assessments is central in documenting teacher candidate achievement and in the continuous evaluation of education programs in meeting accreditation criteria.

Benefits of Benchmarks

Using benchmarks provides a common language for teacher candidates, mentors, and supervisors to talk about expectations, goal setting, and progress toward meeting goals. Benchmarks also provide clarity for performance expectations. Analysis of the last three years of benchmark data show little variability between mentor, supervisor, and teacher candidate overall mean benchmark scores, with the largest range between scores occurring in 2012 at 0.11.

Benchmarks also help to clarify the stages of development for novice teachers. Mentors may have teacher candidates during both Internship I and II within the same year. In the past, on occasion, a

mentor held higher expectations for the Internship I teacher candidate having just mentored an Internship II teacher candidate in the fall. The benchmarks serve as a reminder of the developmental nature of teaching and as a tangible guide to support teacher development. Benchmarks support teacher candidates as they gain confidence in the classroom. Some teacher candidates experience difficulty when they recognize that their teaching skills are not as well refined as those of their mentor or even other teacher candidates in their cohort. Recognizing developmental levels helps to place their performance in context.

Benchmarks help to target teacher candidates' needs. When a teacher candidate struggles with one or more of the benchmark components, interventions can be put in place that address the targeted component(s). By incorporating the language of the benchmarks into an intervention plan, mentors and supervisors are able to delineate the benchmark component(s) which need improvement and suggest strategies for growth. A timeline is set for evaluation of teacher candidate progress in meeting growth indicators established in the intervention plan.

In the case of a teacher candidate who has not demonstrated proficiency as measured by the Transitional Benchmarks, special measures are taken in acquiring an Internship II mentor. The field placement coordinator works with the PDS liaison, the site coordinator, and principal in selecting a mentor with teaching characteristics that will best support the teacher candidate's needs. In this way Internship II placements are made purposefully, anticipating interventions that may need to occur for the teacher candidate to meet Program Completion Benchmarks successfully.

Limitations of Benchmarks

Response to the MSM Benchmarks has been largely positive. The collaborative development resulted in a clarity of language across three stages. However, MSM Benchmarks may be limited by component indicators. Indicators were provided as examples of expectations of each component, but they have been viewed by some as a checklist. Further, listing indicators may limit the range

of activities considered in each component. For the highly proficient teacher candidate, the indicators may limit development of more advanced classroom practices.

Used as both formative and summative assessment at varied points of clinical experience, MSM Benchmarks provide measures of teacher candidate performance. As rich as the data are, teacher candidates indicate that conferencing with both mentor and supervisor to discuss benchmark evaluations is most influential in shaping their thinking about their professional development. Because mentors and supervisors differ in their perspective on the internships, consistency in these evaluative discussions is not guaranteed to be the same for all.

Conclusions

MSM benchmark assessments have been found to support teacher candidate development. This supports the findings of Brouwer and Korthhagen (2005) where incremental increases in teaching complexity supported teacher candidate growth. Further, as noted by Taras (2010), the clarity of expectations was enhanced through the benchmarks which enabled teacher candidates to more explicitly understand the gaps between their current and desired learning outcomes. Benchmarks are incorporated into intervention plans and do support remediation needs, confirming the findings of Black and Wiliam (2009). Beginning and Transitional Benchmarks are used formatively to support a dialogue between supervisor, mentor, and teacher candidate which codifies any gaps between current and expected performance through feedback. The Program Completion Benchmarks are used for summative assessment of teacher candidate performance during Internship II and in the program completion portfolio.

The benchmarks and their components are a representation of MSM's mission of faith, discovery, leadership and community. In many ways the benchmarks are the linkage between university mission and education department conceptual framework proficiencies (proficient, reflective, ethical, leading, and adaptive). Further, because of the collaborative development and use of the

benchmarks as a performance measure and feedback tool, they have been embraced by all stakeholders. This distinguishes MSM benchmarks from other program metrics that respond to the needs of specialized professional associations and may not be performance based.

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Appendix A

Sample Transitional and Program Completion Benchmark Assessment for Planning, Instruction, and Assessment[1]

Transitional Benchmark
I. Planning, Instruction, Assessment

Standards/ Framework	Benchmark	Sample Indicators	4	3	2	1	N
InTASC 5, 7 Proficient	I.A. Intern plans effective lessons in assigned content area(s)	• Creates bulletin board and/or centers that complement classroom topics • Helps develop weekly plans • Investigates and uses a variety of resources • Organizes materials for lesson					
InTASC 1,2, 3 Ethical	I.B. Intern plans for the social, emotional, cognitive, physical and cultural needs of the learners	• Uses a variety of teaching strategies • Recognizes needs of learners and tries to incorporate appropriate teaching strategies that encourage learning					
InTASC 7 Proficient	I.C. Intern plans lessons that build on one another	• Differentiates instruction • Reviews IEP/ILP and knows goals					
InTASC 8, 9 Proficient	I.D. Intern continues to improve instructional delivery	• Creates student-centered activities • Motivates student learning • Is flexible • Draws closure to lesson in meaningful and purposeful ways • Observes and begins to understand scaffolding process • Asks a variety of levels of questions including higher-level thinking questions					
InTASC 4, 5 Proficient Adaptive Leading	I.E. Intern demonstrates understanding of appropriate content area(s) and technology	• Is resourceful in acquiring supplementary knowledge (e.g. reputable websites, library materials, team members, etc.) • Regulates own learning • Teaches accurate and relevant information					
InTASC 4, 7 Proficient Adaptive Ethical	I.F. Intern is familiar with local and state curriculum	• Incorporates curriculum into lessons • Uses technology to incorporate curriculum • Follows school system procedures and copyright laws					
InTASC 1, 2, 3, 5 Ethical Proficient	I.G. Intern demonstrates understanding of social, emotional, cognitive, physical, and cultural needs of learner through instruction	• Is able to anticipate student questions • Understands and models directions for student tasks • Employs new instructional strategies					

[1]May be accessed via the following link:
http://www.msmary.edu/School_of_education_and_human_services/department-of-education/resources/internships-benchmarks.html

InTASC 6 Proficient	I.H. Intern understands different purposes and methods of assessment	• Knows how students learn • Observes, discusses and administers formal assessments • Uses informal assessment strategies	4	3	2	1	N
InTASC 2, 6 Proficient Ethical	I.I. Intern makes accommodations for assessments as needed	• Knows ability levels of learners • Facilitates understanding of material for ELL/ESOL students					
InTASC 6, 7, 8 Proficient Reflective	I.J. Intern and mentor review assessments to help guide instruction	• Analyzes student work samples with mentor • Begins to discuss setting goals for learners with mentor					
Comments for Planning, Instruction and Assessment							

Program Completion Benchmark
I. Planning, Instruction, Assessment

Standards/ Framework	Benchmark	Sample Indicators	4	3	2	1	N
InTASC 4, 5, 7 Proficient ACEI 1, 2.1, 2.2, 2.3, 2.4, I	I.A. Intern writes concise, effective lesson plans	• Uses lesson plan book with modified MSMU lesson plan format • Has clear objective • Connects lesson to previous lesson • Expects unexpected • Plans meaningful homework • Shows long-term planning • Demonstrates knowledge of subject matter					
InTASC 1, 2, 3, 7 Ethical/Adaptive ACEI: 1, 3.2, 3.3	I.B. Intern plans for diverse learners	• Meets different learning styles • Uses a variety of teaching strategies					
InTASC 7 Proficient ACEI: 5.4	I.C. Intern uses a variety of planning tools	• Uses technology for planning and instruction • Works and co-plans with other team member/support members					
InTASC 1, 2, 3, 8 Ethical/Adaptive ACEI: 3.1, 3.2, 3.3	I.D. Intern effectively teaches all learners	• Meets students' needs • Adjusts lesson on the spot • Integrates with other disciplines • Paces lessons well • Allows for guided practice and independent practice • Employs flexible grouping • Promotes student thinking through spontaneous, higher-level questioning					

InTASC 8 Proficient/ Adaptive ACEI: 1, 3.3	I.E. Intern uses a variety of instructional strategies	• Adapts strategies to learners' needs • Uses a variety of materials and technology to support instruction • Uses a variety of clear and accurate representations, explanations, and presentations to support learners' understanding and critical thinking skills	4	3	2	1	N
InTASC 5, 7 Proficient ACEI: 2.1, 2.2, 2.3, 2.4, 3.1, 4	I.F. Intern is knowledge-able about local and state curriculum	• Expands upon basic knowledge of content and curriculum • Teaches accurate and relevant information • Is familiar with local and state assessment system • Integrates content areas					
InTASC 1, 2, 3, 8 Ethical/ Adaptive ACEI: 3.4	I.G. Intern demonstrates understanding of social, emotional, cognitive, physical and cultural needs of learner through instruction	• Uses a variety of teaching strategies to purposely meet various needs of learners • Recognizes, independently, the needs of learners and incorporates appropriate teaching strategies that encourage active learning					
InTASC 6 Proficient ACEI: 3.5, 4	I.H. Intern uses both formal and informal assessment tools	• Uses questioning to assess learning • Uses local/state assessments appropriately to inform instruction • Selects, constructs and analyzes assessments independently					
InTASC 2, 6, 8 Proficient ACEI: 5.1, 5.2	I.I. Intern can assess as s/he teaches and adjusts as necessary	• Is able to discuss accommodations after lesson					
InTASC 6, 7, 8 Proficient	I.J. Intern plans instruc-tion from assessments	• Analyzes student work to develop lessons • Uses assessment results to help learners set goals					
Comments for Planning, Instruction and Assessment							

Integrating Instructional Technology into a Teacher Education Program: A Three-Tiered Approach

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Abstract

This project description examines how a teacher education program integrated new instructional technology through the creation of a Technology Facilitator position in the department. The project proceeded through a three-tiered system of learning *literacy* to establish a knowledge base amongst faculty members, *augmenting* required courses to model the use of instructional technology, and finally the *transformation* of the credential program where the activity of learning can only be accomplished through leveraging technology. As a professional program housed in a liberal arts institution, this project combines aspects of the essential learning outcomes of the 21st century with the professional skills required of K–12 teachers. Also included are initial data results from student and faculty pre- and post-surveys, observations of students using new technologies in the field, and implications for similar institutions in the implementation of a three-tiered approach to technology integration through the guidance of a Technology Facilitator.

Keywords: **teacher education, instructional technology, professional development, 21st century skills**

Many teachers today are facing digital natives in the classroom. Their students do not know the world without the World Wide Web. Teachers in the 21st century are expected to harness and guide these emergent technological skills in the classroom. Despite this reality, too often pre-service teachers are not offered "adequate time to absorb, reflect about, connect with, and be supported by technology" (Edutopia.org, 2011, para. 1). Arguably, in order for teachers to obtain the level of technological expertise necessary for today's classroom, the greatest opportunity to make drastic improvements is to include this focus in pre-service education programs. It should be modeled and integrated as a common thread throughout the supervised teaching experience, not relegated to lectures on technology in a single course or through hit-or-miss training on site during their supervised teaching semester. Indeed, in the state of California, 2011 Commission on Teacher Credentialing data indicate that credential completers' weakest areas are the use of computer-based applications to help students learn curriculum subjects and the use of computer-based technology in class activities (Commission on Teacher Credentialing, 2011). This article describes one school's response to this deficit in teacher education.

Context and Background

A wooded oasis in the midst of urban sprawl, Dominican University of California is a small, private liberal arts university in the San Francisco Bay area. Driven by the institution's four core values of study, community, reflection, and service, our teacher education program strives to embody the engaged, enlightened and impassioned educator needed in the 21st century classroom. A growing consensus of administrators and faculty in liberal arts colleges and universities indicate that while the connection between higher education and the world of work involves the teaching of marketable skills specific to students' majors, it also must include 21st century skills. "There has never been a more pressing need for graduates of liberal arts universities, for men and women who can think critically and analytically, write well, digest complex material, take a global perspective, and develop comprehensive solutions"

(Chan & Derry, 2013, p. 9). This assertion is consistent with scholarship on the modern, global economic landscape. Arguably, the combination of a liberal arts education and professional programs such as nursing, occupational therapy, counseling psychology, and teacher preparation, places universities like Dominican in a prime position to prepare 21st century citizens and workers.

Despite this dedication, the department of education at the university recently experienced some major shifts in leadership, program delivery, and content due to the following factors: (a) revised state standards for teacher preparation programs; (b) an upcoming Western Association of Schools and Colleges (WASC) accreditation visit, and (c) the retirement of several key program chairs at the school. This personnel change, which included the Single Subject and Multiple Subject Credential Programs, the Master's of Science in Education Program, the Liberal Studies/Teacher Preparation Program, and the Education Specialist: Mild/Moderate Credential Program, caused new coordinators to reflect upon the status quo. For up to 40 years, the same veteran faculty members coordinated these programs with little collaboration between them. As a result of that isolation, the new coordinators quickly realized that while these programs did produce quality teachers, each program would benefit from learning from the others. Specifically, they recognized the need for more deliberate attention toward the four C's of 21st century skills: collaboration, communication, critical thinking, and creativity, as well as information, media and technology skills. These realizations led program coordinators to re-design each program to be more cohesive and interconnected, thus modeling the 21st century student outcomes we wish to impart to our credential candidates and graduate students. This project description outlines a very deliberate approach to addressing instructional technology skills while modeling the four C's of 21st century learning.

A Review of the Literature

As noted, kindergarten through high school (K–12) teachers are faced with a growing tide of technology use in the classroom.

Arguably, without explicit training in its meaningful use, technology can become a distracting toy or ineffective tool collecting dust in the back of the classroom. Our department realized this and strove to weave technology holistically into the teacher preparation program.

Enhancing Student Learning with Technology

The day of "chalk and talk" classrooms is extinct. Teacher education programs must mirror this evolution to better connect and engage the modern elementary and high school student. The ability of pre-service teachers to integrate technology into the curriculum is needed to guarantee their future success and the success of their students. To this end, many teacher education programs are concerned with how to properly provide pre-service teachers with the technology-related attitudes and skills needed to integrate technology into classroom practices (Wilson, 2003). Scholars posit that teacher education courses which expose pre-service teachers to technology play a major role in pre-service teachers' overall use of technology, and may assist them in learning to integrate technology into their future classroom practice (Collier, Weinburgh, & Rivera, 2004; Pope, Hare, & Howard, 2002).

The teacher candidates enrolled in this credential program are preparing to become teachers in grades ranging from kindergarten through high school. These teacher candidates must develop competencies across a variety of disciplines. It is essential that they develop a range of pedagogical strategies to meet the needs of their students. "Technology literacy is one of the most important skills we can teach our students as we prepare them for future careers in a technological society" ("Driving student engagement," 2013, para. 7). The ability to integrate technology into the classroom has become an imperative for teachers at all grade levels. State standards require it and research supports its positive impact on student learning (Northeast Mississippi Technology Pilot Program, 2013). Deciding upon the appropriate use of technology is key to enhancing student learning and engagement.

The debate regarding the best method of integrating technology

into the classroom is not new. In 1987, Papert coined the term "technocentric" to describe advocates' "overemphasis on the design and features of the technologies rather than the learning that they can support" (as cited in Harris & Hofer, 2011, p. 227). Increasingly, researchers have found that in order to transcend "technocentric" thinking, teachers need to center more on what the students can do with the information gained from technology, not on the quantity or ease of obtaining the information (Keengwe, Schnellert, & Mills, 2012). When this important distinction is made, students indicate more interest in the subject, more engagement, and better understanding of the learning outcome (Kvavik & Caruso, 2005).

21st Century Skills in Teacher Education Programs

Americans have a history of investing in a public education system that prepares knowledgeable and productive citizens. Accountability efforts such as the common core standards movement and the No Child Left Behind Act have further emphasized the importance of learning mastery of English, mathematics, and other core subject areas. Increasingly though, today's business and political leaders are expressing the need to address other core competencies necessary for our 21st century landscape. The skills of problem solving, critical thinking, communication, collaboration and the ability to adjust to emerging technologies have surfaced as equally important as English and math skills (Darling-Hammond, 2006). A recent report by Pelligrino & Hilton (2012) highlights these new directions, identifying the need to focus on learning how to teach transferability of these broad skills in teacher education and professional development. "Some state and local high school reform efforts have begun to focus on a four-dimensional framework of college and career readiness that includes not only academic content, but also cognitive strategies, academic behaviors, and contextual skills and awareness" (p. 16). Arguably, this approach represents a shift away from standardized testing as the sole tool to measure student and teacher success.

This enhancement of public education, which includes deeper

learning and the development of transferable competencies, will require adaptations to current conceptions of what constitutes effective professional practice. This will result in reframing the purposes, structure, and organization of pre-service and professional learning opportunities (Darling-Hammond, 2006; Garrick & Rhodes, 2000; Lampert, 2010; Webster-Wright, 2009).

To accomplish this reframing of pre-service teacher education, this project reviewed current research on the subject of practice-based professional education. Scholars have recommended replacing current disjointed teacher learning opportunities with more integrated continuums of teacher preparation (Wilson, 2011; Windschitl, 2009). Teacher candidates also learn most effectively when their instructors model this collaboration and transferability. "Experiencing instruction designed to support transfer will help them [teacher candidates] to design and implement such instruction in their own classrooms" (Pelligrino & Hilton, 2012, p. 188).

Project Description

Research advocates the value of pre-service teachers observing university faculty members modeling technology in their courses to learn how technology can be effectively used to enhance instruction (O'Bannon & Judge, 2004; Schrum, Skeele, & Grant, 2003). This modeling may improve students' technology self-efficacy, technology proficiency, and their perceived usefulness of technology (Al-Ruz, & Khasawneh, 2011), as well as provide an opportunity to conceptualize how to include transferable skills in their classrooms.

Instructional Technology Grant

Prior to the Fall of 2011, the teacher preparation program at Dominican did not deliberately incorporate educational technologies across the coursework or fieldwork. Additionally, the multiple programs housed within the department did not effectively align student learning outcomes across programs or collaborate in a meaningful and consistent manner in regard to the integration of instructional technology. To address these deficits, two faculty members submitted a proposal for a university funded grant. The

proposal requested the purchase of key technologies, training for these technologies, and integration of these technologies into the single subject credential classes as a pilot for the entire department. A full description of these purchases is listed in Appendix A. Anticipated learning outcomes included participants' hands-on experience with the technologies and an understanding of how to effectively model such tools in the classroom.

The grant also entailed faculty professional development for the two grant recipients to ensure effective instruction in the use of the new technology. The project pilot began at Dominican's main campus in Spring 2012 with the single subject program. By Spring 2013, the pilot began to expand to all other teaching credential programs offered at the university. The two lead instructors of the project received training on the use of the products, trained fellow faculty members, modeled the products across the single subject curriculum, and attended CETPA (California Educational Technology Professionals Association), a K–20 educational technology association that provides leadership to the educational community.

Faculty Survey

To address the need for enhanced communication and collaboration, as well as the integration of instructional technologies in the department, the grant recipients developed a faculty technology survey. Modeling the use of one of the technologies obtained through the technology grant (CPS, or student response system), faculty (N=18) were asked a variety of questions regarding their perceived levels of competency and interest in learning new technological skills in the classroom (See Appendix B).

Applying a Likert scale, survey results indicated high percentages of very weak competencies in all but one of the categories (adequate competency in using software to create presentations). Additionally, faculty members indicated higher percentages in their desire to learn more about each of the categories. The project coordinators used these results to shape the timeline and trajectory of the technology project.

Three-Tiered Approach

The effective use of innovative technologies in higher education today requires an understanding of the significance of life-long learning for both learners and organizations (King & Griggs, 2006). Knowing this, the project required a framework to not only begin the professional development of university faculty, but also to extend that new knowledge to teacher candidates and ultimately their students in the field. Project coordinators devised a three-tiered approach to integrating instructional technology through modeling transferability and the four C's of 21st century learning (see Appendix C). The three-tiered approach supports the Technological Pedagogical Content Knowledge (TPACK) framework in that effective technology integration for teaching specific content requires understanding the relationship between technology, pedagogy and content (Mishra & Koehler, 2006). The three-tiered approach applied this relationship, stretching from our faculty, to required coursework, to the field.

The literacy process for credential candidates began in "Using Technology in the Classroom," one of the core courses, and continued across the remaining credential courses. Appendix D details the holistic and deliberate integration of the new technologies, leading to the culminating and transformative use of technology in the professional teaching website assignment. Through this course, students began to master the four C's by learning methods of how to teach and learn in the classroom. "It is the process of learning, not the content of learning that addresses the 4 C's" (Kolk, 2011, para. 1). For instance, students collaborated on course projects and were expected to creatively use innovative technologies, communicate their reflections on their experiences, and then problem solve, revise, and re-teach lesson plans. All of these steps and artifacts are documented and shared in their professional teaching website.

To begin, the literacy process (Tier One) began with professional development opportunities for the grant recipients. The two faculty members participated in webinars on the use of new technologies, attended the annual CETPA conference, and spent two semesters practicing with the new technologies independently. Subsequently,

the grant recipients began to augment their own curriculum and instruction as a pilot for the entire department (Tier Two). This initial integration began in the "Using Technology in the Classroom" course and extended to the "Secondary Curriculum and Instruction" courses. After one year of this pilot, the two faculty members began to conceive the transformation of the single subject credential program by aligning the use of instructional technologies with anchor assignments, student learning outcomes, and fieldwork expectations (Tier Three, and four C's). Twenty-first century learning skills are not about learning how to use technology or teaching with the tools, it is about the student creating and constructing with technology (Kolk, 2011), as our credential candidates do with the creation of their own professional teaching website.

As the pilot year of the project concluded, the two faculty members used the information gleaned from the faculty and student surveys to shape the progression of the project across all programs in the department. At this point, the literacy component began with faculty-led professional development retreats on creating websites, using student response systems, using iPads and interactive mobile white boards, and using applications for flipped classrooms and digital storytelling. Through this process faculty shared thoughts and worked together while linking learning across the disciplines. Faculty also collaborated with special education specialists to explore assistive learning applications in classrooms.

Upon learning literacy, faculty members then were encouraged to "check out" the new technology hardware to augment their own instruction. At this point, both teacher candidates and university faculty members were in the augmentation phase of the project. Faculty began to try new approaches with their instruction. They modeled the use of the technologies while teacher candidates implemented the same technologies in the field. As teachers move along the continuum, computer technology becomes more important in the classroom while simultaneously becoming invisibly woven into the demands of good teaching and learning. Both our three-tiered approach and the Substitution Augmentation Modification Redefinition Model (SAMR) share the second tier, or

augmentation phase (SAMR, 2013). This phase can use technology to accomplish traditional tasks, but the real learning gains are a result of engaging students in learning experiences that could not be accomplished without technology. While transformation and full engagement in all of the 4 C's are not yet achieved in all programs, all faculty members are working toward that goal in the 2014/15 academic year by modeling the single subject credential program's approach. Just as with the SAMR model, transformation involves the creation of new tasks deemed inconceivable in the past.

Technology Facilitator

Initially, the two grant recipients instigated and piloted the department-wide three-tiered process toward integrating and transforming the use of technology. It became evident that to be successful, a position needed to be created to organize and maintain the momentum initiated by the grant received. Thus, a three-unit Technology Facilitator position was created and supported by department administration.

The primary purpose of this position is to provide collaboration, consultation, and support for faculty and students across all programs. This includes faculty training, piloting and integrating new technologies into department coursework, tracking data on the use of new technologies, redesigning the curriculum to seamlessly incorporate new tools, and to support supervisors and student teachers in the use of new technologies in the field. In essence, the Technology Facilitator guides faculty and credential candidates through the technology project using the four C's of 21st century learning.

Results of the Pilot

Faculty began collecting data upon receiving the technology grant through pre- and post-surveys of the pilot group, 28 credential candidates. Credential students took a survey before beginning the "Using Technology in the Classroom" course and after completing the course. The purpose of this survey was to measure beginning credential candidates' perceived levels of proficiency

using instructional tools and their level of interest in learning more about using technology in the classroom. The results of this pilot group shaped the future direction of the project for all other credential programs in the school.

Appendix E, Table 1 displays the student skill level regarding general technology use. Prior to taking the "Using Technology in the Classroom" course, data indicated students were typically comfortable with basic internet and productivity tools (i.e. word processing, PowerPoint). The proficiency was lowest for skills using the interactive white boards and student response systems. Post-survey results show a significant increase in proficiencies, especially given that an *introduction* to technology literacy was the main goal in this first semester course. Additionally, credential candidates were surveyed regarding their interest in learning more about various instructional tools obtained through the technology grant. Table E2 charts the responses, indicating urgent to more urgent interest to learn more.

The project also piloted the use of the CPS (student response system) during credential candidates' student teaching in the field. Student teachers across content areas used the CPS as a formative assessment tool throughout their lessons. Both the credential candidates and their secondary students offered feedback after the lessons, signifying increased student engagement and achievement.

Implications and Conclusion

Transformation can be a difficult concept to make tangible, and in the case of instructional technology, it is ever-evolving. Our three-tiered approach to integrating and ultimately transforming our use of technology reflects that continuous cycle of literacy, augmentation and transformation. Initial data results indicate a need and interest in the process as well. These factors have directed our future direction with the project.

The appointment of a Technology Facilitator position in the department has enabled faculty to collaborate as they move through the three tiers and provide needed training and oversight. It has also allowed faculty to investigate emergent technologies such as

assistive technology for special education students and faculty, assessment software to accompany the interactive white boards and student response systems, BYOD (Bring Your Own Device) to interact with the assessment software, and targeted tablet applications for interactive and recordable whiteboards, photo stories, presentations, video lessons, flipped classrooms, and assistive learning. Considering faculty members come to the process with varying levels of comfort and competency, the leader differentiated the professional development for each faculty member. Arguably, without this kind of leadership and structure the department would not be able to intentionally secure successful and sustainable professional development in the growing world of instructional technology.

Transformation has also manifested itself in the field. The student teachers' lesson and unit planning has been altered to reflect that goal. Specifically, the student teachers are expected to select and adapt instructional tools to address students' varying learning styles and abilities, use instructional tools to engage students, and reflect upon the use of instructional tools.

While we will continue to evaluate and expand the Dominican technology project, the next phase is to establish a Technology Implementation Model with interested sister institutions. Development of this model includes identification of key stakeholders through the description of project coordinators, vision/ goals/strategies specific to each institution, professional development plans as a result of a needs assessment/ inventory, and a plan for continual evaluation. Key components of the model are a position description of the Technology Facilitator, faculty training, a required educational technology course, alignment of curriculum to emerging technologies and best practices, pre- and post-survey assessments, new technologies modeled in the classroom, and the integration of an instructional technology requirement in student teacher fieldwork.

This project started small, with two participating faculty members receiving an institutional grant to purchase key technologies and receive training. It has hence expanded into a departmental

commitment to a cyclical three-tiered approach to implementing instructional technology and the appointment of a Technology Facilitator to oversee the project. Rooted in the 21st century learning goal of transferability, this project represents an effort toward sustainable change through a cultural shift in a teacher education program that historically did not embed technology in a meaningful way, and serves as a model for similar programs.

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Appendix A
Grant Expenditures

The project included exposing credential candidates to educational technologies currently in use in K–12 and higher education settings. The grant enabled faculty to purchase the following:

1. Mobi-Views - Provides the function of a fixed interactive white board at a fraction of the cost of such an item. Instructors have complete freedom to move around the classroom without having to return to their computer during the lesson.

2. CPS Pulses (Student Response Systems) - Used to fully engage all students and assess learning. Facilitate greater student-teacher interaction in a dynamic learning environment that encourages class discussion and participation.

3. Elmo Document Cameras - A document camera is a tool to help teachers create visually interactive lessons to engage many types of students in learning, i.e. students with spatial and kinesthetic learning styles, English Language Learners, students in Exceptional Education programs, and struggling readers (Clemmons and Hayn, 2009).

4. Five iPads - The Apple iPad has been one of the most quickly adopted digital technologies in recent history. More than 1.5 million iPads are used specifically for education and more than 20,000 educational applications have been created (EdMedia, 2012). The learning impact of the iPad for students with special needs has been gaining great attention in education. Reports have testified how these students can benefit from the integration of the iPad into their learning (E-LEARN, 2011).

5. Doceri - A professional iPad interactive whiteboard and screencast recorder with sophisticated tools for hand-drawn graphics and built-in remote desktop control. The instructor can create lessons, presentations and graphics and share them as still images, PDFs or audio/video screencasts (Doceri, 2013).

Appendix B
Faculty Technology Survey[1]
Table B1: Competency Levels

Topic	Competency (% of sample) Competency Level* 1	2	3	4	5
Creating a classroom website	41	12	29	6	12
Using software to create presentations (Prezi, PowerPoint, Keynote)	6	6	41	35	12
Using interactive white boards for mobility in the classroom (Mobi, Doceri, ShowMe, Explain Everything)	53	29	12	0	6
Using interactive white boards to promote student engagement (Mobi, Doceri, ShowMe, NearPod, Explain Everything)	59	24	12	0	6
Using applications for video lessons/online/flipped classes (EduCreations, ShowMe, Doceri)	53	24	18	6	0
Using applications for digital storytelling (Photo Story, Haiku Deck, Sonic Pics)	65	18	0	12	6
Using Student Response Systems to enhance student engagement (CPS, Socrative, Insight 360)	65	12	12	12	0
Using Student Response Systems as an assessment tool (CPS, Socrative, Insight 360)	59	12	29	0	0
Using Assistive Learning Applications in the Classroom	59	35	6	0	0

*Competency Levels
1 Very weak
2 Moderately weak
3 Adequate
4 Moderately strong
5 Very strong

[1] Because the statistical software used, e-Instruction CPS v3.5, rounds up, some rows add up to 101%.

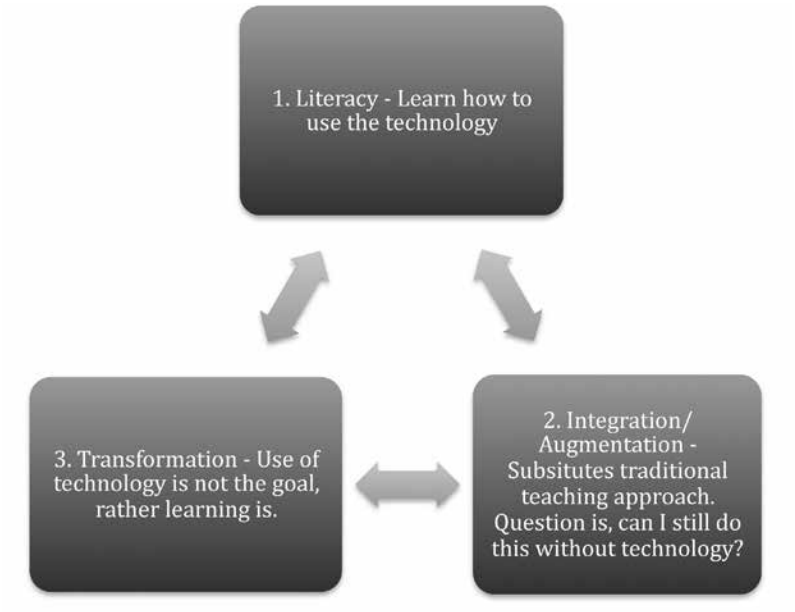
Table B2: Interest in Learning

Topic	Interest (% of sample) Interest Level* 1	2	3	4	5
Creating a classroom website	12	24	6	12	47
Using software to create presentations (Prezi, PowerPoint, Keynote)	12	18	29	0	41
Using interactive white boards for mobility in the classroom (Mobi, Doceri, ShowMe, Explain Everything)	18	12	24	18	29
Using interactive white boards to promote student engagement (Mobi, Doceri, ShowMe, NearPod, Explain Everything)	12	18	18	18	35
Using applications for video lessons/online/flipped classes (EduCreations, ShowMe, Doceri)	0	6	18	24	53
Using applications for digital storytelling (Photo Story, Haiku Deck, Sonic Pics)	12	12	41	0	35
Using Student Response Systems to enhance student engagement (CPS, Socrative, Insight 360)	6	6	24	12	53
Using Student Response Systems as an assessment tool (CPS, Socrative, Insight 360)	0	12	18	12	59
Using Assistive Learning Applications in the Classroom	6	24	12	12	47

*Interest Levels
1 Not interested
2 Less interested
3 Adequately interested
4 Moderately interested
5 Strongly interested

Appendix C

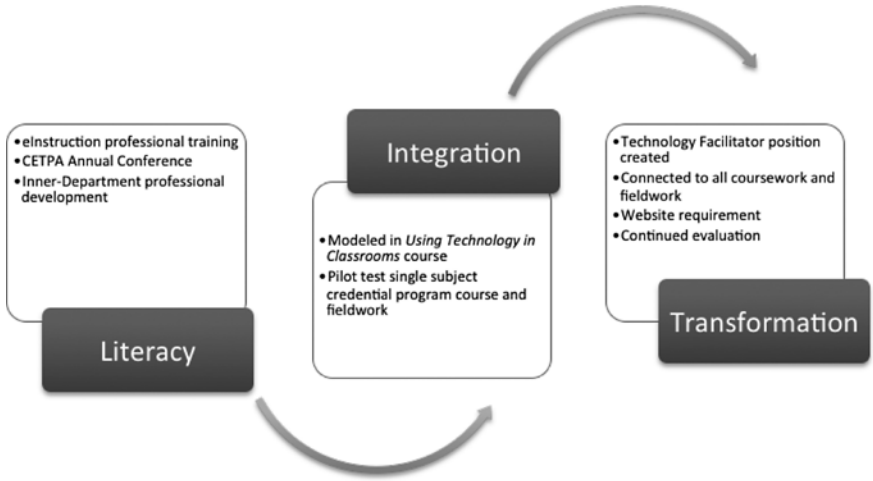
Three-Tiered Approach
Table C1: Three Tiers of Instructional Technology Integration



This is a cyclical process as new, emergent technologies are constantly on the horizon. To accomplish the three tiers, one must transfer and leverage the four C's of 21st century learning (Communication, Collaboration, Critical Thinking, and Creativity).

Appendix D

Literacy to Transformation in Course and Fieldwork
Table D1: Roadmap to Level Three



Appendix E
Student Survey Results

Table E1: Student Skill Levels – Instructional Technology

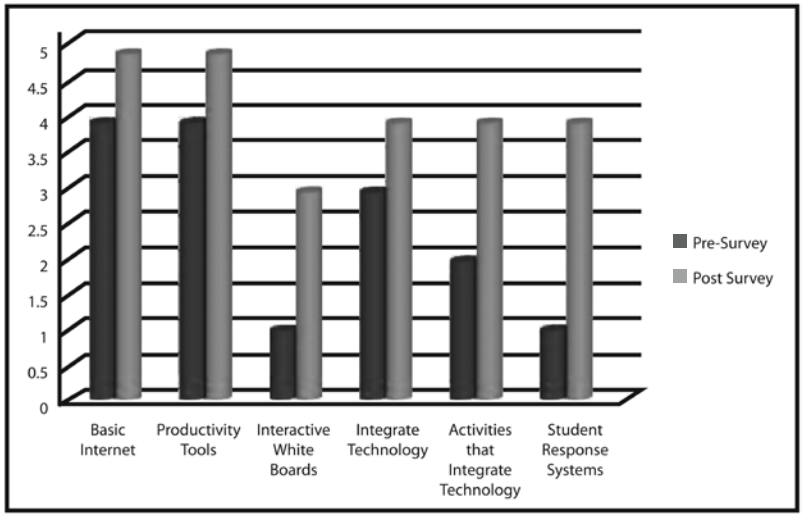


Table E1 displays the student skill level regarding general technology use. Proficiency was measured using a Likert scale with 1 very weak to 5 very strong.

Table E2: Interest in Learning More

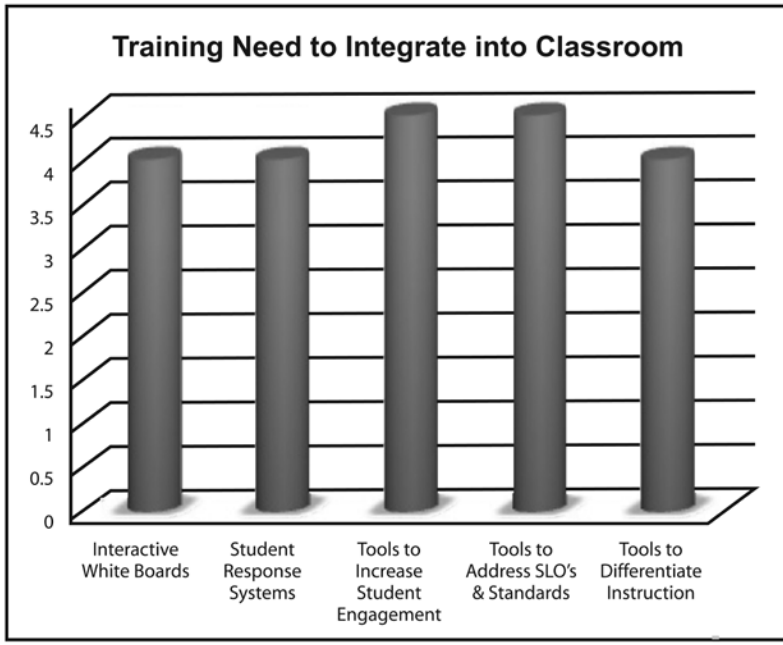


Table E2 measures the level to which credential candidates were interested in learning more about various instructional tools. Responses were measured by Likert scale of 1 (Less Urgent) to 5 (More Urgent).

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Co-Learning: Maximizing Learning in Clinical Experiences

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Abstract

Researchers and teacher educators have given increased attention to co-teaching during the student teaching experience. Co-teaching facilitates an apprenticeship arrangement that encourages modeling of classroom practice for the candidate and a chance to implement directly what is being learned by the apprentice. The co-teaching model can be expanded to form a co-learning model in which there are three constituents of learners: the P–12 students, the candidate, and the cooperating mentor teacher. This co-learning model results in a synergistic effect that is greater than the sum of the parts.

Keywords: **Co-teaching, co-learning, student teaching**

Traditionally, in a co-teaching teacher preparation model, a cooperating teacher and teacher candidate simultaneously have responsibility for a common group of learners. These two adults collaborate in lesson planning and instruction of these students. Of importance, evidence indicates that learners do as well—and often better—when being taught in two-teacher environments than when similar students are taught in single-teacher classrooms (Castle, Arends, & Rockwood, 2008; Fisher, Frey, & Farnan, 2004). Co-teaching appeared as an instructional approach in the early 1990s, as a way to address better the needs of special education students (Morsink, Thomas, & Correa, 1991). Increasingly, practitioners saw that co-teaching was an effective approach in all classrooms (Cook & Friend, 1995). Eventually, the co-teaching model was given increased attention as a new approach to the student teaching experience. Leadership in this approach was provided by St. Cloud University's teacher preparation program (Heck et al., 2010).

The co-teaching model can be expanded to form a co-learning model in which there are three constituents of learners: the P–12 students, the candidate, and the cooperating mentor teacher. This co-learning model results in a synergistic effect that is greater than the sum of the parts. Co-learning recognizes the fluidity of knowledge transmission among the students, cooperating mentor teacher, and the teacher candidate. A co-learning classroom is transformed into a vibrant learning laboratory that connects practice, research, and theory.

Currently, the focus of possible interactions in the traditional student teacher classroom is how and what P–12 students learn from the classroom teacher or the teacher candidates when they are solo teaching. The P–12 students are constantly learning both overt and hidden curricula in their educational experiences, and considerable resources are applied to determine what they have learned. A current intention is that teacher candidates work in clinical placements in order to learn about teaching from both the students and the cooperating teacher. It is rarely considered that clinical experiences can be structured in order to maximize the professional development of the cooperating mentor teacher who has the opportunity

to learn not only from the P–12 students but also from his or her teacher candidate during the mentoring process. With shrinking district professional development funds and elimination of tuition reimbursement programs for educators, co-learning provides the cooperating mentor teacher professional development opportunities without cost to the school district or the teacher.

Theoretical Framework

Situated cognition (Brown, Collins, & Duguid, 1989) has been the hallmark of teacher preparation's orientation of theory into practice. How can we help teacher candidates learn about teaching in environments in which they will *authentically* use their new knowledge? Cognitive apprenticeship tries "to enculturate [candidates] into authentic practices through activity and social interaction in a way similar to that evident … in craft apprenticeship" (p. 37). Co-learning encourages a reduction of the inherent directionality of the learning in the clinical experience. The experience retains all of the elements of authenticity that are needed but also encourages a move toward creating a learning community in which all participants benefit (LeCornu & Ewing, 2008).

For the cooperating teacher, co-learning expands beyond the supervisor/teacher relationship to one in which the cooperating mentor teacher intends to pass on his or her craft to the teacher candidate. In the process, the teacher candidate adapts teacher knowledge. "Although mentors' collaboration in this adaption may assist them in upgrading their professional expertise, the distinctive achievements of the mentor appear to be selfless transmission of one's professional legacy…" (Healy & Welchert, 1990, p. 18). Indeed, mentors seem to gain satisfaction in producing new knowledge during the mentoring relationship (Blackburn, Chapman, & Cameron, 1981). There is some truth to the oft-used aphorism, "the best way to learn something is to teach it." Cooperating teachers can gain considerable growth from the co-learning environment. Our interest is to focus on the benefits of the co-learning community and to examine the types of new knowledge that may be generated in the process.

Literature Review

Curry and Cunningham (2000) define co-learning as constructing knowledge in a community. For them, co-learning serves to deemphasize the notion that teachers are experts who provide knowledge, and students are learners or receivers of knowledge. Brantmeier (*n.d.*) more emphatically describes co-learning as an empowerment pedagogy for all of the participants in the learning community. Lawrence (1996) studied co-learning among graduate school cohorts and found students and teachers were able to co-create knowledge when group dynamics and de-centering of authority were part of the group structures.

Our work began by implementing more traditional models of co-teaching. It then evolved into a co-learning approach to augment those traditional models. Co-teaching during the student teaching experience has been given increased attention among researchers and teacher educators (Bacharach, Heck, & Dank, 2003; Heck et al., 2006; Perl, Maughmer, & McQueen, 1999). Co-teaching is defined as "two or more professionals delivering substantive instruction to a diverse or blended group of students in a single physical space" (Cook & Friend, 1995, p. 14). Others have extended this definition to emphasize that co-teaching is "a collaborative relationship for the purpose of shared work…for the outcome of achieving what none could have done alone" (Wenzlaff et al., 2002, p. 14). The literature on the benefits for P–12 students and teacher candidates of co-teaching is robust. Villa, Thousand, and Nevin (2013) provide a comprehensive review of the literature demonstrating the benefits of co-teaching. Conderman (2011) discusses the importance of student reflection in co-teaching classrooms. In a meta-analysis, Murawski and Swanson (2001) found positive effect sizes in the use of co-teaching across content areas with the highest ratings appearing in language arts classrooms. Less often has the benefit to cooperating teachers been the focus of study (Scheetz, Waters, Smeaton, & Lare, 2005).

A co-teaching model for student teaching allows the cooperating teacher to maintain the primary responsibilities for the classroom while providing the teacher candidate with initial responsibilities,

such as monitoring individual work or teaching a small group of students. The difference between this approach and a traditional model is that the teacher candidate is integrated from the beginning of the student teaching placement as a teacher versus as a student observer. Thus, the cooperating teacher and teacher candidate collaboratively plan and deliver instruction from the beginning. Teacher candidates are able to see more clearly the dynamics of how a classroom works and the process by which teachers plan lessons and implement curriculum. Ultimately, the teacher candidate and cooperating teacher alternate between assisting and/or leading the planning, instruction, and assessment. This co-teaching model is transformed into a co-learning model when the P–12 students are integrated into the community of learners who construct knowledge together with the cooperating teacher and teacher candidate.

Methods

Seventeen cooperating teachers and 17 teacher candidates participated in this study. Eleven co-learning experiences took place in K–5 classrooms, three took place in middle school classrooms, and three were in high school classrooms. There was a large range of demographics for the 17 co-learning placements, and this allowed us to explore the effectiveness of co-learning across multiple characteristics. The following table (Table 1) displays the range of demographic data in the co-learning placements.

Table 1
Ranges of Percentages of Ethnicity and Learner Needs in Co-Teaching Placements

Ethnicity	Percentages	Learner Needs	Percentages
Asian	2.7–10.8	Special Education	8.8–22.3
African-American	0.9–28.0	English Language Learner	3.2–46.3
Hispanic	7.4–62.1	Talented and Gifted	3.6–14.5
Native American	0.2–3.3	Free and Reduced Lunch	14.9–88.3
White	13.8–81.4		
Multiple Races	2.5–8.5		

In this study, 17 cooperating teachers and 17 teacher candidates received instruction about and implemented the co-learning model for student teaching. The field placement supervisor who was a former principal, an assistant professor who teaches classroom management and assessment and who has supervised student teachers for over 5 years, and one university supervisor who also had been a principal and who supervised student teachers for over a decade, served as the trainers for the cooperating teachers, teacher candidates, and university supervisors. These individuals had received training on the St. Cloud co-teaching model. There were three training sessions for the participants in the co-learning program and one final session of sharing successes and challenges. At the first training, the participants were given an overview of the co-teaching model and how it is implemented during the student teaching experience. In addition, research findings were shared from previous years of implementation of the co-teaching model as they related to co-learning. At the next training session, participants were provided instruction on co-teaching strategies and lesson planning. Moreover, significant time was devoted to allowing cooperating teachers and teacher candidates the opportunity to build positive working relationships, a foundational element to the co-teaching model (Heck et al., 2010). Sharing values regarding timeliness, organization, and communication strategies are examples of the types of conversations in which participants engaged during session two. In addition, participants practiced co-planning strategies at the second training session. The third training provided an opportunity to check in with the co-teachers, clarify roles and responsibilities, and summarize and reinforce the co-teaching model and strategies. The final session was designed to be an opportunity for co-teachers to share successes and challenges during their co-learning experience, as well as provide an opportunity to give feedback about the program.

In this study the co-teaching placements were in schools representing a variety of student demographics, in classrooms of varying age levels and content areas, with teachers at different experience levels, and a multitude of other differences. Because this was an

exploratory study of the implementation of co-teaching in teacher preparation, a qualitative approach was needed to establish the broader themes emerging from the experiences. Our approach was to use observation and interview data coupled with traditional qualitative coding strategies to identify processes in local contexts (Miles & Huberman, 1994).

Cooperating teachers and teacher candidates were interviewed individually at the conclusion of their experience using a protocol that included questions about successes and struggles related to working together using the co-learning model, perceptions of effectiveness, and their sense of how well the cooperating teacher and teacher candidate collaboratively planned, instructed, and assessed student learning. Specifically, cooperating teachers and teacher candidates were asked a series of questions to explore whether or not they believed they were now able to see more clearly the dynamics of how a classroom works, the process by which teachers plan lessons and implement curriculum, and other issues related to professional development. Furthermore, teacher candidates and cooperating teachers were asked to explore the ways in which they learned from their P–12 students and how co-constructed knowledge informed their teaching and learning practices. The following are sample interview questions:

1. How was the co-teaching experience a success for you?
2. How was the co-teaching experience a success for your P–12 students?
3. How were you better able to differentiate instruction using the co-teaching model?
4. How have your understandings and practices of classroom management changed using the co-teaching model?
5. How have you grown professionally using the co-teaching model?

In addition to interviews, observations were made by the staff, trainers, and the faculty supervisor in each of the co-learning classrooms. Approximately 300 hours were spent in the field to observe

how cooperating teachers and teacher candidates implemented the co-learning model during student teaching. Observation notes were used to triangulate interview and survey responses in order to discover emerging themes.

Finally, the co-learning participants were asked to complete an end-of-experience survey that addressed challenges and successes with the co-learning model, professional development (sample questions included lesson planning, knowledge of curriculum, and classroom management), as well as how the participants learned from each other during this co-learning experience (i.e. cooperating teacher learning from the teacher candidate and P–12 students, teacher candidate learning from the cooperating teacher and P–12 student, and both the teacher candidate and cooperating teacher addressed how the P–12 students learned from both teachers in the classroom).

Analysis

The analysis began after the initial interviews, observations, and/or personal anecdotes were documented (Maxwell, 1996). The cooperating teacher and teacher candidate interviews, observations, and field notes were analyzed using a constant comparative qualitative assessment of dominant themes that emerged during the process. Constant comparison was used in order to chunk the data into meaning units. The chunks were coded according to overarching commonalities illustrated in the data. Analysis of the data reported in this study was done using an iterative process of pattern coding (Miles & Huberman, 1994). Coding was done individually by four faculty members who then met and adjusted coding categories before coding a second time. After consultations, all four researchers agreed upon the emergent themes and exemplars. Results of the analysis were reported to principals and staff members at the participating schools and were used as source data in working groups at the University to suggest improvements to the co-learning experience.

Results

Creating and implementing a co-learning model for student teaching was examined to determine cooperating teachers' and teacher candidates' professional growth in a dynamic community of learners. In addition, we explored how P–12 students benefited in this co-learning model. This research examined the co-learning model as one way to help candidates learn about teaching in environments in which they would authentically use their new knowledge.

Classroom Management

Teacher candidates in this study said that using the co-learning model helped them to become more attentive to classroom management issues and each student's learning needs. For example, one teacher candidate commented that gaining classroom management techniques was the greatest benefit:

> In my classroom I feel like a lot of how I learned classroom management was observing and watching and then trying to mirror with what she was doing but try to adapt it to my own…'Cause I can't do exactly what someone else is doing, 'cause it's not me…Learning how to adapt that and still be stern and seeing the value in structure with some fluidity in that as well. I've learned most of my classroom management from I think co-teaching, because of her attention-getters. I've used hers, but then she said I should create my own, so I would do that depending on the lesson…Just like adapting and modifying (1st grade, teacher candidate).

Teacher candidates had discussed co-teaching strategies with other teacher candidates in seminar classes. From those conversations candidates believed that instructional minutes were used more efficiently to meet diverse learning needs when there were two teachers in the classroom. In addition, teacher candidates stated that the co-planning process helped them gain a deeper understanding

of how to plan and pace cohesive curriculum, develop an ability to implement constructivist lessons, and create an environment that provided natural opportunities to ask pedagogical and pedagogical content knowledge questions. “I always would ask her why? Why did you do this? Why is this considered a better practice?” (middle school math, teacher candidate).

Questioning Skills

Additionally, teacher candidates gained a deeper understanding of how to ask questions that encouraged students to analyze, explore, and dig more deeply into the content. One teacher candidate commented,

> I can’t ask the better questions quite yet, so I like that I can hear my CT ask those questions when we are team teaching or even when I am lead teaching and she interjects better questions. Then the next time I teach that lesson, I know what questions to ask and I will know what questions get students to think more critically or better understand the content (middle school math, teacher candidate).

Improving questioning skills also allowed teacher candidates to differentiate instruction to ensure all learners were engaging in the content.

> There were different situations where a student wouldn’t understand how I explained but could easily follow how my cooperating teacher explained it and vice versa. They were also able to benefit by having either I or my cooperating teacher pulling out kids when necessary for more individualized instruction. This helped keep kids up to pace and even helped with behavior issues (2nd grade, teacher candidate).

Furthermore, “the co-teacher would have a purposeful vision on what demographic of student was going to be assisted the most

during a particular lesson. This allowed for the assistant to help deliver the material in either a faster or slower rate, and/or in a more personal manner (2nd grade, teacher candidate)." The cooperating teacher constantly modeled best practice for the teacher candidate, and eventually, the teacher candidate was able to implement similar management and instructional strategies.

Collaboration

In this study, cooperating teachers maximized the resources to meet the professional needs of the teacher candidates, learned additional research-based instructional strategies, established a professional relationship with teacher candidates based on mutual respect, felt more optimistic about the future of the education field, felt less isolation, and felt increased professional growth. "This model has pushed me professionally to develop clear organizational formats to help my teacher candidate see how I teach and help the transition for them to teach my students with precisions (1st grade, cooperating teacher)." Pedagogically, data show that cooperating teachers perceived the co-learning model as an effective way to differentiate instruction. This helped them meet the needs of all levels of learners in the classroom in a more timely manner and model collaborative behavior to students. Additionally, the co-learning model facilitated development of professional partnerships that enhanced the ability to plan, instruct, and engage P–12 students in the learning activities, and assess the students' academic learning gains. For example, "students liked being able to separate into groups for re-teaching or for offering extension opportunities; team teaching gave us an opportunity to blend our styles which was great for the students, since each of us had distinctly different strengths (2nd grade, cooperating teacher)."

Cooperating Teacher as Learner

A theme that emerged from the data was that the cooperating teachers also gained new knowledge in this process from the interactions among students, the cooperating teacher, and the teacher candidate. Cooperating teachers expressed the need to be learners

in this collaborative model, as the teacher candidate could provide innovative ideas that could enhance curriculum, instruction, and assessment. "The cooperating teacher has to be a learner during the co-learning process, because I often learn new strategies from my teacher candidate either in the planning sessions or in the instruction." One cooperating teacher stated she "grew as a teacher and had the ongoing opportunities to collaborate." In the following interview transcript, she elaborated.

> I learned from my co-teacher. She is a whiz at technology! I know technology and SIOP better because of her. Also, I learned about current special education and neuroscience and learning research from her. She had ideas I found refreshing and innovative. We spend SO much time in collaboration: planning, reflecting, formative assessment discussions, etc. We were able to employ new strategies for instruction and group configurations because there were two of us. I strongly feel that in terms of my professional development, I was able to redefine some "best practices" and ways to better engage MORE kids, MORE often and with greater success and outcomes for KIDS! I improved my repertoire of teaching strategies and practices and engaged in more frequent more meaningful collegial dialogue (kindergarten, cooperating teacher).

In addition, one cooperating teacher said, "You have to be humble and learn from the teacher candidate…they have a lot of great strategies to offer" (2nd grade, cooperating teacher).

P–12 Learning

Drawing from classroom observations, interview transcripts, and end-of-experience surveys, the P–12 students in this study appeared to be learning from both the cooperating teacher and the teacher candidate; asking questions of both teachers and responding to discipline from both teachers was evident across all observations. Additionally, when the co-learning trainers reviewed learning

data from the co-teachers' work samples, it was evident that the P–12 students demonstrated learning gains from the candidates' instructional units. Moreover, P–12 students in this study appeared to value highly having the support of two teachers and felt that their own learning and behavioral needs were met. One teacher candidate commented,

> Our students were able to learn equally from two different teachers, sometimes learning two ways to come to an answer or getting to work with whatever teacher best suited their needs. They also saw us as equals in the classroom, especially when watching us teach at the same time. I think we set a great example for them when it comes to cooperation and working together (3rd grade, cooperating teacher).

As a teacher candidate was preparing the students for her departure at the end her student teaching experience, one second grade student commented, "So we are only going to have one teacher? What's the point?" The national call for improvement in clinical experiences encourages exploration of potentially more beneficial models for candidates, teacher preparation programs, and the P–12 schools that support clinical placement. The co-learning model is emerging as a successful approach to this problem. A cooperating teacher stated, "My teaching load was shared, but the outcome for the students was doubled!"

Challenges

In teacher education programs, teacher candidates are often trained to think of themselves as "guests" in their student teaching classrooms and to respect and follow the structures and processes that the cooperating teacher has in place. However, under the co-teaching model, teacher candidates are asked to co-teach, co-plan, and co-assess with sometimes very little background knowledge and experience to do so. Moreover, because they are trained to be "guests," they often feel that they are stepping on the cooperating teacher's toes or being disrespectful when they offer alternative

solutions, let alone telling the cooperating teacher what *they* will be doing during a particular lesson. During check-in sessions with the cooperating teachers in this study, it became apparent that cooperating teachers *do* want the teacher candidates to take more initiative in the planning, teaching, and assessing they were doing together.

This is an interesting challenge for teacher education programs using the co-learning model, as it assumes that all teacher candidates are ready to fulfill those requirements of taking the lead on planning, teaching, and assessing. This leads to a second challenge of the co-learning model for student teaching. Do teacher candidates get enough "full-time" teaching under this model? Cooperating teachers in the study stated that they thought it was crucial for the teacher candidates' future success to be given opportunities to "solo" plan, teach, and assess.

Significance of the Study

While co-teaching is not a new phenomenon, applying its fundamentals to a co-learning model that investigates the fluidity of knowledge transmission among the students, cooperating mentor teacher, and the teacher candidate is a relatively new area of study. Our data supported this expansion of the co-teaching model. Our emphasis was to demonstrate how cooperating teachers and teacher candidates grew professionally and formed a dynamic learning community with their students. It explored the transmission of professional knowledge among the cooperating teacher, the teacher candidate, and the P–12 students and sought to discover what new teacher knowledge is gained when the P–12 student, the cooperating mentor teacher, and the teacher candidate become *joint sojourners* (Brantmeier, n.d.) in a co-learning model.

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Becoming Culturally Responsive: A Framework for Teacher Development

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Abstract

This paper proposes a framework for the development of culturally responsive practices in beginning teachers to meet the needs of diverse students in multicultural classrooms. The framework describes the trajectory beginning teachers undergo toward becoming culturally responsive and discusses how teacher educators in liberal arts colleges can support their students in becoming effective educators who are successful in bringing cultural knowledge into the classroom.

Keywords: **beginning teachers, culturally responsive**

In a small bay in Southeast Alaska sits a landmark known as Pillar Rock. At low tide, the rock is truly a pillar, but at high tide only the tip is visible above the water. The Tlingit people, an Alaska Native tribe who lives in the coastal areas from Ketchikan to Yakutat, Alaska, tell two different stories about this rock. The story they tell is determined by the moiety, or matrilineally determined descendent group, to which they belong. Those in the Raven moiety say the rock was formed when six sisters, stranded by the incoming tide, stood on top of each other saving the youngest at the top, while those in the Eagle moiety are not concerned with the origin of the rock itself, but tell the story of a young boy, also caught by the tide, who was plucked from the rock by a passing eagle just before he drowned. For the Tlingit, there is no conflict between these two stories; both of them are used to explain the significance of this landmark.

This dual understanding of Pillar Rock is a good metaphor for educators working toward culturally responsive teaching. They, too, need to hold two "stories," that of their own culture and that of their students, without making one the dominant narrative while marginalizing the other, a practice that can lead to conflict in the classroom (Sarris, 1993; Erickson, 1987). However, Western rationalist traditions make acceptance of differing realities difficult (Atleo, 2004). This is an opening for those of us in liberal arts colleges where the practice of cultivating an understanding of multiple perspectives is an important goal. Consider, for example, that one of the stated educational outcomes of the liberal arts college where I teach is "respecting and learning from the diverse perspectives, identities, ways of life, and philosophies of others" (Colgate University, 2013).

Beyond general understandings of diverse perspectives, teachers need cultural knowledge that is both accurate and useful, as well as the capacity to present it in meaningful ways. While there is a recognized need for the inclusion of culturally responsive pedagogies and culturally based content in multicultural classrooms (Fasching-Varner & Dodo Seriki, 2012; Hayes & Juarez, 2012; Starnes, 2006), teachers are not well prepared to implement these strategies in

the classroom (Hollins & Torres-Guzman, 2005; Reyhner, Lee & Gabbard, 1993). The framework I propose here for the development of culturally responsive pedagogy addresses this deficit in teacher preparation.

The Need for a Framework

Culturally responsive teaching, which draws on the knowledge and pedagogical norms of local communities (Beckett, 2011; Gay, 2010; Ladson-Billings, 1995), has gained popularity as a strategy to address the achievement gap between White and minority students because cultural mismatches between home cultures and that of schools has been blamed for low minority student achievement (Kanu, 2009; Villegas & Prieto, 2006; Aikenhead & Huntley, 1998; Lipka, 1998). However, there are significant challenges to enacting approaches that rely on knowledge and pedagogies outside the teachers' own cultural background and experiences. Further, the literature on culturally responsive schooling is primarily composed of studies that derive culturally responsive pedagogy inductively through research on effective teachers of minority students (c.f. Johnson, 2002; Lipka, 1998; Ladson-Billings, 1995). Because the focus of these studies is on already successful teachers, the difficulties faced by teachers in becoming culturally responsive is not part of their theory building. The framework for the development of culturally responsive teaching proposed here addresses this gap in the literature, providing a way to understand how teachers learn to become responsive to the needs of diverse classrooms. The framework also provides guidance for teacher educators in liberal arts colleges to support the development of their pre-service teachers.

Method

The framework is the result of two qualitative research studies on the practices of teachers of Alaska Native students. The first study involved three teachers in a summer program for Alaska Native youth focused on bringing together Western and indigenous approaches to science and math. I was both lead teacher and researcher in this study. I call the summer program Camp

Nayaadi, a Tlingit word meaning salmon that has been half-cured in a smokehouse, reflecting the idea that teachers and students were working toward fuller understandings. The research focuses on the experiences of the three other teachers, all of whom are White, beginning teachers: Jill, Lucy, and Pamela[1]. During the camp, the teachers guided students on projects incorporating traditional knowledge to be entered in the Alaska Native Science Fair, assisted with cultural activities such as storytelling and art, and accompanied the students on a wilderness canoe trip.

The second was an ethnographic study of three White beginning teachers in Alaska Native villages using Math in a Cultural Context (MCC), a mathematics curriculum based on Yup'ik Eskimo elders' knowledge developed at the University of Alaska Fairbanks (Kagle et al., 2007). The Yup'ik live in coastal Southwest Alaska, from almost as far north as Nome down the coast all the way into Bristol Bay. The specific curriculum, Designing Patterns, a 4–6th grade unit, developed students' understanding of area through the exploration of a novel way to cut out a rhombus shape demonstrated by elder Winifred Beans of St. Mary's, Alaska. The study followed the teachers from the two-week professional development course on the unit, focusing on the mathematical and cultural content in the curriculum as well as culturally aligned pedagogical approaches, through to implementation in their classrooms.

Both studies employed primarily qualitative approaches, with data collected through classroom observations, interviews of both teachers and students, and video analysis. The data from all of these sources were analyzed through open coding to develop the categories ultimately used to build the stages of the framework through a grounded theory approach where the concepts constructed are "'grounded' in the data themselves" (Charmaz, 2006, p. 2). The MCC research also included a quantitative analysis of math achievement levels as demonstrated through pre- and post-tests on the curriculum topics.

[1] The names of the teachers are all pseudonyms, while elders' names are given in full in order to acknowledge their contributions.

Framework for the Development of Culturally Responsive Pedagogy

The proposed framework is based on a series of experiences that have the potential to build the skills, dispositions, and knowledge necessary for successful culturally responsive pedagogy. The goal of the framework, shown in Figure 1 below, is to describe a process by which teachers develop as culturally responsive educators. While this trajectory was developed in the context of teaching Native students, it is equally useful in other situations involving cross-cultural teaching.

Figure 1. Framework Overview

Beginning Experiences: Encountering Another Story

Christine Sleeter (1995) argues that White teachers come to the multicultural classroom not as blank slates but with a "well-developed worldview" (p. 21) about minority groups. Continuing the Pillar Rock metaphor, we can say that the majority of teachers come to the classroom with one "story," that of their dominant White culture. The trajectory towards culturally responsive pedagogy therefore begins with an experience that is powerful enough to shake the very foundations of this worldview.

My research with teachers at Camp *Nayaadi* confirmed Sleeter's findings of established worldviews of teachers and further specified this worldview as encompassing a doctrine of color-blindness, which led them to minimize differences in the worldviews of their Native students due to their insistence on, as Jill put it, "treating all my students the same." Along with color blindness, the worldview of the teachers also contained deficit thinking, reflecting a framing of Alaska Native culture as problematic, at least in its interactions with schools. Differences the teachers did identify between their Alaska Native and White students were framed in terms of deficits

such as a "lack of home support" or "living in poverty." Finally, the teachers' worldviews included a self-described lack of cultural knowledge that they reported limited them in being able to bring such knowledge into the classroom.

In this stage of the trajectory, teachers need to have an experience that unequivocally demonstrates that not everyone shares their "story," but rather students and their communities have different cultural understandings that are as equally valid as their own. This shift has been described by researchers in the field of multicultural education as a "personal transformation" (Nieto, 1999, p. 124) or an "awakening" (Frankenberg, 1993, p. 12) necessary to become effective in multicultural settings. I documented this with the teachers in my study. Pamela was particularly struck by Tlingit elder Liana Young's stories, including the Pillar Rock story, which made her realize that the Tlingit community has understandings different from her own.

> I've lived here all my life, I've seen the places they were talking about every day, but I never knew what they meant. For me to see things through Liana's eyes means I might be able to see how my Native students see their environment, their truth about a place.

Another example of a teacher's encounter occurred at the MCC Summer Math Institute where teachers learned directly from Yup'ik elders, who were encouraged to follow their own pedagogical practices. Teachers were particularly struck by the use of silence by the elders. For example, a Yup'ik elder silently demonstrated a method for producing a rhombus and four congruent right triangles by folding a piece of paper and making one cut, which the teachers then practiced on their own. A teacher commented, "Theresa [the elder] didn't have to say a word and I learned how to do it!" Another teacher said, "My students always tell me I talk too much, but I never listened." This experience led several teachers to incorporate silence in their pedagogies.

Each of these examples points to the importance of an encounter

that precipitates a paradigm shift. For such a shift to occur, the teacher needs to perceive a conflict between what has been viewed as legitimated knowledge and what is newly being perceived through indigenous knowledge, moving the teacher's thinking and practice in new directions. While research on professional development for culturally responsive teaching points to the importance of a cultural immersion experience as the most effective way to promote the necessary shifts in thinking (Finkel & Jones, 2002), teacher education within a liberal arts college can also be an effective site for such encounters. Teacher educators can help students to reflect on the ways in which experiences with people and ideas from diverse cultures, such as study abroad programs, coursework, and routine encounters on a diverse campus, broaden their thinking and help them to respond to others more openly.

An encounter that results in a paradigm shift is the catalyst for further development toward culturally responsive teaching. The outcome of this encounter needs to represent recognition of the reality that knowledge often marginalized in Western schooling and discourse can be central to the lives of students, leading to a desire for further cultural knowledge.

Gathering Cultural Knowledge for Teaching

When an encounter results in the desire to bring cultural knowledge and culturally aligned pedagogical practices into the classroom, the teacher next faces the challenge of obtaining such knowledge. In this section I argue that while there are multiple means available to teachers for doing this, culturally-based curriculum materials, when they exist, are a particularly effective method for teachers to gain knowledge needed for culturally responsive teaching. I also argue that liberal arts colleges are well positioned to orient students to these resources.

The knowledge needed for culturally responsive teaching is often framed as "funds of knowledge" (Gonzalez, Moll & Amanti, 2005) and defined as "historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being" (Moll, 1992, p. 133)

which researchers and practitioners work with communities to surface and adapt to the classroom. Culturally based curricula and associated professional development, such as that developed by MCC, can facilitate teachers' access to the knowledge of community experts and support them to make cultural connections in the classroom (Aikenhead, 2006; Nelson-Barber & Estrin, 1995).

While undergraduates do not typically have access to such professional development, liberal arts colleges support the development of cross-cultural understanding through coursework in disciplines such as anthropology, history, and area studies. For example, following the example of anthropologists and teachers Edie and Victor Turner, who had students perform rituals from diverse cultures "to put students more fully inside the cultures they were reading about in anthropological monographs" (Turner & Turner, 1982, p. 41), I have students in my Arctic cultures course learn and recite an Inuit epic and then reflect on the experience of being immersed in the role of Inuit storyteller.

Negotiating Culturally Based Teaching in the Classroom

Even with the best curricula and resources available, cultural knowledge still needs to be brought inside the classroom walls. My research demonstrates that the path for doing so is not simple, but involves complex interactions between students, teachers, and communities; that is, the ability to teach cultural knowledge is dependent upon teachers negotiating a space for that knowledge within the classroom. This stage is in some ways unexpected by advocates and practitioners of culturally relevant pedagogies because the advantages of bringing local knowledge into the classroom seem clear, so it can be perplexing to teachers who find their attempts to do so are not automatically embraced by their students or the local community. An explanation for resistance on the part of communities can be in part attributed to the fact that culturally based teaching challenges the assumed purpose of school, which has historically focused on assimilation. Minority communities therefore see that a primary role of the school is to educate students about and within the normative mainstream culture, described as

the "culture of power" by Delpit (2006); therefore, teaching that focuses on knowledge found within the community itself conflicts with the "inherent commands of the classroom environment" (Sarris, 1993, p. 190).

Given these contradictions, authority to teach cultural knowledge needs to be seen as negotiated terrain for educators; this approach breaks from general theory on culturally responsive teaching, which posits that the onus for the inclusion of culturally-based curricula is primarily on the teacher, and instead acknowledges the complex interactions between teachers, students, and community needed to overcome resistance. What is proposed in this model therefore is a "culturally negotiated pedagogy" (Lipka, 1998; Lipka, 1994; Stairs, 1994) where the inclusion of cultural knowledge in schools is dependent upon a negotiation between students (and, implicitly, communities) and the teacher to determine how this knowledge will be enacted in the classroom.

Unsurprisingly, teachers in Camp *Nayaadi* confronted resistance to their teaching of cultural knowledge. One teacher, Pamela, described this resistance as a "wall" between her and her students:

> It's kind of like a wall. They [Tlingit students] are quiet. And they're a little guarded and a little defensive, especially when you're talking about culture because they don't want you, a White person, telling them anything about culture, because you're not Native.

The presence of this "wall" led to teachers' perceptions that they did not have permission to bring certain aspects of indigenous knowledge into the classroom. Pamela identified it as an issue of who "owns" cultural knowledge:

> Especially when I was trying to tell them something with cultural significance to it, a lot of times the Native kid would jump in and say something like, wait a minute, I own that knowledge, not you.

Confronted with this resistance, each of my participants entered into what I construct as a process of negotiation with students. They approached this from different perspectives based on their perceptions about how indigenous students viewed them, as well as their own sense of authority in teaching cross culturally. This interaction between the teacher's perceptions and their students' reactions to these perceptions forms the basis of the negotiation.

Pamela's negotiation with students is based on her understanding of who has ownership of indigenous knowledge. She perceived students not wanting her to teach cultural knowledge because they "owned" it rather than her. As a result of this perception, Pamela concentrated on her own claims of ownership of this knowledge in negotiating the space to teach cross-culturally:

> [Alaska Native culture] is just part of my heritage, having been born and raised here. I've always been around, with, and among Native people. It's not my whole culture, but it's part of my culture and heritage of Alaska.

However, Pamela acknowledges the resistance her students exhibit toward her. "Native students when they have a non-Native teacher are always a little bit wary, unapproachable." To get past this "wall," as she terms it, she describes her actions as:

> Simply just sort of ignoring it until it goes away. And pretend it's not there. I sort of just don't really acknowledge it.

Later in the interview, she described a more pro-active approach:

> Yeah, you can always feel with Native students that wall that goes up, until they trust you, until they see you respecting their culture, until they see you not siding with just the white kids, they need to see all that before they trust you.

These two approaches work in tandem for Pamela: she ignores

the behavior that she interprets as resistant while at the same time she actively tries to create conditions that will eventually build trust. Pamela believes that once such trust exists, "Native students open up and they're just as loud and obnoxious as everyone else."

Lucy's negotiations were based on feelings of respect for her Alaska Native students. She perceived that Alaska Native students suffered from a lack of respect, not only at school but also in their own community:

> I think that many of those kids don't get that [respect] at home; in fact, they get the opposite, being ashamed of their culture, being ashamed of their people.

In negotiating her authority to teach Native cultural knowledge, Lucy stressed the importance of her ability to communicate respect:

> I think I modeled respect for the culture, and interest in the culture. And kids saw me as a role model respecting and being interested in their culture.

Lucy also opened her classroom to the Alaska Native community by frequently inviting cultural experts to teach with her. For example, she did a unit on storytelling and had elders come to her classroom to tell Tlingit stories.

Jill's approach to negotiations was based on the demonstration of reciprocity; that is, the teacher learns from her students as well as teaches them:

> They were really willing to let me share what I knew [about Tlingit cultural knowledge]. And they knew that I was willing to learn from them. And, you know, that makes a nice balance."

Jill locates two sites for her authority in doing this. First, she talks about having cultural knowledge from her undergraduate work in Alaska Native studies. She also felt more empowered to

bring Native knowledge in the classroom after receiving "permission" to do so from an elder who told her it was a "beautiful thing that people were embracing [indigenous knowledge]."

By increasing their sense of authority to teach cultural knowledge, these teachers moved away from a model of schooling that devalues indigenous knowledge toward one where such knowledge is an integral part of the curriculum. However, bringing indigenous knowledge into the classroom put the teachers at greater risk of venturing into the realm of hegemony through its appropriation. These hegemonic tendencies need to be seen as a counterbalance to suppressive impulses and therefore their appearance can be interpreted as part of the trajectory away from education that marginalizes cultural knowledge.

Pamela's assertion that Tlingit culture is a "part" of her own culture can be seen as a form of hegemony because it reduces Tlingit culture to enriching her Western one rather than being seen on its own terms. So, while the teachers speak of wanting to be a part of Tlingit culture, they do not want to examine the implications of this for their own culture. This role of Native culture as an "add on" to Western culture is hegemonic in nature (Mason, 2006) and leads Tlingit students to feel the need to guard their knowledge against the impacts of such hegemony, a result Pamela herself perceived and described as a "wall" between herself and her students.

Lucy's belief that she is successful at modeling pride in Native students' culture, while at the same time expressing the belief that the Native community does not share this pride, is problematic because it privileges her role in instilling respect for culture in her Native students over those in the students' own community. Thus, Lucy's belief that she provides something she presumes the community cannot problematizes her relationship with those in the community. However, her reliance on Tlingit cultural experts in the classroom helps to mitigate this effect.

Finally, Jill's ideas about reciprocity are undermined by her assertion that Tlingit students don't know much about their culture because it compromises her ability to teach in the reciprocal manner she describes; that is, her ability to use and build on students'

knowledge is lessened by her belief that they do not possess such knowledge, or possess enough of it. These three cases demonstrate that teachers enter the negotiation in ways that reflect their own understandings, priorities, and pedagogical approaches. They also show that some approaches to the negotiation have better outcomes in terms of the difficult task of walking the line between hegemonic and suppressive tendencies, with the reciprocal approach taken by Jill, while not without issues, best able to avoid the pitfalls on either side of the equation.

While the paths taken by different teachers will diverge, the process of negotiation described is both complex and obligatory. For teachers to engage in this process in ways that offer the most hope for positive outcomes, they need to be well prepared for its challenges. Education foundations courses that address the complexities and uncertainties of teaching can help build the resilience teachers will need. Further, those educated in liberal arts institutions become well-acquainted with the processes of negotiations at play as the closer relationships between students and faculty nurtured by such institutions provide opportunities for students to negotiate critical aspects of their education. Teacher educators can help students to understand the processes they themselves have engaged in as a way to support their transfer to the classroom when they are called to undertake similar negotiations from the teacher side.

Toward a Pedagogical Third Space

When successfully negotiated, the inclusion of culturally based content and pedagogies leads to the development of a "third space" that "brings academic content into dialogue with indigenous cultural knowledge that has historically been left outside the schoolroom door" (Webster et al., 2005, p. 35), implying both a pedagogical shift toward indigenous knowledge as well as a challenge to asymmetric power relations between minority communities and schools. A third space can be thought of as the holding of two stories by the teacher, similar to the way that the Tlingit can view Pillar Rock in two distinct ways. While continuing to operate within the structures of mainstream schooling, the teacher infuses

aspects of local culture into the classroom, giving space to pedagogies that are in tune with community practices and values.

In this section I describe two examples of a third space from my research. First Jill describes how she plans to change her approach to a particular lesson as a result of her experience with Tlingit culture at Camp *Nayaadi*:

> One thing that I was thinking about is that I always take my kids to [the salmon hatchery] and they do a dissection of the fish. I think what I would like to do is not just to do a dissection, but to use some of the fish for smoking or for eating or filleting. Teach them how to cut the fish themselves. Instead of just dissecting it and looking at the innards, let's be more useful with it and use it as it was meant to be.

Jill takes a typical school activity (dissection) and combines it with an activity engaged in by the local community (cutting and smoking salmon). This change infuses the lesson with cultural knowledge, which she equates with the Western skill of dissection. This lesson also operates at the level of Tlingit values. Jill's explanation that her motive for including the fish cutting is to "be more useful with it" reflects her incorporation of Tlingit cultural values of all things having a purpose and not wasting resources. The changes Jill proposed lessen the conflict between the values of the school and that of the community because it no longer violates community norms about the use of resources. Such harmony between students and pedagogy is a key characteristic of the third space (Tharp et al., 2000).

The second example of a third space comes from an observation of a White teacher using the MCC math curriculum to teach a lesson on conservation of area. The teacher, Sarah, incorporated the Yup'ik pedagogical strategy of silence, which had been modeled to her during the professional development as described above. Sarah introduced the lesson by having students gather around her while she sat in a student's desk. She then silently demonstrated how

to cut out and arrange geometric shapes on a rectangular pattern piece. During the demonstration, her students narrated her actions, identifying the shapes and how she was placing them, and offering suggestions for how to complete the project. The use of this culturally based pedagogical strategy, with Sarah choosing silence over didactic talk to introduce the lesson and its concepts, changed the dynamics in the classroom, opening up a third space where the students were able to actively engage in the lesson. Later in the lesson, Sarah reverted to a mainstream teaching methodology, standing in the front of the room and calling on students to answer the questions she posed, a pedagogical approach known as the Initiate-Respond-Evaluate participation structure (Cazden, 1988). This more typical pedagogical structure replaced the third space operating in the classroom and suppressed participation in the lesson, with the formerly talkative students barely responding to the questions posed.

The development of a third space in the classroom is the outcome of the effective incorporation of culturally based pedagogies and content by a teacher who has successfully negotiated space for such an approach in the classroom. The teachers who attended the MCC Summer Math Institute had the advantage of experiencing a third space themselves within the professional development, which helped them to create such spaces in their own classrooms. Likewise, teacher educators can also provide such experiences for students by exposing them to authentic uses of non-Western pedagogical strategies and content. For example, I have students tell a traditional Inuit epic, taking on the role of a traditional storyteller, and then reflecting on this experience of mimetically experiencing another culture. Such experiences of a third space within teacher education should facilitate students' ability to foster these spaces themselves.

Liberal Arts Colleges and the Development of Culturally Responsive Educators

The trajectory toward culturally responsive pedagogy is a complex undertaking that requires explicit and targeted support by

teacher educators. Teacher educators in liberal arts institutions are uniquely positioned to provide the support needed because of the nature and flexibility of the liberal arts environment. The trajectory described provides a framework for understanding how the capacity for being culturally responsive is developed. Understanding this process can help teacher educators respond constructively to the imperative to meet the needs of the diverse classrooms our teacher education students will serve.

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