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Editors

Editor's Note:

This, the second issue of our journal, tackles the difficult questions about effective teaching preparation in the 21st century. Better yet, once we feel like we have adequately prepared teachers in today's work force, how oh how do we KEEP them?

Topics in this issue range greatly, including mentoring models to STEM teacher recruitment, new standards for today's teachers, the use of PLCs and inquiry to inform instruction, expectations of aspiring secondary school principals, and the direct effects of teacher retention on student achievement. What do all of these have in common? Undoubtedly, they remind us that the interconnectedness of student outcomes and teaching effectiveness cannot be underestimated. As we continue to gauge the ever-changing needs of students, and therefore teachers and administrators, in today's classrooms, let us not forget the importance that research and the sharing of best practices can have on our professional growth and in the advancement of our profession.

For all who submitted articles and took the time to review articles for this issue, we extend our appreciation for this time and effort. The quality of work we are able to contribute depends on the dedication, research, and classroom experiences of other educators. Sincerely, we thank you.

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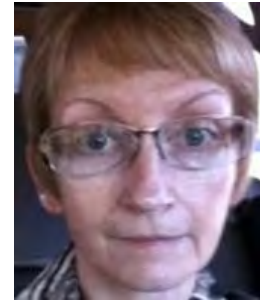
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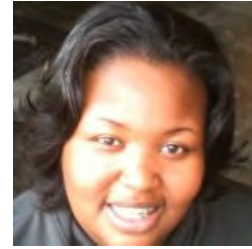
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Dr. Linda Serro is currently the Director of The Lucas Center for Faculty Development at Florida Gulf Coast University in Fort Myers, Florida. She has developed programs for new faculty and implemented faculty learning communities on a variety of topics to enhance teaching in higher education. Dr. Serro also holds an appointment in the College of Education as a professor in reading education. She teaches courses in literacy education and developed a professional development school course in early literacy methods and a doctoral course in historical perspectives of literacy. She currently conducts research on supporting the pedagogy of university faculty.

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With over fifteen years in the field of education and youth development, Claytisha Walden has served as a school principal, college professor and currently serves in the New York State Education Department. She holds advanced degrees in education and leadership with a Doctor of Education in Educational Administration from California Coast University and as well as a Doctor of Philosophy in Christian Education from Newburgh Theological Seminary

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Dr. Webb has thirty-eight years of experience in public education as a teacher, an elementary principal, and a superintendent. Presently, she is an Assistant Professor for the Texas A&M – Commerce Campus in the Educational Leadership Department. She enjoys teaching online and getting to know her students.

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Investigating a Model of Mentoring for Effective Teaching

Dr. Lori Bird and Dr. Peter Hudson

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Mentoring has become a crucial component of preservice field experiences, such as student teaching, and should be purposeful and intentional with its results, not left to chance. However, "mentors seem to need exposure to a variety of models of mentoring in their training as well as practice in the observation and analysis of interactions between mentor and mentee" (Harrison, Lawson, & Wortley, 2005, p. 290). Indeed, models of mentoring need to be investigated to determine applicability to varying contexts. This study currently investigates one particular model of mentoring for effective teaching. Hudson, Skamp, and Brooks (2005) describe five factors of mentoring that are utilized by mentors to support student teachers through the field experience process. The five mentoring factors are: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback. The purpose of this study was to investigate the student teachers' perceptions of the five factors of mentoring and address the following question: What are the student teachers' perceptions of the mentoring factors that contributed to success in their student teaching experience? The theoretical framework for this study, the five mentoring factors and associated attributes and practices, are explained in the following sections.

Personal attributes

Effective mentors draw upon personal and interpersonal skills to engage with their mentees. These personal attributes focus on maintaining a strong and trusting relationship with the mentee (Moir, 2009; Moir, Barlin, Gless, & Miles, 2009; Udelhofen & Larson, 2002). Danin and Bacon (1999) support the mentor's need for effective communication using personal attributes, particularly when the mentor was "supportive, and willing to listen" (p. 204). This supportiveness can arrive in terms of professional and emotional support as a way for the mentor to interact with the mentee (Beck & Kosnick, 2002). In a study of 149 mentoring teams, Kilburg (2007) found that when new teachers did not receive emotional support from their mentor, they were "more apt to have anxiety, insecurity and lack of confidence" (p. 297). Mentoring support includes encouraging the mentee to reflect teaching experiences towards developing a teaching identity (Pitton, 2006). Glenn (2006) describes the relationship between mentors and mentees as a collaborative "give and take," where the mentors and mentees care about each other personally as well as professionally (p. 5). Without this kind of supportive relationship, the impact on the mentee's practice may be limited. Finally, good mentors set an example for professionalism in teaching. Other common dispositional characteristics for mentors can include authenticity, gentleness, enthusiasm, patience, consistency, and a positive attitude (Hurst & Reding, 2002).

System requirements

Preservice teachers enter schools with little knowledge of the organization and the politics of school life. Mentors help them navigate the new context in which they work by learning to understand the complexities of the school's cultural context. They need opportunities

to gain theoretical and practical understandings of schools as organizations (Achinstein, 2006) and need help navigating the school site and the district. Mentors provide important information about school routines and cultural norms (Bartell, 2005). Mentors help their mentees understand teaching within the school culture by co-investigating curricula documents available to the school. Mentors do not just focus on classroom-based learning; they also focus on organizational contexts in which classrooms are embedded (Achinstein, 2006). Importantly, early-career teachers seek specific direction regarding technicalities such as curriculum, school policies, state standards, and student assessments (Grossman & Thompson, 2004). Mentors assist the mentees to meet advocated standards by unpacking their teaching through the system requirements, particularly through mandatory documents such as curriculum and policies that help to regulate the quality of teaching practices (Hudson, 2007). The standards-based teacher evaluation system is underpinned on a common conception of teaching, developed from empirical and theoretical literature on effective teaching (Danielson, 1996; Danielson & McGreal, 2000).

Pedagogical knowledge

Shulman (1987) focused attention on the foundational importance of pedagogical content knowledge, including categories of teacher knowledge such as classroom management, time allocation, and planning as well as understanding of the common conceptions, misconceptions, and difficulties that learners might encounter. Student teachers, similar to first year teachers, acquire knowledge of their students, and develop routines and practices that integrate classroom management and instruction (Kagan, 1992.)

Practical pedagogical knowledge translates into teaching practices that can demonstrate skill levels. Assessing student teachers' pedagogical knowledge is usually operationalized by performance exams that are required for licensure. Danielson's Framework for Teaching (2007) is widely used as a way to assess teacher pedagogical knowledge. Based on a review and synthesis of empirical and theoretical research on what teachers should know and be able to do in the classroom, Danielson's framework includes standards that focus on behavioral responsibilities and competencies, rather than specific content or subject matter knowledge. For example, learning activities, materials, and strategies must be aligned with instructional goals, while appropriate to both the content and the students. Incorporation of formative assessment strategies should provide diagnostic opportunities, allowing student teachers to make adjustments during instruction. The Danielson framework provides a comprehensive assessment of teaching practice, yet is general enough to apply to all subject areas and grade levels (Strong, 2005).

Modeling

The mentor's modeling of teaching practice is extremely important to the mentee's development (Darling-Hammond et al., 2005). Effective mentors are often viewed as instructional coaches and are models of best instructional practices themselves (Moir, 2009). They are usually experienced professionals regarded as master teachers by their colleagues (Trubowitz, 2004); however, mentor selection processes may not be as stringent in some schools compared with others. Effective mentors model to the mentee teaching practices as tangible evidence of what works and what may not work (Moir, 2009). Roehrig, Bohn, Turner, and Pressley (2007) confirmed successful mentoring occurs when the mentor models effective teaching practices. The quality of modeling and the opportunities for mentees to observe and

engage in practices appear key to successful pedagogical development (Darling-Hammond, 2006), and can assist mentees to enact such pedagogy themselves. Feiman-Nemser (2001) promotes the kind of mentoring that "cultivates a disposition of inquiry, focusing attention on student thinking and understanding" (p. 19). The effective mentor models pedagogical practices and focuses on instructional issues that student teachers might not see by themselves (Strong & Baron, 2004).

Feedback

The provision of frequent feedback is cited as the single, most important action that mentor teachers take when working with their mentees (Rudney & Guillaume, 2003). Constructive feedback addresses pedagogical issues such as classroom management (discipline and behavior issues), assessment, planning, preparation of resources, and other mentee needs (Evans-Andris, Kyle, & Carini 2006). Mentors provide feedback in the form of written and oral comments and the feedback is presented with diplomatic honesty (Glenn, 2006) with the intention to build confidence, positive attitudes and pedagogical skills in the mentee (Hudson, 2007). Feedback is specific to the mentee's needs, which requires a willingness from the mentee to engage in a two-way dialogue. Feedback is most helpful when descriptive and focused on specific teaching practices (Bartell, 2005).

Wang, Odell, and Schwill (2008) report that mentees benefit when mentors include observations and discussions about teaching. Strong and Baron (2004) ascertain that the "only reliable way to measure the nature and quality of teaching practice is through classroom observation" (p. 51). During the observation process, mentors identify elements of high-quality instruction and areas for improvement and provide feedback to the mentee accordingly (Nielsen, Barry, & Addison, 2008). In relation to feedback and reflection, Pitton (2006) promotes the use of the observation cycle with pre- and post-conferencing as an effective process for gathering data about the mentees' lessons. Feedback is intended to help mentees to reflect on strategies for strengthening their teaching towards improving their students' learning. The mentoring process prepares mentees for the formal evaluation that will appraise the mentees' practice (Borman & Kimball, 2005).

In this study of student teachers' mentoring experience, the responsibilities of the mentor teacher are described according to the five factors outlined by Hudson (2007). The mentor teachers' application of these five factors during their work with student teachers has a positive impact on the initial success of the student teacher (Cartwright, 2008). This mixed-method study investigated the impact of the five mentoring factors on the growth and development of student teachers from a Midwestern university in the United States. Although researchers have demonstrated that mentoring correlates with the retention of new teachers in the profession of teaching (Strong, 2005), there is less evidence of the impact that mentoring has on the student teachers, according to the perspectives of the student teachers themselves.

Method

Participants and context

The perceptions of student teachers regarding the impact of mentoring on their student teaching experience were obtained from 218 student teachers that were each assigned to a mentor teacher in a K-12 public school. Student teachers were placed in locations according to their content area preparation in elementary education, secondary education, or special education. The student teachers completed the Mentee Perception of Student Teaching (MPST) survey upon conclusion of their sixteen-week student teaching semester.

Data collection and analysis

This research aimed to articulate student teachers' perceptions of their mentoring experiences in student teaching, and to link it to the five factors of effective mentoring outlined by Hudson (2007). For this study, student teacher perceptions of mentoring were obtained using the Mentoring Perceptions of Student Teaching (MPST) instrument's five-point Likert scale (i.e., strongly disagree = 1, disagree = 2, uncertain =3, agree = 4, strongly agree = 5). Incomplete responses were extrapolated using a linear trend of the subjects' other responses (Kuzma & Bohnenblust, 2001). An analysis of variance (ANOVA) was completed along with obtaining mean scale scores and descriptive statistics. The student teachers' responses represented 64% of the total student teaching cohort. All responses were gathered from student teachers at the conclusion of their student teaching experience.

SPSS 16 was used to calculate mean scores for each of the 34 survey items. The results were reported descriptively according to the five mentoring factors that were embedded within the statements on Hudson's MPST survey. Also obtained was a cumulative score for this section of the survey, and it was used to compare the mean difference between the co-teaching and the non-co-teaching groups. The level of significance to which this study was held is <.05.

The five mentoring factors include: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback. Items on the instrument have been empirically justified (Hudson et al., 2005). Data was subjected to confirmatory factor analysis, which defined a relationship between the items assigned to each factor. Cronbach alpha scores greater than .70 are considered acceptable for internal reliability of each factor (Peterson, 1994). SPSS also generated other descriptive statistics (i.e., percentages, mean scores, and standard deviations) that were used for item analysis.

Results and Discussion

The five factors, namely, personal attributes, system requirements, pedagogical knowledge, modeling, and feedback, had Cronbach alpha scores of .93, .81, .95, .91, and .91, respectively with mean scale scores ranging from 4.20 to 4.60. Correlations and co-variances of the five factors were statistically significant (p <.001). Eigen values greater than one indicated a relationship between factors and associated items and the Eigen value range for this study was 2.19 – 7.53. This was further signified by the percentage of variance attributable to each factor. For instance, there was 73% of variance assigned to the factor personal attributes; the percentage of variance range for all factors was 64%-73% (See Table 1).

Table 1

Confirmatory Factor Analysis for the Five Factors

Mentoring Factors	Cronbach Alpha	Eigen Value	% of Variance	Mean Scale Score	*P* Value
Personal Attributes	.93	4.39	73	4.59	< .001
System Requirements	.81	2.19	73	4.20	< .001
Pedagogical Knowledge	.95	7.53	68	4.39	< .001
Modeling	.91	5.12	64	4.60	< .001
Feedback	.91	4.27	71	4.30	< .001

Note. p <.001 result is highly significant (Kuzma & Bohnenblust, 2001).

Descriptive statistics were calculated on the five factors using SPSS 16. Student teachers perceived modeling (*M* = 4.60) as the most used mentoring factor by mentors. Personal attributes and pedagogical knowledge were also perceived by student teachers to be employed by the mentors. Student teachers pointed out that their mentors' focus on feedback (*M* = 4.30) and system requirements (*M*= 4.20) were not as apparent as the previously mentioned factors (see Table 1). The following provides further insights into specific data on the attributes and practices associated with each factor.

Personal attributes

Student teachers reported their mentors' personal attributes on the MPST instrument. The mean item score range was 4.43 to 4.72; *SD* range: 0.66 to 0.81 (see Table 2 for percentage rank order). Student teachers indicated that 95% of their mentors were supportive of them in student teaching and almost as many student teachers (93%) felt comfortable talking with their mentor. Regarding the mentors' infusion of positive attitudes, attentive listening and building of confidence in their student teachers, the perception by student teachers was that this occurred 92% of the time. Although the lowest percentage of student teacher perceptions in this factor related to the mentor teachers assisting the student teachers in reflecting, this item was still identified as a practice used by mentors by 90% of the student teachers.

Table 2
Personal Attributes

Mentoring practice	%*	Mean	*SD*
Supportive	95.5	4.72	0.66
Comfortable in talking	93.1	4.62	0.78
Listened attentively	92.2	4.54	0.75
Instilled confidence	92.2	4.59	0.78
Instilled positive attitudes	92.2	4.58	0.77
Assisted in reflecting	90.8	4.43	0.81

Note. %*, Percentage of mentees who either *agreed* or *strongly agreed* their mentor provided that specific mentoring practice.

System requirements

Items displayed under the system requirements factor had little variance, but remained some of the lower scores received in the study. Student teachers indicated 85% of the mentors discussed school policies and the goals for teaching, while 82% of the mentees reported their mentors outlined the curriculum (mean item score range: 4.10 to 4.25; *SD* range: 0.89 to 0.93, see Table 3).

Table 3
System Requirements

Mentoring practice	%	Mean	*SD*
Discussed aims	85.5	4.25	0.93
Discussed policies	85.0	4.23	0.90
Outlined curriculum	82.2	4.10	0.89

Note. %*, Percentage of mentees who either *agreed* or *strongly agreed* their mentor provided that specific mentoring practice.

Pedagogical knowledge

In this study, 94% of the student teachers claimed their mentors assisted with classroom management. Almost as frequently, 92% of the mentor teachers provided their perspectives about pedagogical knowledge to the student teachers. Mentors' assistance with planning (91%), and assistance with teaching strategies (90%), were the remaining items reported over 90% of the time. Four additional items pertaining to pedagogical knowledge resulted in data ranging from 87.2 % to 89.5% (mean item score range: 4.31 to 4.36; SD range: 0.86 to 2.81, see Table 4). The four items were as follows: discussion about assessment and implementation, guided lesson preparation, discussions about problem solving, and discussions about content knowledge. The two lowest perceived pedagogical knowledge items, both finding 86.8% of the student teachers either agreeing or strongly agreeing that this practice was implemented, pertained to the mentors' discussions of questioning techniques with the student teacher (mean score=4.29; *SD*=0.89) and assisting student teachers with scheduling (mean score=4.27; *SD*=0.89).

Table 4
Pedagogical Knowledge

Mentoring practice	%*	Mean	*SD*
Assisted with classroom management	94.1	4.55	0.77
Provided viewpoints (perspectives)	92.2	4.48	0.80
Assisted in planning	91.8	4.46	0.77
Assisted with teaching strategies	90.0	4.46	0.81
Discussed implementation	89.5	4.39	0.82
Discussed assessment	89.5	4.36	0.87
Guided preparation	88.6	4.31	0.85
Discussed problem solving	87.7	4.39	0.88
Discussed content knowledge	87.2	4.31	0.86
Assisted with timetabling	86.8	4.27	0.89
Discussed questioning techniques	86.8	4.29	0.89

Note. %*, Percentage of mentees who either *agreed* or *strongly agreed* their mentor provided that specific mentoring practice.

Modeling

As shown in Table 5, the modeling factor received greater than a 90% agreement response on all quantifiable items. Student teachers indicated that a majority of mentors modeled teaching practices. Modeling effective teaching and rapport with students were perceived to be the most representative practices of the mentors at 96% and 95% respectively, while the mentors' demonstration of hands-on learning was at 94%. Mentors' modeling of classroom management and well-designed lesson plans were lower on the student teachers' responses, as was the student teachers' perceptions of their mentor's display of enthusiasm (all at 93%). The lowest score within the modeling factor pertains to the mentors' use of curricular language (standards). Student teachers perceived that this occurred 90% of the time. Mentors' reference to standards was also the lowest reported score in the system requirements factor.

Table 5
Modeling

Mentoring practice	%	Mean	*SD*
Modeled effective teaching	96.8	4.72	0.55
Modeled teaching	96.3	4.70	0.63
Modeled rapport with students	95.9	4.66	0.63
Demonstrated hands-on lesson	94.1	4.56	0.70
Displayed enthusiasm	93.6	4.63	0.71
Modeled classroom management	93.6	4.62	0.69
Modeled a well-designed lesson	93.2	4.50	0.69
Used curriculum language (standards)	90.9	4.38	0.76

Note. %*, Percentage of mentees who either *agreed* or *strongly agreed* their mentor provided that specific mentoring practice.

Feedback

The fifth factor, feedback, showed the lowest scores of implementation on the MPST instrument, as compared to the other four factors. The student teachers perceived that only 71% of the mentors reviewed the student teachers' lesson plans (mean score=3.84; *SD*=1.03). Also significant, is that although 92% of the student teachers reported their mentors observed their teaching, only 79% of the student teachers indicated they received written feedback on their teaching (mean score 4.14; *SD*=1.04). In stark contrast, 92% of the student teachers agreed or strongly agreed that they received oral feedback of their teaching (mean score 4.47; *SD*=0.83). As Table 6 shows, 86% of the student teachers felt that their mentor teacher articulated expectations during this experience, and 91% noted their teaching was evaluated. Mean scores for these items were 4.30 and 4.46, respectively and standard deviations 0.97 and 0.86 respectively.

Table 6
Feedback

Mentoring practice	%*	Mean	*SD*
Observed teaching for feedback	92.7	4.54	0.73
Provided oral feedback	92.7	4.47	0.83
Provided evaluation on teaching	91.3	4.46	0.86
Articulated expectations	86.3	4.30	0.97
Provided written feedback	79.9	4.14	1.04
Reviewed lesson plans	71.2	3.84	1.03

Note, %*, Percentage of mentees who either *agreed* or *strongly agreed* their mentor provided that specific mentoring practice.

Conclusion

Mentoring is an essential component of the student teaching experience. The provision of highly prepared and effective mentors contributes to the success of student teachers during this high stakes period of professional development. Substantial evidence from this study supports Hudson's five mentoring factors as a valid and useful framework for measuring the impact of the mentoring received by student teachers in the student teaching experience. The five factors, namely, personal attributes, system requirements, pedagogical knowledge, modeling, and feedback, provide a framework for mentoring and may be used as a benchmark for mentoring practices of those working with student teachers (Hudson, Skamp, & Brooks, 2005).

The five factors also serve to identify the specific responsibilities of mentor teachers and should be used to articulate the goals and outcomes for their preparation for the role. Teacher preparation programs that enlist the support of experienced classroom teachers as mentors to student teachers must establish a set of expectations for the mentor/student teacher relationship, and also continue to study the effectiveness and the impact of this relationship on the success of the beginning teachers. Establishing the components of effective mentoring will not only verify what has been done during the student teaching experience, it will also serve to expand mentoring services to others who are developing effective student teaching experiences.

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Early Career Teacher Attrition: Searching for Answers in Preservice Preparation

Dr. Gloria Graham Flynn

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The exodus of teachers realized in public schools negatively influences student outcomes, teacher potential, and overall school performance (Ingersoll & Smith, 2004; McCleskey & Billingsley, 2008).   Though some turnover is expected from situations in life such as retirement and raising families, the degree at which teacher attrition is increasing warrants careful consideration. Data illustrate alarming figures and highlights areas where further study is needed.

Attrition is noted throughout the U.S., but tends to hold higher prevalence among certain teacher and student subgroups (McLeskey & Billingsley, 2008; USDE, 2008).   Urban and rural schools with higher rates of minority students living in poverty report lower teacher retention than those teaching in schools with opposite status (Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2007). Within secondary education content areas, retention discrepancies are also revealed: mathematics and science present higher attrition than other teaching genres (USDE, 2008). Of special concern, however, are the attrition rates of early career educators (Boe, Cook, & Sunderland, 2007) with approximately 30% leaving during the induction period, the time considered as the first 3 to 5 years after professional entry (Ingersoll & Smith, 2004). Within this group, attrition percentages fluctuate depending upon teacher characteristics, teaching assignment, and student population. For example, early career teachers who demonstrate higher scores on certification exams and are employed in low performing/high diversity schools are known to quit teaching at greater rates than teachers with lower scores teaching in similar school settings (Boyd et al., 2007).

Experienced teachers are considered keys to the success of high performing schools and are especially needed for certain types of students. Novice educators must have time to hone their craft (Griffin, Winn, Otis-Wilborn, & Kilgore, 2003) and put theory learned during preservice education into practice (McLeskey & Billingsley, 2008). Early career educators who give up too soon diminish opportunities for themselves, students, schools, and communities.

Many who leave teaching may not have done so had they been better prepared to meet the challenges of today's classrooms (Darling-Hammond, 2006b; McLeskey & Billingsley, 2008). Though increased student diversity was predicted long ago and continues to rise, teacher education's response is described as inadequate in providing future teachers with the skills, dispositions, and experiences necessary to meet the needs of all students.   A homogenous teaching force, consisting of a middle class, white, female majority, finds themselves teaching students from dissimilar backgrounds. Diversity growth makes traditional methods of preparing teachers passé, no longer sufficient for leading early career educators toward satisfaction in their work and employment longevity. Inadequate coursework and few and/or ineffective clinical experiences (defined as experiences placing preservice teachers in school settings for the observation of or participation with students; in this article, the term includes both course field

experience and student teaching) are identified by teachers feeling ill-prepared by their preservice programs of study, especially regarding the understanding and teaching of students from diverse populations (Darling-Hammond, 2006a). Teachers exasperated by increasing demands to meet the learning needs of all students, feel a loss of self-efficacy, and find it motivating to quit.

Teachers' perceptions of their professional preparation elucidate recurring themes regarding diversity, including struggles with teaching students with disabilities, English language learners (ELLs), and students who live in poverty. In a survey conducted by the National Center for Education Statistics (NCES; USDE, 2008) only 32% of in-service educators felt they were adequately prepared to teach the different types of students in their classrooms. Data collected in 1998 and 2000 (NCES; USDE, 2008) also indicated an 8% increase in the number of educators who felt under-prepared to teach students with disabilities, growing from 71% to 79%, respectively.

The design of teacher preparation influences the experiences of early career teachers (Zeichner, Melnick, & Gomez, 1996). Outcome differences are identified between universities holding on to "structural and conceptual fragmentation of traditional undergraduate teacher education programs" and universities upgrading programs with features of "tight coherence and integration among courses and between course work and clinical work" (Darling-Hammond, 2006a, p. 7). Preservice education is informed through teacher educators' dispositions toward, expertise in, and experience with diverse student populations (Guo, Arthur, & Lund, 2009). Some teacher educators spend little time incorporating diversity curricula in coursework for many of the same reasons K-12 teachers historically struggle in meeting the needs of students from diverse populations. Teacher educators, like their K-12 protégées, are a homogenous society. As an older generation, many attended schools with less diversity and at a time when deficit views of difference were common. Their own preservice education included little, if any, discussion of diversity and their career in the K-12 setting may have served fewer students identified as diverse.

Research on preparation that improves teacher retention and student achievement identifies improving coursework and increasing time and quality of clinical experiences to better prepare teacher candidates who are ready to meet the needs of all students (Darling-Hammond, 2006b; West & Hudson, 2010). Those who have accepted the challenge of restructuring teacher education to increase teacher and student outcomes show results that "produce novice teachers who are able, from their first days in the classroom, to practice like many seasoned veterans, productively organizing classrooms that teach challenging content to very diverse learners with levels of skill many teachers never attain" (Darling-Hammond, 2006b, p. 7).

Transforming traditional coursework to effectively address diversity is known to increase teacher retention and improve student achievement; yet, such change has not kept up with the rapid growth of diversity in today's schools (Darling-Hammond, 2000b). One survey course in special education was added to undergraduate requirements at many colleges of education (COEs) in the 1970s when inclusion of students with disabilities was first being realized. This single course may have been adequate for future teachers 40 years ago, but is surely not enough for today's inclusive classrooms (Smith, Polloway, Patton, & Dowdy, 2008).

Debates between content and pedagogy are ongoing between COE and college of arts and sciences faculty who partner in preparing secondary education teachers (Brantley-Dias, Calandra, Harmon, & Shoffner, 2006). Requirements for completing teaching degrees in elementary and secondary education often vary in the amount and types of coursework and clinical experience. These departmental divides create disconnect between theory and practice (Darling-Hammond, 2006a). Studies illustrate that secondary education content majors have lower in-service retention rates than those who graduate with elementary education degrees (Scherff & Hahs-Vaughn, 2008), leading to a belief that secondary education majors need more understanding of teaching and learning prior to entering the profession.

Opportunities for preservice teachers to apply theory in practice through field experience and student teaching is also noted as problematic (Boyd et al., 2007; Zeichner, 2010). Working with students considered diverse can alleviate assumptions preservice teachers hold and develop confidence in their skills in working with students who are unlike themselves (Gomez, Strage, Knutson-Miller, & Garcia-Nevarez, 2009). Increased hours in the field must also be accompanied by opportunities to interact with all types of students to develop necessary dispositions as well as knowledge and skills in areas such as assessment, collaboration, and intervention planning (Darling-Hammond, 2006a). Hours spent in the field are another area of disparity between secondary and elementary teacher preparation programs. When compared to elementary education majors, secondary content majors experience less field experience requirements (Blackwell, 2002). Blackwell (2002) suggests an increase in hours of structured field experience for secondary majors, embedded in content pedagogy and/or through content courses.

Amidst the aforementioned concerns in teacher preparation are problems in evaluating the degree in which preparation impacts teacher outcomes. Citing an exhaustive review on teacher education efficacy, prior to their own study on preparation pathways, Good, et al. (2006), concluded, "Very little is known about if and how teacher education affects practice" (p. 411). Though some universities use exit interviews and post-graduation surveys to attain useful data of graduate perceptions and, at times, career outcomes, such measures can be misleading if certain variables are not considered in the data collection and/or analysis process. Colleges of Education (COEs) may miss valuable insight if information is neglected regarding candidate entry skills, background, and in-service demographics. Paying attention to alumni perceptions of preservice training and post-graduation outcomes provides insight to those seeking to impact teacher retention and student achievement. Some COEs addressing teacher preparation concerns report positive results in retaining early career teachers by revamping programs, emphasizing culturally responsive teaching practices (Brayton, 2008). Though few in number, such studies are promising and warrant consideration (Darling-Hammond, 2010).

To better understand why an early career teacher leaves the profession requires examination of the individual's past, present, and future. After teachers spend time fully employed in the classroom, reflection on preservice training and in-service experiences, as well as intention of career longevity, could provide insight to COEs focused on preparing competent teachers who meet the needs of all students, including those from diverse backgrounds. As important as it is to heed input from those employed as teachers, the voices of those leaving teaching within the induction period and those not entering the profession at all could also be revealing.

A dearth of research exists examining variance in programs of study in teacher preparation. It seems intuitive that disaggregating data by degree paths would be revealing. Different programs of study (e.g., elementary education degree, secondary education degree) may have varied requirements including the amount and types of coursework, hours of field experience, and length and components of student teaching. Whether or not the graduate concurrently completes a minor degree or second teaching field could also give insight to how prepared a teacher is for the classroom. This would necessitate noting differences in the outcomes of graduates with no minor, a minor related to working with diverse student populations (e.g., English speakers of other languages [ESL] minor, special education minor), or a minor in another field. The closer scrutiny of degree paths could shed light on why teachers feel unprepared to work with students from diverse populations and become part of attrition statistics.

Method

Concerns regarding early career teacher attrition attributed to preservice preparation motivated this mixed methods case study which examined, via a survey design, the degree to which teacher preparation impacts post-graduation outcomes, particularly career retention. To accomplish this, the study explored variables identified from teacher attrition research: coursework and clinical practice (both field experience and student teaching). Targeted variables included coursework adequacy, hours of field experience, and length of the professional semester. Since much of the literature on teacher attrition includes concerns of effectively teaching students from culturally and linguistically diverse (CLD) populations, this topic was also explored. The idea that education majors who successfully complete more coursework and clinical perceive themselves as better prepared by their preservice programs, feel more effective in the classroom, and plan to remain in the teaching profession beyond the induction period was also explored.

Participants

Personal, educational, and professional demographics, perceptions of preservice preparation, and post-graduation outcomes from a purposeful sample of graduates at a university in the Midwest were analyzed. A unique feature of the research was the examination of participants' degree paths and additional endorsements received. Participants were 3 to 5 years post-graduation. The professional retention was increased for graduates completing programs of study with more emphasis on diversity. Determining which graduates received more emphasis on diverse populations was achieved by disaggregating data among 9 programs of study: Elementary/no minor, elementary/diversity minor, elementary/general minor; K-12, no minor, K-12/diversity minor, K-12/general minor; secondary/no minor, secondary/diversity minor, secondary/general minor.

In addition to an initial education foundations course, all programs of study required successful completion of a 3-hour survey course in special education and 9 hours of psychology, but elementary majors were also required additional credits in classroom management and multicultural studies. Pedagogy-related coursework also varied among different secondary content areas. For example, the BSEd in biology required one 3-hour methods course for teaching biology while the BSEd in technology education required 10 hours of content teaching methods.

Differences in the length of field experiences were also noted among the programs of study, ranging from 10 to 271 hours in-field during the timeframe the participants were attending. All degrees, except one, required successful completion of 33 observation hours in their initial education course. Each program required a diversity-related field experience organized through the special education survey course. Other field experience requirements varied depending upon the degree and whether the candidate was completing a minor degree. For example, 45 hours in-field for reading practicum were required of elementary education majors, while a student accompanying his degree with a minor in special education completed 150 hours under the direction of a university supervisor and fully licensed special education teacher.

Upon completion of course requirements, students applied for student teaching. All programs required a single semester of student teaching, but an optional two semester internship was available to elementary candidates who volunteered and were selected for participation.

Results

Attrition

The participants in this study felt positive about their preservice preparation in spite of their varying paths to graduation. The sample's attrition rate was 13.16%, less than half of what is noted by other studies on early career teacher attrition (Ingersoll & Smith, 2004). The majority of participants (~87%) were employed as teachers at the time they completed the survey and 94% of this group intended to remain so beyond the induction period, including all of the elementary and K-12 responders. Eighty-seven percent of elementary teachers predicted an intent of 10 or more years of service, while 92% of the K-12 teachers predicted such a commitment. Secondary education teachers were the only group planning a shorter obligation with 17% predicting to not teach beyond induction. One particular statistical test did find the average number of intended teaching years significantly less for secondary education majors who earned general minor degrees compared to elementary education majors earning diversity minors, but this was confounded by another result showing a significant difference among secondary education majors compared to elementary majors who earned no minor degrees at all. These results, however, indicated a small effect.

Research on high poverty rural schools also indicates higher attrition numbers (Ingersoll, 2001), yet this sample, who primarily spent their time in high poverty (~67% low SES) rural areas (~58%), largely remained in teaching. Even so, of those leaving teaching, most did so after spending time in rural (67% of leavers), high poverty (73% of leavers) schools.

Coursework

Since there were considerable differences among course and field requirements, it was predicted differences would also be noted among participant responses to the survey, thus supporting research focused on attrition attributed to preservice coursework and clinical experience factors. Analysis of the data, however, indicated this to not be the case. Statistical tests found no significant differences among programs of study and preparation perceptions. Most participants felt prepared to teach, entered and remained in teaching, and felt effective in the classroom.   Though participants held positive perceptions of coursework adequacy, an

additional survey question allowed them to specify areas they felt needed more emphasis before teachers enter classrooms. Coursework focused on diverse populations was identified as the greatest area of need by 62% of the respondents while more instruction in classroom management was identified by almost 60% of the respondents.

Field Experience

Concerns are noted by Boyd, et al. (2007), of field experience inconsistencies within education programs. Participants indicated differences in the number of field hours required prior to student teaching.   This sample collectively, however, believed their field experiences were effective (82.75%). Almost 80% felt the number of hours were adequate, though in a follow-up open-ended question, 60% of responders suggested increasing time in-field.

Though it is unknown how the numbers of field hours compare with teaching universities across the nation, it is known that the fieldwork of all program areas at the university were embedded in specific courses as opposed to standalone field experiences that follow the completion of particular courses. Some felt certain elements from college coursework could be improved to enhance field experiences. One respondent shared, "I felt like the ideas and methods I was given for discipline in coursework were for perfect situations and ideal circumstances rather than the reality of students who curse at you, threaten you, accuse you of racism, etc." Such sentiment supports Guo et al. (2009) conclusion that preservice teachers want opportunities to apply what they are learning in the college classroom in true settings.

The most identified area of field experience dissatisfaction (55%) focused on opportunities respondents had in working with students of diverse backgrounds. In a follow-up open-ended question, 35.29% indicated need for more time working with students from diverse populations, specifically those from "urban settings," "different cultures," "students with disabilities," "different socioeconomic cultures," "disabilities," and "ELL."

Student Teaching

In regard to student teaching, this study looked at one particular area cited in the research as beneficial to future teachers—yearlong internships—as well as asking respondents to voice ways the student teaching experience could be improved. The majority of the sample (86%) completed a traditional single student teaching semester. The yearlong internship was available only to elementary education majors who met particular criteria. A follow-up question asked the sample what they felt was most appropriate in terms of preparing a teacher candidate and the majority (64%) believed one semester was most appropriate.   Further thoughts on student teaching, however, were shared in an additional open-ended question answered by 34% of the respondents who discussed a variety of topics from the need for master cooperating teachers to financial concerns of the student teacher. Some responding to the open-ended question stressed benefits of the internship:

[Internship Graduate]: *I believe having the opportunity to do a year long of student teaching prepared me better for my own teaching position. Compared to other 1st year teachers, I was more prepared.*

[Internship Graduate]: *Encourage more students to complete internship because it builds greater rapport with students, continuity in teaching the curriculum, and a better "feel" for how teaching really goes.*

[Single Semester Graduate]: *I believe it would be more beneficial for all students to be required to do two full semesters in student teaching. This would better prepare the student teachers for teaching. I believed that my student teaching was the more educational thing I did during college. I truly wish I would have done an internship. I believe my first year would have gone much better if I had.*

Discussion

The educational route taken to enter the teaching profession makes a difference in classroom effectiveness and career longevity (Darling-Hammond, 2006a). Intuition would lead one to believe that more practice at a skill indeed results in greater skill attainment. Related to this study, it would seem those who received more education-related coursework and more hours of clinical practice, especially focused on populations of high need, would realize better career outcomes. The programs of study this research examined showed great variance in the number of education courses required and hours spent in the field working with students in general and with students from diverse populations, particularly. It seems counterintuitive that there is little difference between the outcomes of someone who spent over 200 hours in classrooms working with greater numbers of students with high needs compared to another who spent only 43 hours working with a more homogeneous group of students. For this case study, the graduates—even those who left teaching and who never started—perceived their education as adequately preparatory. (Note: Respondents indicating they never entered teaching after their degrees were conferred completed survey questions about this decision. None of the respondents indicated inadequate preparation for teaching; all provided other reasons for taking different career paths after graduation. Some of the reasons given for not entering teaching included raising a family, health problems, and no openings available.) What is it, then, that compelled the participants in this study to maintain fairly similar feelings about their preservice experiences and their post-graduation outcomes, even though their paths to the classroom differed?

Perhaps an answer is hidden within Cochran-Smith's (2008) theory of social justice in teacher education and other research focusing on the social and cultural contexts of schooling. This theory, integrating theories for social justice, teaching practice, and teacher preparation, promotes equity, recognition, and respect for all social, racial, and cultural groups. It views teachers as "potential agents of social change…[who] can influence students' learning and life chances" (p. 16) and views teacher education as the source for future teachers "to learn about subject matter, pedagogy, culture, language, the social and cultural contexts of schooling, and the purposes of education" (p. 21). Closer examination of the demographics of the participants as well as the students they teach, the teacher educators, and similarities instead of differences among the programs of study, could provide more insight.

Research indicates some of the problems with early career attrition is the disconnect between the backgrounds of students and their teachers ("A High Quality Teacher," 2000). A majority of the study sample were employed in high poverty rural schools and most indicated working with students from diverse populations, yet research indicates that schools filled with such diversity can be overwhelming to teachers who are working with students who differ in

culture and who live in isolated areas (Griffin et al., 2003; Mastropieri, 2001). The university in which the study took place is situated in a large region where the majority of public schools are rural and have low SES. Though this data was not collected, perhaps most participants were from the region and took on teaching positions at low SES rural schools. This could mean that as children themselves, they grew up in schools primarily rural and poor. This aspect of familiarity, having similar backgrounds as their students, possibly impacted the career outcomes of the respondents.

Another area of cultural familiarity regards the participants own K-12 schooling. The majority were between the ages of 25 and 35 years. The graduates of this study, as children, probably attended schools where children with disabilities were included in general education. Over the years, the student population has changed in response to school and civil rights litigation and legislation. It is likely the participants attended schools filled with students from all types of backgrounds and that inclusive education was the norm rather than the unique (Smith et al., 2008). For such participants, sitting in classrooms alongside peers with disabilities and other types of differences was not atypical.

A closer look at the backgrounds of the university's teacher educators might reveal a staff with expertise and experience that encouraged more infusion of theory and methods for effectively teaching students from diverse backgrounds throughout all or most of the education courses taught (Guo et al., 2009). Teacher educators, who may have expertise of and participation with a variety of CLD populations, appear more motivated to weave needed diversity topics into the curriculum throughout the semester (Guo et al., 2009). Such curriculum infusion or integration takes place when "content that is typically presented through a stand-alone course is instead infused or integrated across multiple or all courses within a particular program" (Sands, Duffield, & Parsons, 2006, p. 92). This concept leads to greater consistency among different program areas, fades departmental divides, and demonstrates cross-curricular collaboration useful to preservice majors. Assessing such practices is difficult, but emerging literature indicates promise (Sands et al., 2006) and would perhaps shed light to the results of this study.

Since nothing remarkable was noted among the different programs of study, similarities among participant paths to degree completion were scrutinized revealing one element each graduate had in common: completion of a particular field experience placing preservice teachers directly working with one or more K-12 students coming from backgrounds considered diverse. These opportunities occurred under the supervision of classroom teachers and required university students to work with individual or small groups of students coming from backgrounds identified as diverse. Different outcomes result when preservice teachers are assigned field experiences in classrooms where diversity is prevalent. In such classrooms, preservice teachers proclaim "they developed intercultural competence through their practical experiences" (Guo et al., 2009, p. 573). Working with students considered diverse can alleviate assumptions preservice teachers hold and develop confidence in their skills in working with students who are unlike themselves (Gomez et al., 2009). The results of this study should encourage a further look into the value such field experience adds to the retention of early career teachers.

For this case, the participants—even those who left teaching and who never started—perceived their education as adequately preparatory; most entering the profession plan to stay. Teachers who feel good about their preparation tend to have positive feelings about their

classroom effectiveness and intend to remain in teaching beyond the induction period (Darling-Hammond, 2006b; McLeskey & Billingsley, 2008). Reaching this career milestone is known to increase student achievement, self-efficacy, and career longevity (Griffin, et al., 2003). All public school students, their families, and communities should be guaranteed teachers qualified for the positions in which they are hired. Such assurance is the responsibility of not only the states licensing educators and the school districts hiring them, but also the universities preparing them for their professions. It seems obvious these three entities would benefit from working together, addressing factors relating to teacher attrition. Those who work most directly with preparation and research--teacher educators—should lead the way.

About the Author

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A Perceptual Assessment of Non-Traditional STEM Teacher Candidates: A University Partnership for Transition to Teaching

Dr. Gail Hughes, Dr. Alicia Cotabish, Dr. Carolyn Williams, and Dr. Donna Wake

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Recent science education reform has made significant commitments to improving K-20 Science, Technology, Engineering, and Mathematics (STEM) education. A series of reports have echoed a resonating call to increase America's talent pool by vastly improving K-12 mathematics and science education, and increasing the number of teacher candidates entering the STEM fields (President's Council of Advisors on Science and Technology, 2010). Specifically, the National Science Board (NSB, 2010) identified key recommendations to develop the next generation of STEM innovators which included providing support for research-based STEM preparation for general education teachers who have the most contact with children (NSB, 2010). Within this policy context, university-based STEM initiatives have expanded and are responding to a clarion call to increase access to and vastly improve K-20 STEM education. This paper focuses on a federally-funded university-based transitional teacher preparation program, Partnership for Transition to Teaching (P3T), aimed to respond to the call. Specifically, researchers in this study examined P3T teacher candidates' perceptions and concerns with respect to teaching and their plans to continue teaching after participating one year in a university-based transitional teacher education program.

Partnership for Transition to Teaching (P3T)

The P3T initiative is housed in a mid-size university centrally located in a southeastern state. The P3T recruits recent college or university graduates, career changers, paraprofessionals, and STEM majors to become mathematics and science teachers. For program eligibility, applicants must hold a bachelor's degree with at least 30 credit hours of either mathematics or science. P3T participants are enrolled in the Master of Arts in Teaching (MAT) program and are encouraged to finish their program and to earn full licensure within two years of obtaining their provisional credentials. Participants in the P3T grant initiative receive additional training, support opportunities, and $5,000 in financial assistance in a contracted scholarship. In exchange for funding, teacher candidates agree to teach in selected highly diverse, urban districts for three years. The purpose of the partnership is to provide highly qualified STEM teachers in districts with demonstrated need. Characteristics of these districts include pervasive property, cultural diversity, and high teacher turnover.

Perspectives and Theoretical Framework

It has been widely advocated that experienced teachers are better teachers. However, experience comes in different forms such as years of teaching or practice in the discipline. To meet the demands and challenges to recruit and hire mathematics and science teachers, content experts – individuals with backgrounds in STEM disciplines – appear to be one avenue that potentially addresses the STEM subject- area shortages (Hanushek, Kain, & Rivkin, 2004). The

literature indicates that nontraditional prepared teachers often select certification in the subject shortage areas, such as mathematics or science, and in urban city school districts that are likely to serve minority students (Shen, 1997).

Teachers who are career-changers are often more mature and better able to manage time, work cooperatively with co-workers, and handle classroom management due to prior work, life, and/or parenting experience than those entering teaching at an early age (Mosenson & Mosenson, 2012). They can bring valuable skills and competencies and knowledge to the classroom as a result of their life experiences, and they enter the profession seeking to make a difference in the lives of students they teach (Haggard, Slostad, & Winterton, 2006; Salyer, 2003). To quote Stehlik (2011), nontraditional learners "are more philanthropic then pragmatic, more inspirational than aspirational, and more holistic than strategic" (p. 167).

Nontraditional teacher candidates have better coping skills and bring more empathy to the classroom than their traditionally prepared peers. Their prior experiences support their ability to plan and implement effective instructional practices (Kaldi, 2009). Chambers (2002) and Klausewitz (2005) found that nontraditional candidates draw from their previous job experiences, parenting or coaching and their knowledge gained through travel. In addition, they work in the community that supports them when approaching their coursework, field assignments, and classroom settings. In addition, nontraditional candidates are better at networking, managing their time, collaborating, and communicating. The academic work of nontraditional teacher education candidates is often of high quality despite the challenges they face, such as parenting or work commitments, which may limit their ability to fully commit to their coursework (Kaldi, 2009).

Researchers estimate that 20% to 50% of all teachers leave the profession within the first five years (Ingersoll & Smith, 2003; Latham & Vogt, 2007; Perrachione, Rosser, & Petersen, 2008) and the overall attrition rate for all teachers is 13% to 15% per year (Ingersoll, 2001). One characteristic that relates to retention is age (Hanushek, Kain, & Rivkin, 2004; Ingersoll, 2001). Younger teachers leave the profession either from dissatisfaction with teaching or for family reasons such as childcare. Older teachers leave teaching for retirement, and the erosion of both groups results in a U-shaped plot of age and teacher attrition (Guarino, Santibanez, & Daley, 2006; Hanushek & Rivkin, 2007). Grissmer and Kirby (1997) noted that the theory of human capital also offers insights into the U-shaped distribution of age and teacher retention. Attrition is higher among teachers in the early years of their careers because they have accumulated less specific capital, or knowledge specific to teaching, and attrition attenuates later when teachers have increased their teaching specific capital. Further, in a study of new teachers, Watson, Harper, Ratliff, and Singleton (2010) found that stress was a significant contributor to decreased job satisfaction among new teachers. The higher levels of stress, with the decreased job satisfaction, could be another reason that new teachers leave the field at higher rates. However, many younger teachers do not leave the profession indefinitely; instead they leave and return with the reentrants comprising a significant portion of annual teacher hires (Grissmer & Kirby, 1997).

A primary obstacle to researching the many aspects of nontraditional teacher characteristics and effectiveness is the lack of systematic data collection, at both the national and state levels. The National Research Council (2010) identified basic questions in the field: (a) How do characteristics of teacher candidates vary by program or pathway?, (b) Where do

entrants and graduates of preparation programs ultimately teach?, and (c) How long do teachers with different types of preparation continue to teach and are differences in preparation associated with differences in teachers' career trajectories? The P3T strives to contribute to the quality of data regarding teacher preparation and to help answer these important questions. Answers to these questions may provide a more comprehensive approach to data collection in baseline monitoring of teacher preparation, and improved opportunities to link data with other aspects of the public education system – creating a common foundation on which to build research efforts.

Purpose of the Study

The purpose of the study was to examine P3T (a) teacher candidates' perceptions about science/mathematics teaching and learning, and (b) teacher concerns about participating in the Partnership for Transition to Teaching program. Specifically, the research questions were:

1. What are the patterns of teacher candidates' perceptions about teaching after participating one year in a university-based transitional teacher education program?
2. What is the nature of teacher concerns about participating in a university-based transitional teacher education program?

Method

Participants

The P3T recruits, prepares, and places highly-qualified new STEM teachers with a goal of 30 per year for four years. In the current study, researchers report data from Years 1 to 3 of the 4 Year project. The recruitment efforts target individuals from groups traditionally underrepresented in STEM, including minorities, individuals with disabilities, and women. As part of the grant evaluation plan, participants are surveyed each semester in regard to their satisfaction with the P3T program, required coursework, and expectations of fulfilling their teaching obligations. To date, data were available from 108 completed surveys spanning five semesters. To investigate experiences as a classroom teacher, researchers solicited a subset of all Year 3 P3T teaching and four agreed to participate in the focus group. Participants were: (a) in their final year of the teacher education program, (b) granted a state-approved provisional teaching license prior to their final year of the teacher education program, and (c) teaching mathematics and/or science at high schools in highly diverse urban school districts located in the capital city of a southeastern state.

Instrumentation

Program evaluation surveys. Each semester, all P3T candidates enrolled in coursework are asked to complete a program evaluation survey comprised of eight sections pertaining to various aspects of the grant. The relevant sections for this study were the sections on course satisfaction and fulfillment of teaching obligation. Candidates responded to eight items pertaining to their courses and two items about obligation fulfillment. The response options for the course items were either 6-point levels of satisfaction or levels of agreement. The obligation items were a 5-point level of confidence scale and an open-response item about fulfilling their commitment.

Focus groups. Researchers conducted a focus group with participating Partnership for Transition to Teaching (P3T) teacher candidates with the intent of obtaining insight into the patterns of P3T teacher candidates' perceptions about their participation in the program and the nature of their concerns. Focus groups as a data collection method allow social science researchers to collect data from multiple individuals simultaneously. Often deemed as less threatening to many participants, the approach is an avenue for participants to share their perceptions, express consensus among participants, and dissent toward differing views (Krueger & Casey, 2000; Onwuegbuzie, Dickinson, Leech, & Zoran (2009). Focus group participants should represent a range of diverse individuals and create an environment where participants feel comfortable sharing their thoughts, opinions, beliefs, and experiences. When specialized knowledge exists, Krueger (1994) endorses the use of very small focus groups, or "minifocus groups" which include 3 or 4 participants. The P3T Internal Evaluator facilitated the group online utilizing Skype voice over-IP software and recorded the interview using Pamela for Skype.

Project personnel were particularly interested in improving program supports to P3T teacher candidates. A plethora of findings from a review of related literature noted that classroom management and teacher misunderstandings about cultural diversity were among the top cited reasons for teacher attrition. To capture the perceptions and concerns regarding participation in the P3T program and the issues P3T candidates were facing in regard to classroom management and cultural diversity, focus group questions were developed. The abbreviated focus group questions were (a) What are your thoughts and perceptions regarding the P3T program?, (b) What do you see as the strengths?, and (c) What are some areas of improvement?, (d) On a scale of "1" being low to "10" being high, how satisfied are you with the: level of support you have from the P3T program as a TOR; rate your preparation in classroom management; and rate your preparation for working with diverse populations. Why did you give it this rating? Give examples.

Focus Group Process

The facilitator directed participants to listen to the questions (presented one at a time) and recorded their responses on a note card to be shared aloud with the group. After the facilitator presented each question, the group was asked to read their responses. This process allowed participants to share their initial reactions to the question rather than be influenced by other group members. After each member shared their initial responses, a group discussion took place. Participants often shared similar sentiment and reactions to the questions, and often elaborated upon their responses or confirmed others' perceptions. The entire process took 72 minutes.

Data Analysis

Descriptive statistics were computed for the survey items using SPSS version 22. For the focus group data, researchers utilized a constant comparative analysis and NVivo software. By comparing, the researcher is able to do what is necessary to develop a theory inductively, including categorizing, coding, delineating categories, and connecting them. Leech and Onwuegbuzie (2008) noted that constant comparative analysis is used to analyze many types of data and is appropriate for the analysis of focus group data. The three major stages that characterize the constant comparative analysis are (a) open coding, (b) grouping into categories,

and (c) selective coding formalized our data analysis approach utilized in this study (Onwuegbuzie et al., 2009).

Results

Program Evaluation Surveys

Survey data indicated that participants were satisfied with their course experiences ($M = 4.36$, $SD = 0.87$) and 88% of participants were confident they would fulfill their obligation to teach for three years in a Partnership-School district. Concerns cited with respect to fulfilling their obligation included remaining in the teaching profession for three years, securing a better paying job that would allow for repayment of the scholarship award, and obtaining a position with a Partnership-School District.

When asked to provide an overall rating of all courses taken during the current semester, candidates' responses indicated a high degree of satisfaction with the course work components of the P3T program. Candidate ratings of satisfaction with learning experiences, course materials, relation of knowledge to real life, and course organization averaged from 4.05 to 4.36 out of 5. Ratings of course workload (*very high '5'* to *very low '1'*) averaged 3.87 and difficulty ratings (*very difficult '5'* to *very easy '1'*) of course content and assignment averaged 3.87 and 3.64, respectively. The descriptive statistics and 95% confidence intervals for the means are displayed in Table 1.

Table 1
Descriptive Statistics for Course Items

Item	*M*	*SD*	95% *CI* *LL*	95% *CI* *UP*
How satisfied are you with your learning experiences?	4.36	0.87	4.20	4.53
Agreement with, "The course materials were worthwhile."	4.22	0.87	4.06	4.39
Agreement with, "The courses inspire my interest in the subject."	4.33	0.89	4.16	4.50
Agreement with, "The courses help me relate the knowledge to life."	4.24	0.82	4.08	4.40
How would you rate the amount of work for the courses?	3.87	0.81	3.72	4.02
How would you rate the difficulty level of the course contents?	3.64	0.54	3.54	3.74
How would you rate the difficulty level of the course assignments?	3.68	0.61	3.56	3.79
How would you rate the organization of the courses?	4.05	0.95	3.86	4.23

Patterns of Teacher Candidates' Perceptions

      The coded data from the focus group responses and discussions provided researchers with insights into the patterns of P3T teacher candidates' perceptions about their participation in a STEM-focused nontraditional teacher preparation program, and the nature of their concerns regarding their induction into the education profession via enrollment in a nontraditional program of study.   The themes to emerge from the data included: (a) perceptions of benefits and concerns about teaching and learning resulting from their work in their university-based transitional teacher education program and in their partnership classrooms - focusing primarily on the mismatch between the program of study and participant experiences in their schools and (b) perceived logistical benefits and drawbacks of the P3T program as a support for the nontraditional teacher education program (Table 2).

Table 2

Themes Yielded from Coding Focus Group Comments

Themes	Sources	References	Percentage by Category	Percentage Within Category
Benefits	8	21	55.26	
Program and School Support	5	10		47.62
Financial Support	3	6		28.57
Praxis Support	3	3		14.29
Networking Support	1	2		9.52
Program Detriments	2	4	10.53	
Time Commitment	2	3		75
Logistical Concerns	1	1		25
Pedagogical Concerns	5	13	34.21	
Urban Schools	4	6		46.15
Classroom Management	2	5		38.46
Diversity	1	2		15.39

      Participants clearly felt that the P3T program enhanced their transition to the education profession. Comments in this category included 21 references, or 55.26% of all comments yielded in the focus group discussions. *Within* this category, candidate comments focused on the

support provided by the P3T and local school personnel (i.e., help with enrollment, providing information and resources, support in the classroom, etc.) (47.62% of all comments within this category), the financial support provided by the P3T (28.57%), the additional support given to participants to prepare for the mandated Praxis exams (14.29%), and the ability to network and share resources and experiences with peers involved in the program (9.52%).

Participant concerns about pedagogical issues focused primarily on the mismatch between their coursework in their program of study and their experiences teaching in the Partnership Schools generating 34.21% of all comments within this category. The content of these comments included the need of the nontraditional program to provide more support in the areas of classroom management (38.46% of all comments *within* this category), in teaching diverse student populations (15.39%), and specifically in teaching in urban settings (46.15%).

In addition to counts, the researchers used NVivo to generate query correlations of assigned codes. Comments coded for the term *mismatch* was highly correlated with the code for the host program of study as well as for the terms *classroom management*, *diversity*, and *urban schools* (Figure 1). This indicates a convergence in participant comments around these codes.
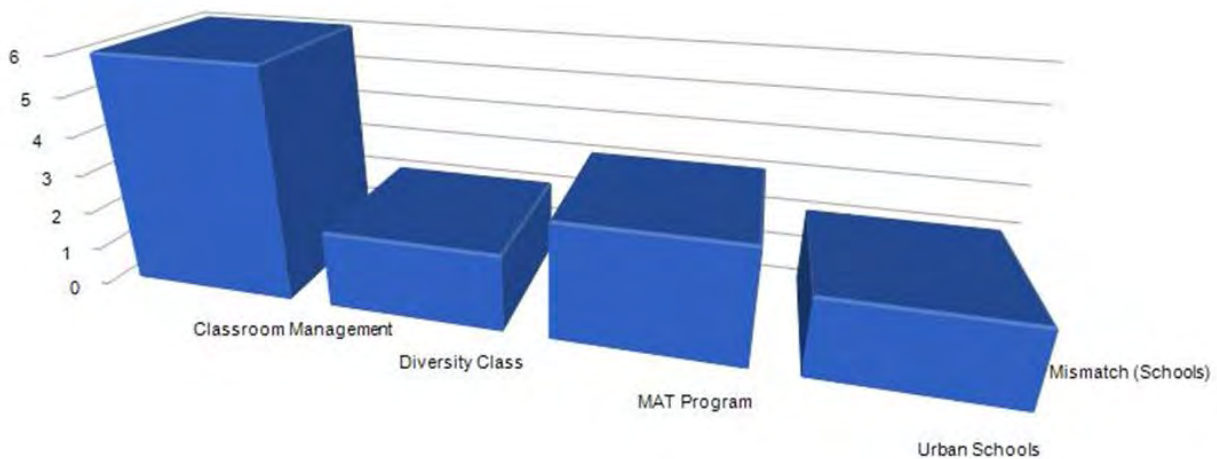
Figure 1. Pedagogical comments in data coding displaying the convergence of comments between *mismatch* and *classroom management, diversity class, MAT program,* and *urban schools.*

Nature of Teacher Concerns

All participant statements were also cross-coded for attitudinal perspective yielding additional insight into candidates' perceptions. In all, 10 sources were coded for attitude position yielding 40 total references. Of these references, 20 were deemed negative in nature (50%) with another 16 coded as positive (40%) and 4 coded as mixed or neutral (10%). A correlation cross-referencing the codes in the study provided data on what topics participants were discussing in positive or negative context.

Positive participant comments were correlated with the topics of P3T program support, support from the host program, Praxis support, financial support, and networking support (Figure

2). Negative comments focused primarily on the category describing the mismatch between the host program curriculum and the participants' lived experiences in their classroom teaching to include the codes for classroom management and urban schools. Participants also assigned negative comments to the time and logistical commitments required by the P3T program and the level of support they received *within* their schools (Figure 3).
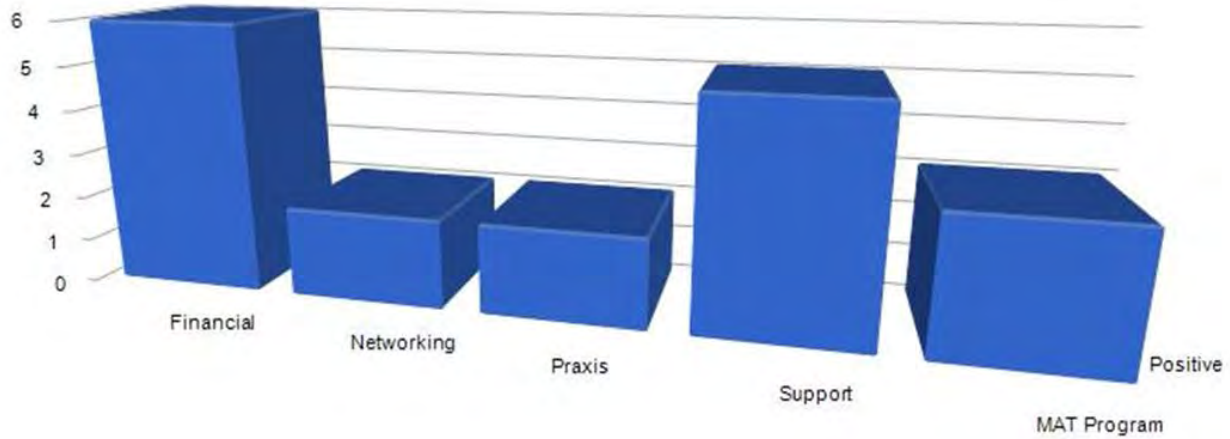
Figure 2. Positive foci in data coding across the categories of *financial, networking, Praxis, support,* and *MAT program.*
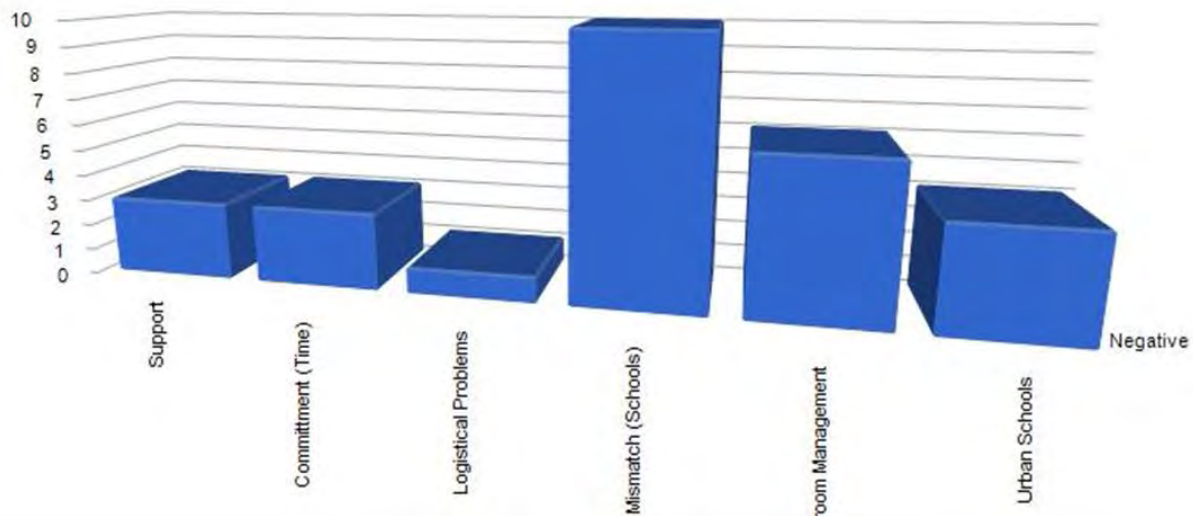
Figure 3. Negative foci in data coding across the categories of *support, commitment (time), logistical problems, mismatch (schools), classroom management,* and *urban schools.*

Discussion

While enrolled in courses, P3T students expressed a high degree of satisfaction with their courses, and 88% were confident that they would fulfill their teaching obligation with the Partnership Schools. One concern expressed was remaining in teaching for three years.

If 88% of P3T students were to meet their obligation, then that percentage would exceed expectations based on the current literature of 20% to 50% of teachers leaving the profession

within the first five years (Ingersoll & Smith, 2003; Latham & Vogt, 2007; Perrachione et al., 2008). Other P3T candidates may choose to remain in teaching, but may obtain a higher-paying job with a non-Partnership School district and repay the scholarship award. Such a choice is disconcerting, given that candidates were informed of the commitment they were making when they accepted the award. Nevertheless, the higher than expected number expecting to fulfill their obligation supports the use of contracted scholarships as a recruitment incentive for teachers.

In regard to the focus group question on classroom management, Respondent 1 stated, "Urban settings are a total shock; very different than anything else." Additionally, Respondent 2 reported, "It makes me angry that 30% of my teacher evaluation is tied to classroom management, yet there is very little support and preparation to address classroom management." Respondent 3 stated, "The teacher education program prepared me for the academic side of teaching, but not the behavior problems."

In the follow-up question, "Do you think there should be additional Partnership School sites made available to P3T participants?" Respondent 1 stated, "Absolutely not! We knew what we were signing up for when we took the money!" Respondent 2 chimed in, stating "We are filling a great need; if you opened up the opportunity to rural schools or less diverse schools, the need would not be met. Partnerships schools are not for everyone – the P3T and MAT program need to learn how to prepare Teachers of Record better." Respondent 3 noted, "I agree. We took the money, we will do it! We just need to be better prepared." Respondent 4 stated, "I have learned great skills that I can use anywhere by being placed in this setting."

The qualitative data indicate that although P3T participants felt overwhelmed, underprepared, and somewhat shocked about their initial teaching experience; yet, they felt strong convictions toward teaching in highly-diverse urban school districts. They experienced the great need of the districts and were willing to meet the need. The group expressed strong consensus views about not opening up the P3T program to non-urban, less diverse schools, and all focus group participants expressed a commitment to stay in the teaching profession, and in highly-diverse urban schools.

Significance of the Study

The P3T has responded to a clarion call to increase the number of teacher candidates entering the STEM fields, and more specifically, in highly diverse, urban schools. The P3T approach to recruiting existing mathematics and science content experts coupled with the intervention of a university-based transitional teacher education program can inform the field of teacher preparation and improve teacher attrition rates. Given the importance placed on the STEM disciplines and the calls from policy makers to build a pipeline for science and mathematics talent, P3T is a timely catalyst for developing such opportunities for teacher education and the STEM community at large.

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Baby It's Cold Outside: Perspectives on Teacher Retention and Student Achievement in Arctic Schools

Dr. Ute Kaden

Nationally, 30% of new teachers leave the profession within five years. The turnover rate can be considerably higher in high-poverty schools as compared to more affluent ones (Ingersoll, 2001; Ronfeldt, Loeb, & Wyckoff, 2013). Teacher turnover rates also tend to be higher in rural and low performing schools (Eppley, 2009; Mueller, Carr-Stewart, Steeves, & Marshall, 2013). Recent research confirms that a stable and quality teacher workforce positively impacts student achievement (Darling-Hammond, Newton, & Wei, 2013; Henry, Bastian, & Fortner, 2011; Winters & Cowen, 2013). Retaining quality teachers is a complex task especially for rural schools. As the importance of well-qualified teachers for student achievement has become increasingly clear, this source of inequality has become increasingly difficult to justify and ignore, especially in rural Alaska.

Alaska is a highly unique area that is comprised of diverse landscapes and is populated with a wide variety of life forms and peoples (Nordic Council of Ministers, 2010). Arctic Alaska can be loosely defined as the northern region of Alaska that is on or close to the Arctic Ocean. Four distinct geographic regions comprise the area: the arctic coastal plain, the Brooks Range, the Bering Strait, and northern portions of the boreal forest (Ritter, 2009). Alaska Native people have thrived in the regions of Arctic Alaska for millennia. With the arrival of a larger influx of Western cultures in the late 1800s, which continues to grow even today, Alaska is now a merging of ethnicities and backgrounds where the Alaska Native groups are the majority in that region yet a minority within the state (Barnhardt, 2014). Many Arctic Alaska Native communities are off the road system and only accessible by planes or boats.

One critical challenge facing Arctic Alaska is teacher retention and accessing quality education for those who reside in the region (Kaden, Patterson, & Healy, 2014). This includes a stable workforce and academic curricula that promotes indigenous cultures, languages, and ways of thinking and behaving (Eppley & Corbett, 2012; Faircloth, 2009; White, 2008). Teaching students in ways that allow them to keep their cultural identity is important for motivation, curriculum relevance, and ultimately student achievement (Eppley & Corbett, 2012). More than 70% percent of newly hired teachers are not from Alaska (Hill & Hirshberg, 2014). Often they learn about the local cultures, Arctic lifestyles, and local curriculum only to leave after a year or two (Munsch & Boylan, 2008). The limited research currently available in Alaska may restrict the ability to intervene in this phenomenon in a strategic manner.

The objective of this study is to identify factors that can be linked to teacher retention and student achievement. The guiding research question for this paper is: What are factors linked to teacher retention in Arctic Alaska school districts and to what extent are these trends related to

student achievement?

Perspectives on Arctic Alaska Schools, Teacher Retention, and Student Achievement

The education system can become a major variable in the cultural and economic well-being of communities or it can amplify and accelerate the process toward losing cultural integrity, contact with nature, and community viability (Corbett, 2009). A significant factor for healthy, resilient Arctic communities can be schools (Corbett, 2009; Eppley, 2009; Kline, White, & Lock, 2013). In these areas, schools exceed the single role of education facility, often functioning as places where people meet, interact, and strengthen their social networks. Schools can become community halls or sports centers where a variety of events takes place, such as greatly anticipated basketball tournaments (Nordic Council of Ministers, 2010). In some instances, schools can also be perceived as the key institution that threatens Native culture, language, and community identity.

In this paper, rural school districts include small communities, which are considerable distances away from other communities, especially urban centers, and are often only reachable by airplane or boat (Howley & Howley, 2010; Slack, Bourne, & Gertler, 2003). Rural school districts for this study include communities with different local languages and heritages inclusive of Native cultures. In such communities, indigenous people have particularly strong connections to cultural, environmental, and spiritual practices (Corbett, 2009).

Quality education for indigenous peoples incorporates their cultures, communities, lives, and land.

Reyhner (2012) asserts, that Indigenous "students need to learn both the knowledge and skills included in tribal, state, and national standards, and they and their teachers also need to respond to local concerns and have some choice in what type of learning projects they can become engaged (p. 32)."

Access to quality education involves a consistent, well prepared, and culturally responsive teacher work force that is integrated into the community life (Assembly of Alaska Native Educators, 1998).

Approximately 60% of Alaska's teachers leave the Arctic region after less than two years, informally citing a variety of reasons, many of which are tied to school and community relations (Hill & Hirshberg, 2014). Such teacher turnover may affect student achievement, contribute to a school climate of instability, and redirect funds for recruitment that might be better spent towards student learning (Barnes, Crowe, & Schaefer, 2007). Darling-Hammond and Sykes (2003) argue that when teachers leave, low-income schools have a difficult time attracting new teachers and end up hiring inexperienced and less prepared teachers. Teacher and principal turnover also has a disruptive effect on the development and maintenance of social resources including staff collegiality, community integration, and confidence in schools (Henry et al., 2011; Hughes, 2012). When teachers leave schools, previously held relationships and relational patterns are altered. Turnover disrupts the formation and maintenance of staff cohesion, community relations, and school instructional program coherence. Since staff turnover presents significant challenges to organizational knowledge and the successful and coherent implementation of instructional programs (Guin, 2004), it also may harm student achievement.

Newly hired teachers in Alaska typically lack understanding about place relevant curricula, Native culture, and community values. New teachers are often expected to patiently, quickly, and successfully assimilate into unfamiliar schools, and community cultures. Those expectations are more challenging in small rural schools, where the inevitable scrutiny of a new face is more likely to extend beyond the school walls (McCracken & Miller, 1988).

Methodology

This study uses a mixed methods approach to identify and understand factors that contribute to teacher retention in Alaska's public K-12 schools (Creswell, 2007; Kleinsasser, 2000; Miles & Huberman, 1994). Archival data was retrieved from the Alaska Department of Education & Early Development (EED, 2013) and analyzed by descriptive statistics to document teacher retention in ten rural school districts and to compare data to three Alaskan urban districts (Table 1). Interviews with educators were conducted to gather qualitative data to inform results, and identify factors related to teacher retention (Creswell, 2007). This report focuses on a subset of data and is part of a larger study on teacher retention and effectiveness in rural Alaska.

Participants

Institutional approval and participant informed consent from school districts and interviewees were obtained prior to data collection. In addition to archival data, 15 semi-structured interviews were conducted with employees during the 2011-2013 school years. The researchers sought a diversity of participants from across the target school districts of this study (6 male, 9 female, ages 22 to 62), with at least one interview conducted in each of the target school districts with less than 100 teachers, and two interviews conducted in districts with more than 100 teachers. Possible participants were selected from the current district employee database and contacted by e-mail before researches traveled to the school sites. The interviews were scheduled at a suitable time during school visits by the researchers. Interviewees were divided into categories based on their current job (e.g., class room teacher, administrator), with particular attention to "stayers" or "leavers" and years of teaching experience within categories. Among the 15 participants, three were Alaska Native teachers, two were administrators, and four were first year teachers new to Alaska. Five participants had between two and four years of teaching experience, and six had more than four years of teaching experience in Alaska. Four participants stated intent to leave the district at the end of the school year, five were unsure about their future career plans, and six planned to return for the following school year.

Data Collection

Archival data on teacher retention from the Alaska Department of Education & Early Development (EED) for school years (SY) 2010 through 2013 were collected. Reading and Mathematics proficiency scores were based on Alaska Standard Based Assessment (SBA) results between 2010 and 2013, which were reported to the public by EED on the yearly report cards (EED, 2014).

Interviews were semi-structured to allow for flexibility (Holstein & Gubrium, 1995; King, 1994) and lasted approximately thirty minutes each. All interviews were conducted in person, tape-recorded, and were supplemented by written notes following the end of the interview. The questions focused on: (a) working conditions; (b) curriculum and teaching; (c) job

satisfaction; and (d) sociocultural living demands and community integration in rural native cultures.

Data Analysis

Descriptive analysis was used to describe archival data. The Pearson correlation coefficient (r) was calculated using SPSS between retention and student achievement. Statistical significance (p) is reported at the 95% confidence level. The audio-recorded data were transcribed after the interviews were competed to identify factors related to teacher retention and working in rural schools. The researchers read the transcripts and the field notes to identify themes through inductive coding and sorting (Berg & Lune, 2004). Peer debriefing was used during transcription and analysis to increase credibility of the study and ensure that analysis were grounded in data (Kleinsasser, 2000).

Results and Discussion

Archival data presented in Table 1 indicates that average teacher retention rates of rural districts (< 77%) are significantly lower than the average rate in the three urban districts (> 92%). In addition, the retention rates in rural districts varied significantly (see SD) by school year. Calculating a Pearson correlation coefficient r shows a statistically significant correlation between average teacher retention and average percent proficiency in reading over the same four-year time frame, school years 2010-2013 for the 10 study districts: r = .623 (p < .054).

Similarly in math, r = .665 (p < .036) for average teacher retention and average percent proficiency. The correlation coefficients were higher when including the three urban districts. Correlation between average teacher retention and average percent proficiency in reading is r = .826 (p < .001) and between average teacher retention and average percent proficiency in math is r = .768 (p < .002). Overall, data indicates a significant difference in teacher retention rates between rural and urban areas and a statistically significant correlation between teacher retention rates and student achievement.

Table 1: *Teacher Retention Rates and Reading/Mathematics Proficiency between School Years (SY) 2010 to 2013*

District	Teacher Count (N)	% Reading /Math Proficiency 2010-2013	% Average Retention	SD	% SY09-10	% SY10-11	% SY11-12	% SY12-13
Bering Strait	234	52/46	68	2.6	65	70	70	66
Denali	33	87/77	86	9.5	97	80	90	76
Iditarod	30	72/54	66	9.5	78	56	67	61
Nenana	26	81/61	91	10.5	92	100	76	96
Nome	56	69/59	83	7.9	93	80	74	83
North Slope	168	59/52	80	2.1	77	79	80	82
Northwest Arctic	153	49/45	77	7.3	85	80	72	69
Tanana	5	59/53	74	18.9	60	60	75	100
Yukon Flats	34	46/37	69	9.0	75	74	59	*-
Yukon-Koyukuk	56	76/58	78	12.0	81	91	78	62
Mean of Districts	80	65/54	77	2.4	80	77	74	77
Alaska Statewide	8862	78/69	82	2.3	90	89	89	90
Urban Districts								
Anchorage	3142	82/72	94	1.2	93	94	93	95
Fairbanks	926	84/75	92	1.5	93	90	91	92
Matsu	913	88/76	95	2.0	93	93	97	96

* Unreported

Factors Identified from Interviews

The transcriptions of interviews reveal a variety of emerging factors related to teacher retention. Twelve participants highlighted advantages of working in Arctic schools, which included smaller class sizes, good student relationships, and opportunities to experience different cultures, unique outdoor activities, and the beauty of the Arctic. Almost every educator (13) interviewed for this study, however, cited struggling with the demands of working in a small school, living in a rural remote Arctic community, and learning how to integrate into an Indigenous community. Three of the first year teachers new to Alaska, and two of the teachers in

their second year of teaching indicated that they would apply for teaching positions in urban areas for the following school year. Only one teacher with more than five years of teaching experience indented to leave to be closer to family. According to Strange (2011) fully certified teachers and teachers with more than four years of teaching experience are less likely to leave village assignments or their profession. Often they have chosen their Alaska teaching assignments purposefully for a new life challenge or an interesting work opportunity after leaving or retiring from another state. This was confirmed by four of the participants. However, for the younger participants (below 30 years of age) teaching in the Alaska "bush" was their first assignment as a new teacher. The reasons for accepting employment in the Arctic varied from job availability (8) to adventure (4). Ten of the interviewees had never been to Alaska before hiring and reported limited knowledge about culture and place. Ten participants were struggling with the demands of the rural and remote life in a "foreign" cultural setting. Reported feelings of loneliness, isolation, seasonal depression, and personal failure may contribute to lower retention. All 15 participants stated that they were deeply committed to students and building strong student-educator relationships. This commitment often resulted in long school days (12), doing tutorials (11), coaching basketball teams (5), or preparing of lessons during evenings at schools using the only dependable Internet access point within the villages (13).

Our interview results confirm that the most committed teachers and teachers new to the profession seemed to be at risk of burnout, facing colossal demands with few boundaries in place to protect their time (Cochran-Smith et al., 2012). Younger and first-year teachers tend to move from rural to urban areas in Alaska as soon as job opportunities arise. One administrator summarized: *New to the teaching profession, new to an Indigenous community, and new to Alaska is a troublesome combination.* Teachers reported that understanding the Native knowledge systems and epistemology is challenging (8). As one teacher reported during the interview: *I go along with most people here, however, the feeling of being an outsider seems to be always present when I walk through the village. I really could use a local mentor to understand the culture.*

Overall, community support of the schools' mission and personnel vary greatly from village to village. Underlying historical events, current school and village leadership, and past and present teacher turnover rates seem to be correlated to overall community integration of teachers. One teacher indicated: *We had five principals in the last three years. All teachers are new to this school this year. People bet on how long teachers will stay. I somehow understand why they (students and local people) distrust us.* Building community, teacher, and school relationships are a collaborative effort as one Native teacher explained: *Community involvement into education? Teachers new to our school need to make an effort but so does the community. Going out, walking around, saying hi, understanding small talk, and dropping in unexpectedly is accepted and expected here in the village.* The complexity of living in Native villages, the low number of Native educators/mentors, geographical isolation, and the Arctic's demanding living conditions affect teacher retention. National accountability practices and proposals for teacher evaluations tied to student test scores may also become critical factors as reported by eight participants. Our data indicates complex factors related to teacher retention and a strong correlation of teacher retention to student achievement in rural Arctic Alaska.

Conclusions and Recommendations

This study confirms that the teacher turnover rates in rural districts vary widely over time and are significantly higher than in urban school districts. Additionally, there is a strong correlation between teacher retention and student achievement. Working conditions, curriculum, sociocultural living demands, and community integration influenced overall job satisfaction and retention of participants. School instructional program coherence and stable relationships predict student achievement (White, 2008). Interview results from this study indicate that when teachers leave schools, previously held relationships, instructional curriculum, and school-community integration patterns are altered and affect student achievement.

In order to become effective educators, to remain at their local schools, and be accepted by the community, teachers need support (Fry & Anderson, 2011; Kline et al., 2013; Winters & Cowen, 2013). In our study, educators assumed many roles related to and outside of their teaching duties. They succeeded through individual determination, long hours at school, and intimate professional commitment to their students. This approach is not sustainable and may be, in fact, the formula for early attrition. Better communication patterns and shared responsibilities between rural school districts, local administrators, teachers, community members, and university based teacher preparation programs need to be established. Further, school district hiring committees need to include local stakeholders and share responsibility for selecting, mentoring, and evaluating teachers, rethinking their ideas about who is a good fit to their school and community in light of the need for place relevant curriculum and current education policies, which emphasize high-stakes accountability measures. Our data also indicate that state teacher evaluation measures and increasing school demands on new teachers to immediately demonstrate on-the-job performance encourage practices of letting teachers go instead of providing appropriate support. Given the current national attention to teacher evaluation based on test scores and the local demand for culturally responsive teaching, teachers new to the Arctic communities need opportunities for ongoing professional development and induction.

The recruiting, hiring, and training of new teachers requires significant financial costs (Barnes, Crowe, & Schaefer, 2007). These costs drain resources that might otherwise be spent on program improvement or working conditions (Barnes et al., 2007; Darling-Hammond & Sykes, 2003). Such dynamics harm rural schools with historically underserved student populations the most, as these schools tend to have more persistent turnover and in some cases have fewer overall resources with which to work. Teacher retention, teacher effectiveness, and student achievement are multilayered and complex issues shaped by the socio-cultural context of the schools, state policies, labor market forces, and individual connections with students and community. To develop and retain effective teachers and to increase students' learning a collaborative approach is needed. Turnover results in loss of institutional knowledge among educators that is critical for supporting student learning. Though there may be cases where turnover is actually helpful to student achievement, on average, it is harmful. Policies will require a systems approach that entails analysis of the multiple interacting variables and development of a blend of solutions tailored for individual school settings.

Limitations and Further Research

Current findings are limited to a four-year data collection and focus on specific rural Arctic school locations. Findings may not generalize to other settings and continued longitudinal data are needed to predict future trends. Our certainty about interviewees' perspectives cannot be complete, but we are confident that the missing information does not inordinately bias our

findings given the convergence of information and saturation obtained from other sources. Quotations are the best recollection of the precise phrases used, rather than guaranteed verbatim reproductions.

Results provide evidence of complex interactions of variables that contribute to teacher retention. Future research could untangle such variables to capture the exact percentages of teachers who leave the classroom for administrative positions, to continue graduate school, get laid off by the districts for low performance, or because they are dissatisfied with work conditions. Thus, explanations and conclusions have to be drawn with caution. Researcher biases may be present despite careful comprehensive analysis of interview transcriptions and interpretations (Creswell, 2007).

In its current form, this study identifies factors contributing to teacher turnover and student achievement in rural Alaska in the local context of Native communities and may assist education policymakers and administrators in designing strategies to minimize turnover, increase teacher effectiveness and student achievement.

Funding

About the Author

Dr. Kaden is an Assistant Professor of Secondary Education at the University of Alaska- Fairbanks. Her experiences as an educator have occurred in such diverse locations as Germany, New Zealand, the United Kingdom, Texas, and Alaska. Her fields of expertise are science (geosciences/physics) and mathematics education. Her current research includes place informed teaching and teacher preparation for rural areas and indigenous communities. She actively promotes all fields of STEM education and is involved in field experience supervision of teacher candidates in rural and urban areas of Alaska.

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Transformations To Serve English Learners: A Call for Innovative Partnerships in Educator Preparation

Dr. Joan Lachance

Education reform for 21st century learning and the current era of standards-based instruction are profound catalysts for increased momentum and realignment of what is considered *the norm* with regard to diversity, multicultural education, and English learners (ELs). Now, more than ever, institutions of higher education (IHEs) are faced with understanding the profound and multifaceted relationships between education programs accreditation criteria and the critical concepts of culturally responsive pedagogy with language learning (Council for Accreditation of Counseling & Related Education Programs [CACREP], 2014; Council for the Accreditation of Educator Preparation [CAEP], 2013). This strategic balance between theory and application within preservice educator coursework includes the fundamental understanding of how to address local, state, and national needs for hard-to-staff schools and shortage fields, including English language learning. Likewise, IHEs as providers, must address educator candidates' development of critical concepts and pedagogy resulting in the elimination of academic barriers, as well as meeting the ever-changing demands of 21st century P-12 classrooms (CAEP, 2013; CACREP, 2014; Crethar, 2010; Gay, 2010; Schellenberg & Grothaus, 2011). The swift and ever-changing demands of the P-12 demographic ultimately require innovative thinking to continuously reflect upon programs and the demonstrative specifics related to authentic preparation for the tasks at hand. Once educators are in the field, they must meet the needs of the diversity within the United States P-12 population, designing and delivering educational services in diverse schools (National Center for Education Statistics [NCES], 2004, 2010, 2014).

Ultimately, the demands of educator candidates have swiftly transformed themselves to encompass strategic considerations concerning the impacts of collaborative cross-cultural literacies, multilingualism, and the emphasis on academic language development (Lee & Dallman, 2008). Candidates' competencies of globally productive student learning and academic success, cultural and linguistic diversity, as well as systemic change are the framing guiding principles for teachers' and school counselors' roles within professional school communities (American School Counselor Association [ASCA], 2012; Arredondo, Tovar-Blank, & Parham, 2008; National Center for Education Statistics, 2014).

With this in mind, a perpetual pattern of "missing the mark" still exists. Most educators still feel ill-prepared to work with English learners, in spite of the changing demographics and well-intended standards for educator preparation (de Jong, E. J., & Harper, C.A., 2005; Goodwin, 2002). Teachers, once working in school systems that were rather uniform, are now working with culturally and linguistically diverse students in a multitude of P-12 settings (NCES, 2014). Research also confirms that most teachers are white, female, of European descent, and with monolingual backgrounds in schooling (Lewis, 2006; Nieto, 2012; Kolano, Dávila, Lachance, & Coffey, 2014). Consequently, educator preparation programs must continue to think innovatively, searching for comprehensive answers to meet the demands of the profession.

Context of the Project

This study's findings are from an urban, qualitative investigation that carefully examined high school counselor practices with English learners, including specific elements for comprehensive partnerships with teachers. The contextual details for the study include its location in an urban district in the Piedmont (south-central) region of North Carolina. English as a second language program services for linguistically and culturally diverse students are provided in all schools for the district (NCDPI, 2014). Additionally, in accordance with public school licensure mandates in North Carolina, school counselors serving all students, including immigrant ELs, must have completed a masters-level counselor preparation program in order to work as a K-12 school counselor in a public school. Of the district's approximate 140, 000 students K-12, nearly 10 % are classified as limited English proficient (LEP) (Charlotte-Mecklenburg School [CMS], 2011, 2013).

Representative of the national trend, school counseling programs are clearly called to respond to the needs of diverse student populations, removing barriers to academic achievement through standards-based, comprehensive, and culturally responsive program services (Chen-Hayes, Miller, Baily, Getch, & Erford, 2011; Crethar, 2010; Martin & Robinson, 2011; No Child Left Behind [NCLB], 2001). Likewise, school counseling program policies follow those of the American School Counselor Association (ASCA) National Model for school counseling programs, decisively shaping program design and delivery (ASCA, 2008, 2010, 2012). The ASCA framework's quadrants of Foundation, Delivery, Management, and Accountability insist school counselors possess knowledge and skills for diversification within the student services. School counseling practices include an emphasis on rigor, diversity within experiential learning, and the facilitation of appropriate academic pathways for *all* students. (ASCA, 2012; Chen-Hayes, Miller, Baily, Getch, & Erford, 2011; NCDPI, 2014).

This multi-case study focused intensely on the experiences of four professional school counselors who revealed aspects of school counselor preparation, required daily practices in the field, and how they were equipped to work with ELs. Within the process, substantial particulars emerged regarding the urgency of understanding how to design and deliver culturally responsive, standards-based services to linguistically and culturally diverse students, including partnerships with teachers for critical input within the process.

Theoretical Frame

The fundamental principles of the study's framework are grounded in social constructivism, the idea that knowledge comes from real-world experiences (Glesne, 2006). Expanding this one step further explains this paradigm to mean that human beings do construct meaning as real-world perceptions through interaction with others across a variety of social contexts, including school, with undoubtedly deep-rooted cultural aspects (Crotty, 1998). Correspondingly, Lev Vygotsky proclaimed the fundamental concept that cognitive development and learning requires student interaction and [academic] language dialogue (Vygotsky, 1978, 1987). A child's achievement is fully dependent on and determined by interdependent problem solving in collaboration with capable peers under the guidance of an adult for eventual learned independence in completing academic tasks (Gibbons, 2002). Additionally, this study and its connections to language and culture are also framed by the theoretical understanding of linguistic

and sociocultural fundamentals of second language acquisition (Chomsky, 1986; Cummins, 1981; Krashan, 1985).

Theorist Jim Cummins' fundamental research in second language acquisition has resulted in the further conceptualization of language proficiency (Cummins, 1981, 2000; Gregory & Chapman, 2007). Cummins' distinction between two levels of language proficiency has had deep implications in the field of education, extending the shaping of pedagogy and language development (Gibbons, 2002). Cummins (1981) formalized the terms *Basic Interpersonal Communication Skills (BICS)* and *Cognitive Academic Language Proficiency (CALP)* in order to characterize the difference between the context-embedded social language used in everyday contexts from the context-reduced academic language necessary to do well on high-stakes testing in school. In order for English learners to be academically successful, they must master academic English as well as content area concepts through exposure to rigorous curricula (Calderón, Slavin, and Sánchez, 2011).

Therefore, school counselors and teachers are in strategic loci to be vigilant, to consider these crucial details along with the sociocultural context of diversity within education. These positions of teaching and school counseling facilitate partnerships when serving as true student advocates by facilitating the design of student-specific academic plans (Nieto, 2012). While the need for school counselors and teachers to have this understanding is clear, this study reveals the need to fully understand collaborative partnerships between school counselors and teachers to transform educational approaches with ELs in new, innovative ways.

Methods

This qualitative, multi-case study explored the intricate practice of how four high school counselors facilitated the course selection process for recently-arrived English learners via individual student planning (LeCompte & Schensul, 1999). Each participant was a recent graduate (within five years or less) of an accredited counselor preparation program, held North Carolina licensure in school counseling, and was monolingual. Attention was given to school counselors' practical display of preparedness for the task of addressing linguistic and social complexities while facilitating English learners' success through appropriate exposure to language, rigor, and content curriculum through observations and open-ended interviews. Considering these elements, qualitative analysis was employed, resulting in the thick description of school counselors' observed practices as well as their beliefs regarding beneficial knowledge and skills related to addressing the linguistic and social complexities of English learners. Table 1 shows the makeup of the participant group.

Data collection and analysis occurred in multiple stages (Merriam, 1998; Miles & Huberman, 1994). Since the purpose of this study was to examine emerging thick descriptions, the data collection for the study allowed for systematic procedures for collecting qualitative data through counselor consultative discussions, observations, audio recordings, and in-depth, ethnographic-like interviews, all of which generated knowledge (Atkinson, Coffey, Delamont, Lofland, & Lofland, 2001; Piantanida, Tananis, & Grubs, 2004; Seidman, 2006). The researcher's interview protocol for two 90-minute interviews per participant included questions that resulted in participants' expressions regarding what information they found to be helpful while working with English learners. This protocol, ethnographically framed field notes from four individual student planning session observations, each lasting a minimum of one hour, as

well as the verbatim transcriptions from counselor interviews, were used for open and axial coding. Constant comparative analysis was done to inductively identify and thematically categorize the emergent data. Selective coding served to refine the identified common themes and subsequent themes and patterns in the emerged data from the interview transcripts (Strauss & Corbin, 1998). The qualitative process for reduction, analysis, and interpretation of the findings ultimately resulted in the researcher's findings and conclusions of overarching themes and subsequent themes.

Table 1.
Participant Group

	Female	Male	Total
Recent Graduate	4	0	4
NC Licensure	4	0	4
Monolingual	4	0	4

Results

Conclusively, like teachers, participant school counselors who work with English learners described little or no strong feelings of competency to work with such students. This is relevant in the historical pattern (Collison, et al., 1998), and yet school counselors are uniquely positioned to play a crucial role for advocacy and education reform (Ravich, 2006; Singh, Urbano, Haston, & McMahon, 2010). School counselors must no longer be viewed as part of "ancillary hallways" where students receive intensive therapeutic services, but rather as team members to form comprehensive partnerships with teachers. School counselors as authorities on child development, academic achievement, mental health, and catalysts for systemic change (ASCA, 2012; NCDPI, 2014) bring innovative skills and knowledge that, when combined with pedagogical strategies, form a new layer in best practices for working with ELs (Albers, Hoffman, & Lundahl, 2009). Similarly, while all graduate coursework taken by the participants was found to be highly valuable and pertinent, there was little advantageous emphasis given to *how* to deliver comprehensive systems of service with English learners. The emergent, detailed thick descriptive data indicated nuances about the criteria used by school counselors to facilitate individual planning sessions with high school ELs. Four major areas for consideration were revealed. As a result, the organically formed subsequent themes of (a) the shape of students' prior education; (b) exposure to the curriculum; (c) teacher input; and (d) the lens of language had collective positions within the study's findings (see Figure 1).

Figure 1. Thematic Data for Criteria Used for Individual Student Planning.
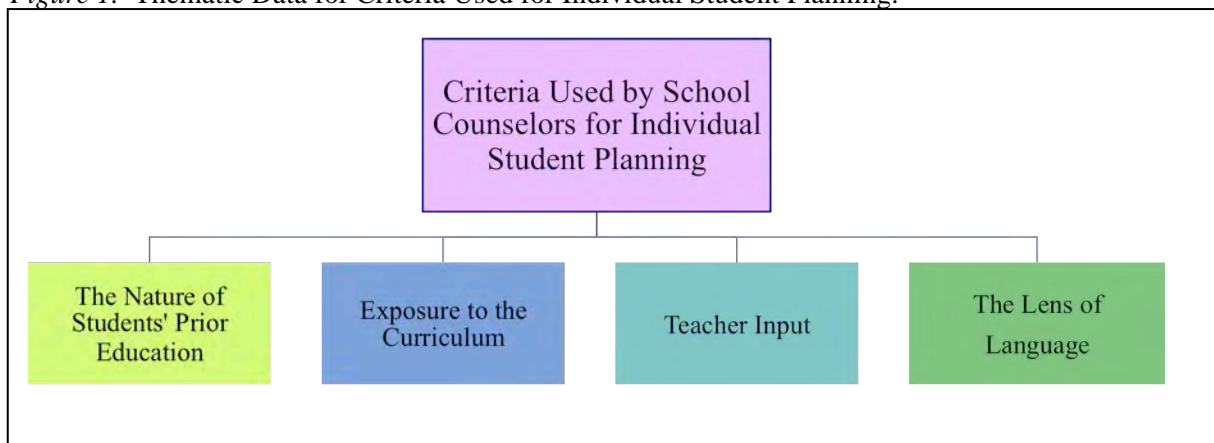
Criteria Used by School Counselors for Individual Student Planning

All four participants relied on myriad data sources for student related information to make specific educational recommendations. Examples of data sources noted were intake documents, enrollment forms, prior report cards and or school transcripts, and English language proficiency testing results. For the purposes of this presentation, there is focus on one specific area of findings, teacher input.

Teacher Input

As the interview protocol was used with all study participants, there was definitive evidence that the participating school counselors consider teacher input as important for individual student planning sessions and course selection with English learners. This is quite positive in approach as it indicates leadership, advocacy, and collaboration for the shared venture and common goal of student success (Militello, Rallis, & Goldrin, 2009; NCDPI, 2014; Skrla, Bell, & Scheurich, 2009). The remaining dilemma remains that teachers feel ill-prepared to work with second language learners (Delpit, 2006; Lee & Dallman, 2008). Interviews and observations within the study indicated that both teachers and school counselors understand they must address EL students' needs but are unclear about how to do this. The following is an example of observed nuances in this segment of the study, expressing the notion that teachers and counselors alike are in positions to collaborate regarding English learners yet often don't feel prepared to know how to collaborate. Participants shared their thoughts applicable to the questions regarding teachers' and counselors' reactions to English learner enrollment via individual student planning sessions:

  Participant: Well, I work with the ESL teacher and I get content teacher recommendations forms for all the core teachers so they recommend things. They know their students better than I know their students. They're in the classroom with them every day so they recommend things. The ESL teacher will also recommend when a student needs to come out of ESL. They will tell me where they think the students need to be.

  Participant: …some teachers are a little more accepting of an ESL student in their class. They might come to me and [say] "I've got this new student, what can you tell me about him—I know he doesn't speak any English." And some are great because you can just explain they should do what they can with them. And then you get the teachers that come up and say "I've got this kid in my class and he doesn't speak any English. What am I supposed to do with him?" And, you're saying "well, he's got to be somewhere." You're not the only teacher who has those students who don't speak a whole lot of English. Here [at this school] you get the extremes, even from the newer teachers.

Another participant expressed:

  Participant: The most common response from teachers is "what am I supposed to do with this kid?" That's the most common response about schedules because we've [our school] got kids who don't speak a word of English in courses like astronomy. Well, I mean we [counselors] needed to give them a class so basically what am *I* supposed to do wit this kid? I get a lot of that. A lot. Just like, what am I supposed to do, what am I supposed to do, what am I supposed to do? I mean it's a little uneasy for us all.

By and large, these teacher-generated conversations indicate teachers are willing to communicate with school counselors. These interviews, observations, and field notes confirmed the participating counselors were open to teachers' input, both content and ESL teachers, regarding students' placement in courses after their initial individual student planning sessions and course selections. In fact, this teacher input was considered vital. The polarization within the interview results and observation data was reflected in *how* the input was interpreted by the school counselors to then carry out services. More importantly, if both parties are unclear about what to do with English learners, the question remains whether or not the counselor/teacher partnership resulted in successful EL student exposure to curriculum and pedagogy required for academic language development (Genesee, Gava, Dressler, & Kamil, 2006). Meaning, the well-intended conversations between the counselors and the teachers may or may not result in ELs gaining access to teachers who feel confident with pedagogical practices to make the content subjects comprehensible, teaching language and content simultaneously (Ovando, Collier, & Combs, 2003; Short & Fitzsimmons, 2007; Walqui, 2000a, 2000b; Genesee, 2000; World-Class Instructional Design and Assessment [WIDA], 2014). Even with a desired attempt to serve ELs, the crucial need remains for teachers and school counselors to have *in-depth* understandings on how to effectively frame comprehensive pedagogical methodologies and additional student support services for language development processes and academic achievement.

Significance and Transformative Recommendations

In conclusion, the findings of this study solidified and extended the current literature regarding the role of the school counselor for the 21st century as advocates for collaborative educational transformation. (Albers, Hoffman, & Lundahl, 2009; Arredondo, Tovar-Blank, & Parham, 2008; ASCA, 2005; Bemark, 2000; NCDPI, 2014). This research is an urgent benchmark to generate new perspectives on the challenges educators face while working with ELs and ways in which comprehensive partnerships between school counselors and teachers can equip them for the charge. However, within these partnerships, it is evident that teachers and school counselors need specific criteria to discuss. A framework for collaborative discourse with specific attention to facets of EL students' academic backgrounds, language proficiencies, socio-cultural contexts for learning, as well as other pertinent details could serve to build a more foundationally-sound platform for pedagogical change (Parsons, 2009; WIDA, 2014). The needs for teachers and counselors to be well-informed is two-fold. First, they must understand that variations for language support in the classroom is vital for academic language development. Second, they must understand *how* to collaborate about this. (Camot, & O'Malley, 1994; O'Malley, & Chamot, 1989; WIDA, 2014).

Ultimately, the study reveals that school counselor education programs, while highly grounded in foundational theory, must look to find innovative ways to shape the parameters of experiences of teachers. These must support practitioners' comprehensive demonstration of a true sense of preparedness to work with English learners. A resounding recommendation links to strategic connections during clinical experiences to specifically involve English learners and the identified beneficial skills related to best professional practices while comprehensively collaborating with skilled teachers in this area. Another significant recommendation is to examine the option of infusing elements of second language acquisition and true comparative education into current course syllabi for teachers and school counselors. The notion of inter-disciplinary approaches between education faculty and Teaching English as a Second Language

(TESL) faculty may be further explored to combine the theoretical notions from myriad fields into the discipline-specific coursework.

Finally, with current national and state standards focused on a new vision for teachers and school counselors, it also becomes more crucial to also look for ways to support current practicing professionals through high-quality, on-going, and sustainable professional development, comprehensively coordinating communication and services. With these changes, the focus on English learners' student outcomes and academic achievement is more comprehensively addressed.

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Successes and Struggles of Teaching:

Perspectives of Beginning, Mid-Career, and Veteran Teachers

Dr. Alyson Lavigne and Dr. Amanda Bozack

Wages that are not commensurate with level of education (National Association of Colleges and Employers [NACE], 2013), demanding responsibilities, and pressures leveraged by high-stakes testing and evaluation, have led to soaring rates of attrition and a disproportionate number of beginning teachers in U.S. classrooms. Teacher experience has decreased from a mode of 15 years in 1978–1988 to five in 2011–2012 (Ingersoll, Merrill, & Stuckey, 2014). And, nearly half of all teachers leave within five years costing U.S. public schools 2.6 billion dollars annually (Alliance for Excellent Education [AEE], 2004).

These trends in the teaching workforce have important implications for school improvement, given that teachers show significant growth in their formative years (Henry, Bastian, & Fortner, 2011; Kersting, Chen, & Stigler, 2013; Rivkin, Hanushek, & Kain, 2005) and that *all* teacher turnover harms student achievement (Ronfeldt, Loeb, & Wyckoff, 2013). For these reasons, the insights of mid-career and veteran teachers who have successfully navigated the treacherous first years are especially important, particularly in comparison to their early-career counterparts. We wonder: Is there a way of thinking about the struggles and successes within teaching that buffer teachers from their environmental stressors and supports retention?

Struggles

Beginning teachers often hold idealistic expectations (Rust, 1994), but soon face the numerous challenges of reality, including: classroom management (Hong, 2012), higher student-to-teacher ratios, conflicts with pupils, feelings of inadequacy, assignments outside of their specialization (Manassero, et al., 2006), and a lack of curriculum guidance (Kauffman, et. al., 2002). Their struggles outnumber successes (Romano, 2008), particularly in teaching students with special needs and English language learners (Fantilli & McDougall, 2009). These challenges can lead to burnout (Gavish & Friedman, 2010), increasing a teacher's desire to leave the profession (Skaalvik & Skaalvik, 2010), especially without support from administrators, mentors, and assistance from colleagues (Alhija & Fresko, 2010).

Veteran and mid-career teachers also experience challenges that can undermine motivation—working with unfavorable external policies, poor student behavior, personal life events, increased paperwork, heavy workloads and long hours, and results-driven systems (Day & Gu, 2009). Yet, they report a continued desire for meaningful professional development and recognition of their experience through leadership opportunities (Tschannen-Moran & Woolfolk Hoy, 2007).

Successes

The literature on teachers' self-described successes or breakthroughs is negligible. Early studies found that teachers defined success in terms of student behavior—not their own actions or learning outcomes—and that the successes reported were affective rather than cognitive in nature (Harootunian & Yarger, 1981). Placek (1983) articulated this as equating success with students who are "busy, happy, and good [compliant]." (p. 54). More recently, Romano and Gibson (2006) and Romano (2008) found beginning teachers experienced success most frequently in classroom management and content/pedagogy.

Given the void in this literature, we explore beginning, mid-career, and veteran teachers' perceptions of successes *and* struggles in their own teaching. We posit that a clear understanding of how teachers conceptualize successes and struggles at different points in their careers can serve beginning teachers especially well, and that the framing used by more experienced colleagues who remained in the profession may be more constructive than the initial frames used by beginning teachers who are at risk of leaving the profession.

Conceptual Framework

Teacher development theory serves as the framework for this study, locating teachers' descriptions of successes and struggles within their life-career, job-specific development, and expertise. Early models viewed teacher development as a relatively abbreviated process. For example, Katz (1972) theorized that survival is the focus of the first weeks of teaching as teachers navigate urgent needs, issues, and events. Consolidation occurs within the first year, as teachers begin to see a bigger picture and focus on student needs. Veenman (1984) also found that beginning teachers frequently cope with the most immediate and basic needs, but these patterns extend beyond the first year of teaching. Katz (1972) recognized teachers as fully developed by year five—a year commonly identified in teacher literature as the last of the beginning years.

More complete models, such as Huberman's model (1989) and the Life Cycle of the Career Teacher model (Steffy & Wolfe, 1997; Steffy, Wolfe, Pasch, & Enz, 2000), view development as continuous from teacher preparation through retirement, where early years are a time of learning and experimentation. Huberman's model, however, theorizes that mid-career teachers can face monotony, self-doubt, and frustration in their attempts to improve practice, while, veteran teachers may become dogmatic and resistant to change as they begin to withdraw from the profession emotionally and physically. Alternately, the Life Cycle model theorizes that mid- and late-career teachers extend their professional roles through tutoring, substituting, or mentorship, illustrating the potential for veteran growth. Likewise, expert-novice research reveals that expert teachers rely on deep features (e.g., principles, beliefs) to conceptualize problem representations, focus on student behavior rather than their own teaching, and take a broader approach when analyzing classroom instruction (Sabers, Cushing, & Berliner, 1991).

Studies of world champion chess players reveal that it takes extensive deliberate practice to develop expertise (de Groot, 1946/1978), with some arguing a minimum of 10 years (Ericsson, Krampe, & Tesch-Römer, 1993). Although not all veteran teachers are expert teachers, expert teachers may be more likely to be experienced teachers. Using this framework,

we hypothesize that beginning teachers think in qualitatively different ways than their more experienced colleagues.

Method

This cross-sectional analysis includes selected data from a larger study examining teachers' beliefs about the profession. Participants were asked to respond to two broad, open-ended prompts as part of the survey: *1) Please describe the biggest breakthrough or highlight you have experienced during your time in the teaching profession*, and *2) Please describe the greatest struggle or low point you have experienced during your time in the teaching profession.*

Participants

Seventy-five teachers, grades K-9, from a large, suburban district located in the Midwest participated in this study. Teachers were primarily Caucasian/White (87%) and female (91%). The majority of participants held a Master's degree (69%). Teachers in the sample had between 1 and 37 years of experience ($M = 10.7$, $SD = 10.1$) and were organized into three categories based on the conceptual framework: beginning (1-5 years, $n = 32$), mid-career (6-10 years, $n = 16$), and veteran (10+ years, $n = 27$).

Thematic Development

Data were analyzed using an interpretive approach to qualitative content analysis (Bogdan & Biklen, 2003; Miles & Huberman, 1994)—a multi-step process using the constant comparative method (Glaser & Strauss, 1967). From themes, a coding system was developed and refined. The system organized into two overarching codes that were designed to capture subtlety in teachers' responses—complexity and content. *Complexity* was used to capture the richness of thinking present in participants' responses. A response was coded 'simple' if it was: composed of a single theme or multiple themes that offer little or basic reflection, limited in length without elaboration, or contained a list of themes. 'Complex' statements included contrast or comparison, cause and effect, were analytical or reflective in nature, or discussed the interconnectedness of two or more themes, people, or perspectives. The responses were also examined for patterns in topical themes that could be used to capture the focus of teachers' struggles and successes. The *content* themes focused on self, profession, students, parents, workplace, and technology. Additional sub-codes were created to capture nuance. See Table 1.

Findings and Discussion

As a whole, teachers' *successes* were most frequently 'professional'-themed and 'student'-themed, while their *struggles* indicated equal concerns about the 'profession,' 'students,' and the 'workplace.' Alternately, comments about parents were nearly absent in teachers' descriptions of success, but were present in their description of struggles (see Table 1). Teachers' responses were more frequently crafted in simple statements that focused on singular themes (61%) than more complex statements that integrated ideas or themes (38%).

Successes across Career Phase

Complexity. Results indicate that teachers become more complex in their understandings of success across the three time points (see Table 2). Thirty-nine percent of

beginning, 50% of mid-career, and 91% of veteran teachers' successes were coded as complex. For veteran teachers, these complex successes often included the realization of important beliefs, or addressed ways in which teachers saw themselves as vital to student learning. For one veteran teacher, this happened with the help of a colleague:

> During my 2-3 year of teaching, a teacher at my second school took the time and energy (without salary stipends) to help me understand the American Education system. She helped me direct my knowledge to become an effective teacher.

Although beginning teachers more often conceptualized their success in simple terms, complexly described successes often described specific and concrete ways their teaching practices yielded student outcomes. For example, one teacher noted: "I am beginning to understand that many kids are not fully engaged in my classroom. This is probably because I am not engaging them at the right level."

Content. *Professional* and *student*-related themes were the most frequently reported successes for all teachers, but to a lesser extent by mid-career and veteran teachers. The description of *professional* and *student*-related successes followed a consistent, downward trend across the three career points, with less than half of veteran teachers discussing these themes in their responses (see Table 2).

A substantial percentage of mid-career teachers noted *self-focused* themes in their successes—more than veteran teachers and beginning teachers. These *self-focused* successes included the realization of particular beliefs or perceptions about learners (e.g., setting high expectations). Veteran teachers' successes were the most varied and more evenly distributed across themes than their less experienced peers.

Despite the changing focus of teachers' responses across career points, successes were largely described across all career phases in terms of *professional* and *student*-themes, with *instruction* and *teacher pride* as the most frequently highlighted *professional* success. *Instructional* successes included the benefits of structuring curriculum to foster student motivation. For example, one teacher "discovered that if you make the curriculum have relevance, students will always want to learn more than time allows for." These types of student outcomes were often illustrated in the form of 'teacher pride'. One teacher noted that, "Helping students to achieve their academic goals is rewarding. All of my students have excelled in my classes. I take pride in this achievement!"

When teachers reflected on *student*-related successes, *learning* was the most frequently noted. Teachers often described these successes as student growth, but rarely provided richer explanation. When teachers did expand upon concepts related to student learning, the comments were fairly sophisticated. One teacher noted the value of both "aha" moments and application:

> My breakthroughs are not humongous moments, but rather instantaneous sparks in a child's eye when he/she understands a concept. Other important moments are when a student relates a recently learned concept to the real world and is capable of expressing his/her new learning.

In sum, the qualitative ways in which teachers conceptualize their successes support existing theory and research. Beginning teacher responses are simpler, narrower

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conceptualizations that primarily focus on teaching. Patterns in self-described successes indicate that across career phases, teachers develop broader and more varied conceptualizations of success, and these successes are described in more complex ways.

Struggles across Career Phase

      Complexity. Despite career phase, teachers were similarly skillful in reflecting on their struggles. Approximately 33-40% of teachers described their struggles in complex ways, with beginning teachers most frequently doing so (see Table 3).

      Beginning teachers complexly described struggles that were often related to school, but not necessarily their classrooms. Some beginning teachers noted the challenges of policy, high-stakes testing, or collaboration with colleagues. Others noted challenges with students and lack of administrative support. While beginning teachers' challenges varied, veteran teachers' complex responses described how students' outside-of-school issues affect their teaching and the impact of their instruction on student learning outcomes. One veteran teacher noted:

> The biggest struggle has been finding ways to reach reluctant readers who have little support outside of school. Instilling a sense that education has value and that it can make a difference in their lives is so important and often times hard to demonstrate in a real life manner.

      Content. *Professional, student,* and *workplace*-themed struggles were the most frequently noted across career phases (see Table 3). For beginning teachers, *professional*-related themes dominated their struggles. This was crystalized in the responses of some beginning teachers who described the task complexity inherent in the job, such as seemingly unrealistic performance expectations:

> One great struggle is planning instruction and gathering high quality materials for each lesson (at each grade level) to include all the required objectives (learning objectives, oral language objectives, individual student objectives), strategies reflective of best practice, on-going assessment and data gathering, and writing it up in formal lesson plan format. I love the kids, and want them to have the best, but I simply can't keep up.

Mid-career teachers' descriptions of struggles were spread evenly between *professional, student,* and *workplace*-related themes. Veteran teachers, however, described *student* themes most frequently at the center of their struggles. The following self-described struggle of a veteran teacher highlights the difficult task of educating students well despite competing foci:

> I struggle with the outside stressors students are living with daily, and how it impacts their ability to learn. Sometimes they just don't care about school because of the overwhelming issues in their lives. A teacher can care, and hope to inspire a student to care, but a teacher can't MAKE a student care about learning.

Professional sub-themes of *classroom management* and *teaching assignment* were described as struggles across all career phases. However, *instruction*—the dominant *professional* sub-theme in beginning teachers' struggles was less frequently noted in mid-career teachers' responses and was absent in veterans' responses. In teachers' student-themed struggles and across career phase, teachers shifted away from behavior-related struggles.

As with successes, the ways in which teachers describe their struggles across career phases support existing theory and research—a shift from teaching to students. Yet, contrary to expectations, beginning teachers in this study are particularly skillful in describing their struggles in complex ways. There are a number of possible explanations. Assuming that veteran teachers in this sample might be experts, these findings might suggest that expertise evolves differently in negative and positive experiences of a teacher's life and work. A second hypothesis is that beginning teachers experience more struggles than successes (Romano, 2008), and as a result, become particularly accomplished in reflecting on their struggles.

Conclusion

In the current study we asked: Is there a way of thinking about struggles and successes that buffers teachers from their environmental stressors and supports retention? We proposed that understanding how teachers think about successes and struggles at different points in their careers may serve beginning teachers especially well. More experienced colleagues who remain in the profession have likely stabilized in their ability to demonstrate student achievement gains (Henry et al., 2011; Rivkin et al., 2005). Their framing of successes and struggles may be more constructive than the initial frames used by beginning teachers who are at risk of leaving. Taken together, valuable insight for teacher education and induction can be gained by conceptualizing study findings (or teachers' ways of thinking) as a potential function or by-product of teacher effectiveness or retention.

Three key findings are particularly noteworthy. As expected (Gonzales & Carter, 1996; Sabers et al., 1991; Steffy et al., 2000; Steffy & Wolfe, 1997), teachers' responses became increasingly more complex across the three career phases, illustrating a shift from teaching to students. Second, teachers' understandings of their struggles were less complex than their successes, though beginning teachers were slightly more skillful in reflecting on their struggles than their more experienced peers. And, third, few teachers (9%) noted the interconnectedness between teaching and learning, contrary to the expectation that veteran teachers may be particularly attuned to this component (Gonzales & Carter, 1996; Sabers et al., 1991).

Teacher education and induction support

Drawing upon teacher development theory (Steffy et al., 2000; Steffy & Wolfe, 1997), reflective practice should begin as early as students have access to the classroom. Assuming that veteran teachers' conceptualizations are adaptive and productive ways of thinking, teacher education programs and induction programs should support reflective practice that address both successes and struggles with a strong emphasis on inputs, outputs, and their relationship. The goal would be to develop teachers who understand the complex ways their teaching practices are related to student learning, yielding teachers who are equipped with the strategies needed to improve their practice and be effective (Calderhead, 1989). Connecticut's induction program, highly ranked by the New Teacher Center (2012), is an example of such a program (Bozack, Freilisher, & Salvaggio 2012).

Mentors also serve a critical role in new teacher induction and retention (Smith & Ingersoll, 2004). And, findings from this study suggest that more experienced teachers can offer unique contributions as mentors. The reduced frequency by which more experienced teachers noted 'instruction' and 'student behavior' as struggles suggests that these teachers have

successfully overcome the challenges that beginning teachers traditionally confront (Hong, 2012; Kauffman et al., 2002). Likewise, mid-career and veteran teachers in this study demonstrated an increasingly complex understanding of success, mirroring findings from other teachers who have also remained in the profession (Hong, 2012). With this in mind, mid-career and veteran teachers may be particularly helpful in providing interventions that help beginning teachers improve their reflection and instruction (Hogan & Rabinowitz, 2009; Pretz, Naples, & Sternberg, 2003). Furthermore, beginning teachers may benefit from observing how mid-career and veteran teachers interpret their successes and struggles. Because ecological support from colleagues can support first-year teacher assimilation (Alhija & Fresko, 2010), working with mentors to foster adaptive coping mechanisms may help retain and sustain beginning teachers, particularly during a time when they are most likely to leave (AEE, 2004) and are establishing their effectiveness (Henry et al., 2011; Kersting et al., 2013; Rivkin et al., 2005).

Future research should consider context in exploring how teacher development and the development of expertise are related to teacher self-efficacy, teacher effectiveness, and retention. For example, exploring the frequency, magnitude, and comparative nature of teachers' struggles and successes (Boyd et al., 2011) may reveal why there were contradictory trends in response complexity across career phases. Although open-ended responses (like those used in the current study) offer an important understanding of how teachers interpret breakthroughs and struggles, it is limited. In-depth interviews may offer a richer illustration of how context matters. Finally, it is valuable to note that this study was conducted prior to Race to the Top and the Common Core State Standards. A follow-up study may reveal to what extent current reform is shaping the ways teachers think about the world and work of teaching.

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Table 1

Overall Frequencies by Type of Response

	Success		Struggle		Total	
Codes	*n*	%	*n*	%	*n*	%
Complexity						
Simple	45	60.00	46	61.33	91	60.67
Complex	29	38.67	28	37.33	57	38.00
Content						
Self-focused	10	13.33	5	6.67	15	10.00
Professional	2	2.67	2	2.67	4	2.67
Teaching Practices: Instruction	6	8.00	2	2.67	8	5.33
Teaching Practices: Classroom Management	2	2.67	4	5.33	6	4.00
Teaching Practices: Social/Emotional Support	3	4.00	0	0.00	3	2.00
Teacher's Role in Specific Student Issues	5	6.67	2	2.67	7	4.67
Teaching Practices: Assessment	1	1.33	2	2.67	3	2.00
Teaching Assignment	1	1.33	8	10.67	9	6.00
Professonial Development	2	2.67	0	0.00	2	1.33
Teacher Pride	10	13.33	0	0.00	10	6.67
Total Professional	32	42.67	20	26.67	52	34.67
Students	7	9.33	1	1.33	8	5.33
Learning	12	16.00	3	4.00	15	10.00
Social-emotional	5	6.67	1	1.33	6	4.00
Behavioral/Individual Dispositions	3	4.00	15	20.00	18	12.00
Total Students	27	36.00	20	26.67	47	31.33
Workplace	1	1.33	4	5.33	5	3.33
Administration	0	0.00	11	14.67	11	7.33
Coworkers	3	4.00	5	6.67	8	5.33
Physical Environment	0	0.00	0	0.00	0	0.00
Resources	0	0.00	0	0.00	0	0.00
School-related Activities	0	0.00	0	0.00	0	0.00
Roles and Responsibilities	0	0.00	0	0.00	0	0.00
School and District-Level Politics	0	0.00	0	0.00	0	0.00
Total Workplace	4	5.33	20	26.67	24	16.00
Parents	1	1.33	6	8.00	7	4.67
Technology	4	5.33	0	0.00	4	2.67
Other	2	2.67	7	9.33	9	6.00

Table 2

Frequencies for Successes by Career Level

Codes	Beginning		Mid-Career		Veteran	
	n	%	*n*	%	*n*	%
Complexity						
Simple	19	61.29	7	50.00	1	9.09
Complex	12	38.71	7	50.00	10	90.91
Content						
Self-focused	2	6.45	4	26.67	4	13.79
Professional	2	6.45	0	0.00	0	0.00
Teaching Practices: Instruction	7	22.58	2	13.33	3	10.34
Teaching Practices: Classroom Management	0	0.00	1	6.67	1	3.45
Teaching Practices: Social/Emotional Support	2	6.45	0	0.00	2	6.90
Teacher's Role in Specific Student Issues	4	12.90	1	6.67	1	1.33
Teaching Practices: Assessment	0	0.00	0	0.00	2	6.90
Teaching Assignment	0	0.00	0	0.00	1	1.33
Professonial Development	1	3.23	1	6.67	0	0.00
Teacher Pride	7	22.58	4	26.67	4	13.79
Total Professional	23	74.19	9	60.00	14	48.28
Students	1	3.23	3	20.00	3	10.34
Learning	12	38.71	3	20.00	5	17.24
Social-emotional	2	6.45	1	6.67	2	2.67
Behavioral/Individual Dispositions	3	9.68	0	0.00	0	0.00
Student Pride	4	12.90	0	0.00	2	6.90
Total Students	22	70.97	7	46.67	12	41.38
Workplace	1	3.23	0	0.00	0	0.00
Administration	0	0.00	0	0.00	0	0.00
Coworkers	1	3.23	1	6.67	3	10.34
Physical Environment	0	0.00	0	0.00	0	0.00
Resources	0	0.00	0	0.00	0	0.00
School-related Activities	0	0.00	0	0.00	0	0.00
Roles and Responsibilities	0	0.00	0	0.00	0	0.00
School and District-Level Politics	0	0.00	0	0.00	0	0.00
Total Workplace	2	6.45	1	6.67	3	10.34
Parents	0	0.00	0	0.00	1	3.45
Technology	1	3.23	0	0.00	3	10.34
Other	0	0.00	0	0.00	2	6.90

Table 3

Frequencies for Struggles by Career Level

Codes	Beginning		Mid-Career		Veteran	
	n	%	*n*	%	*n*	%
Complexity						
Simple	18	60.00	10	66.67	18	62.07
Complex	12	40.00	5	33.33	11	37.93
Content						
Self-focused	1	3.23	0	0.00	4	13.79
Professional	1	3.23	0	0.00	1	3.45
Teaching Practices: Instruction	5	16.13	2	13.33	0	0.00
Teaching Practices: Classroom Management	4	12.90	2	13.33	1	3.45
Teaching Practices: Social/Emotional Support	0	0.00	0	0.00	0	0.00
Teacher's Role in Specific Student Issues	1	3.23	1	6.67	2	6.90
Teaching Practices: Assessment	3	9.68	0	0.00	1	3.45
Teaching Assignment	4	12.90	1	6.67	3	10.34
Professonial Development	0	0.00	0	0.00	0	0.00
Teacher Pride	0	0.00	0	0.00	0	0.00
Total Professional	18	58.06	6	40.00	8	27.59
Students	0	0.00	0	0.00	1	3.45
Learning	1	3.23	2	13.33	2	6.90
Social-emotional	0	0.00	0	0.00	1	3.45
Behavioral/Individual Dispositions	9	29.03	4	26.67	5	17.24
Student Pride	0	0.00	0	0.00	0	0.00
Total Students	9	29.03	6	40.00	9	31.03
Workplace	1	3.23	1	6.67	2	6.90
Administration	6	19.35	4	26.67	1	3.45
Coworkers	2	6.45	0	0.00	4	13.79
Physical Environment	0	0.00	0	0.00	0	0.00
Resources	0	0.00	0	0.00	0	0.00
School-related Activities	0	0.00	0	0.00	0	0.00
Roles and Responsibilities	0	0.00	1	6.67	0	0.00
School and District-Level Politics	0	0.00	0	0.00	0	0.00
Total Workplace	9	29.03	6	40.00	7	24.14
Parents	2	6.45	1	6.67	5	17.24
Technology	0	0.00	0	0.00	0	0.00
Other	2	6.45	2	13.33	3	10.34

Teacher Inquiry: A Foundation for Mentoring Teachers During Induction and Throughout Their Career

Dr. Michele A. Marable, Dr. Kristen A. Kurtzworth-Keen, Dr. Kelly A. Harper, and Karen M. Dutt-Doner

Public education in the United States is faced with the challenge of keeping its teachers. Attrition rates continue to be disappointing, with 50% of teachers leaving the field by the end of the fifth year (National Center for Educational Statistics, 2001). Of the 3,214,900 public and private school teachers who were teaching during the 2003–04 school year, 22% percent left the profession while 16% moved to another school (Marvel, et al, 2003). These authors also report factors that influence teachers' decisions to leave teaching that included those who stayed working in the field of education. Among these teachers who left private school teaching positions, 51 percent reported that the workload in their new position was more manageable than in teaching. Among the public school teachers, fifty-five percent who left teaching but continued to work in the field of education reported that they had more control over their own work in their new position than in teaching, while 65 percent of public school leavers who worked outside the field of education felt that their workload in their new position was more manageable and that they were better able to balance their personal and work life (Marvel, et al, 2003). These figures and subsequent reasons contribute to the challenges faced by school districts to maintain a stable work force.

Johnson and Birkland (2003) conducted a longitudinal interview study of 50 new teachers in Massachusetts to present their reasons for staying, moving to another school, or leaving the profession. Those who left the profession cited their experiences at the school sites were central in influencing their decisions. Teachers who felt successful with students and whose schools were organized to support them in their teaching; that is, providing collegial interaction, opportunities for growth, appropriate assignments, adequate resources, and school wide structures supporting student learning were more likely to stay in their schools, and in teaching, than teachers whose schools were not so organized.

It is a well-documented fact that novices feel unprepared (Ryan, 1992; Kaff, 2004) and as time passes, their insecurity continues as reported, "feelings of isolation, interest in not abandoning university teacher preparation, and the need to learn from mentoring" (Stanulis, Fallona & Pearson, 2002, p. 79). Among the many strategies used to support teachers, mentoring was introduced in the early 1980s and is now mandated by over 30 states (Feiman-Nemser, 2003), and implemented in some form by at least 47 states (Brown, 2003). Ingersoll and Smith (2004) reported that in 1999-2000, eight out of ten new teachers in the United States participated in induction programs, and about two-thirds worked closely with a mentor. Beginning in 1989, The Council for Exceptional Children (CEC) recommended standards for special educators entering the profession that included a minimum of one-year mentorship during the first year of practice.

Danielson (1999) reported that mentoring has been recognized as "a critical element of a comprehensive approach to teacher development" (para.1). Mentoring is seen as a cost effective way to increase skill, enhance recruitment and retention, and increase job satisfaction (Kerka, 1994). The professional literature heartily supports the use of mentoring (Anderson & Shannon, 1998; Boyer & Gillespie, 2000; Bronwell & Smith, 1992; Ganzer, et al., 1998; Griffin, 1985; Odell & Ferraro, 1992; White & Mason, 2001, Cochran-Smith, 2012). It includes critical elements of mentoring programs for program to consider (Blank & Sindelar, 1992; Danielson, 2002; Darling-Hammond, 1998; Feiman-Nemser, 2003; Hope, 1999). Hargreaves and Fullan (2000); Rowley (1999), Marable and Raimondi (2007b), define qualities of an effective mentor to further delineate critical elements of successful mentoring programs. Billingsly, Carlson and Klein (2004) provide descriptions of working conditions and induction supports for early career teachers to ensure adequate support while Brindley, Fleeger, and Graves (2000); Whitaker (2001) discuss perceived quality programs to offer ways to define experiences and critical support structures.

Recently, Cochran-Smith (2012) emphasized the need to create a variety of supports to better ensure that teachers stay in the profession. She describes the importance of the mentor-intern match, the need for professional learning communities, and the critical elements of perceived "safety" to ask questions, admit uncertainties, and embrace continued learning. These findings resonate with those of a similar study (Marable & Raimondi, 2007a) and intersect with initiatives of the US Department of Education Office of Special Education's 325T Grant (H325T110018). The Justice for Underserved Students: Teacher preparations in Inclusive Classroom Environments (The JUSTICE Project) goals and objectives for years three and four (2014-2015) emphasize teacher induction programming, along with professional development. Literature has suggested embedding sustained, professional learning in PLCs is most effective in meeting students' needs (DuFour, 2014). Cochran-Smith and Lytle (2009) emphasized the need for PLCs immersed in teacher inquiry to ask questions, admit uncertainties, and embrace continued learning as relevant elements in a mentoring program.

During the 2013-2014 academic year, the JUSTICE Project funded a professional development (PD) series on co-teaching. The conceptual framework for the PD series included recommendations from the grant's advisory council as well as a review of literature. The series foundation included four key components that inspired the conception of a mentoring model. Inquiry as stance, PLCs, evidence based practice (EBP) and data-based decision making served as the basis for the series and also provided a comprehensive approach to mentoring teachers.

Inquiry as stance (Cochran-Smith, 2012) empowers teachers to systematically review their practice judiciously, examine possible teaching and intervention strategies, and analyze the results using data. Topics relevant to co-teaching served as the vantage point as teachers considered the inquiry process. That is, they were challenged to look critically at their teaching and use data to investigate interventions that would improve outcomes for children. Each session introduced the most current co-teaching strategies and techniques grounded in research. Teachers were required to consider new information as they analyzed their own practice. Project Directors worked with teachers at the beginning and end of each session to introduce the inquiry process in a sequenced developmental approach. These included identifying and formalizing a problem statement, summarizing the setting and subjects, choosing an instructional or behavioral intervention to use within the co-teaching model, identifying roles, and describing what will be

measured and how. Finally, participants conducted investigations during a specific timeframe. This provided sufficient time to reflect, discuss, and present findings with respect to the school calendar.

Emphasizing evidence based practice imposed a high standard on teachers to plan, implement and measure the effect of research based strategies based on substantiated facts. Additional resources were provided for examination beyond the PD sessions. Teachers were encouraged to review articles relevant to the topics. They were required to utilize EBPs to improve outcomes and use practice based evidence to make decisions. Practice based evidence refers to a collection and analysis of classroom data to determine if there is a relationship between teachers' instructional practice and students' academic, behavioral, and social development (Fink-Chorzempa, Maheady &Salend, 2012). Maheady, Smith, and Jabot (2013) assert that practice based evidence may complement EBPs in that if teachers can substantiate the use of certain interventions and find they improve student outcomes, they may be more inclined to investigate the use of other EBPs in their classroom.

Participants were organized to form PLCs (Cochran-Smith, 2009) initially to support each other in learning about inquiry. That is, reserved seating facilitated discussion during each PD session for those who conducted the teacher inquiry research project (TIRP). A web-based platform allowed for posed questions, discussion and reflection between sessions. Project directors monitored the discussion forum to offer guidance and support as appropriate. As time progressed, smaller groups formed based on shared complexities. The larger group met after each PD session to discuss new information about the inquiry process and then broke into 'common issues' PLCs. While some teachers worked in the same building, others were alone, and thus, the PLC framework allowed for support and discussion during each PD session. Further, the web-based discussion forum allowed participants to question, share knowledge, and support each other's work regardless of proximity.

Using empirically supported interventions in more natural settings imposes collecting progress monitoring data to determine selected practices' effect on outcomes for children (Maheady, et al., 2013). Making data-based decisions imposed a reach back to college classes for some veteran teachers. While their experience reflected many informal evaluations, the more rigorous process of data collection, analysis, summarization and presentation compelled a more formal approach. Methods were clarified at each session and clear, reliable data sources were identified. A session on single-case design required participants to document their findings and facilitated data-based deliberations. This allowed participants to validate their results and provide a visual presentation of their conclusions. Finally, a template provided by Project Directors served as the framework for a poster presentation of TIRPs.

Current undergraduate and graduate students were invited to join teachers and administrators in the five part PD series spanning the school year. A cooperative agreement established with a local urban district's Teacher Center promoted teacher attendance as well as a process for participants to earn district credit for completing the TIRP. The co-teaching theme addressed topics such as models; communication; challenges and strategies found successful by veteran teams; and assessment and data analysis. Each session lasted 2.5 hours and was held after school hours. All teachers worked in an urban setting, serving children with mild disabilities. Eighty teachers attended each offering, and 25 participated in the TIRP. At the end of each session, the 25 participants worked together with JUSTICE project directors to study the

entire inquiry process. This allowed for a developmental, sequential approach to inquiry and facilitated rich discussion among participants, project directors, and school district staff. As the academic year progressed, the large PLC met to discuss global issues related to inquiry and then smaller PLCs formed based on mutual interest and shared experiences. Both formats served to support the teachers' ability to reflect and to empower them to make their own decisions based on the data they collected.

A pilot study examined the impact of the paradigm. Specifically, the researchers were interested in learning about the pros and cons of the model, and participants' perceptions of the experience. Given today's climate of attention to student outcomes, the TIRP participants entered this experience hoping it could be a means to improve their practice and undoubtedly the success of their students.

Methodology

This study deployed qualitative research methods to observe, describe, and analyze participant perception of the TIRP. The questions guiding the research probed the structure of meaningful professional learning opportunities; teacher inquiry's role in the PLC; and the process of implementing EBPs into instructional procedures. Data related to these questions were collected after each PD session. As the TIRP progressed, observations were recorded, responses to inquiry questions were read, and final projects were examined.

At the end of the poster session, participants answered an online survey documenting their perception of the experience. Two weeks later, the participants returned to contribute in a focus group interview, thus allowing them to elaborate on their responses, and to add additional thoughts developed over time.

Qualitative data were collected in the form of interview and focus group procedures. All participants received an implied consent form prior to the focus group interview and were allowed to ask relevant questions regarding their role. Each was assured that confidentiality would be respected and information would be reported with anonymity. Further, researchers employed member checking (Lincoln & Guba, 1985) during the interview and at the end of the analysis increase the credibility and validity of the study. The researchers built rapport with the participants in order to obtain honest and open responses. During each interview, the researchers restated or summarized information and then questioned the participant to determine accuracy. Each was provided with the findings section and allowed to question any part of the report. These member checking strategies (Lincoln & Guba, 1985) provide trustworthiness to the analysis and ensure content validity. Data were independently coded by each of the researchers and themes provided the framework for subsequent analysis. Findings reflect data that were triangulated in a variety of ways.

Through the interview process, the researchers ascertained and explored views from the teachers' and administrators' perspective of their TIRP and the entire PD experience. The researchers systematically evaluated data collected throughout the year using thematic coding. Iterative analyses of the data identified important and sometimes unexpected themes that emerged. Data were derived from structured interviews among higher education faculty and the practitioners. Data collected also included anecdotal notes from practitioners (i.e., discussion forum entries, conversations). Participants completed the online survey immediately after their

poster presentation and were allowed to elaborate on their answers in a subsequent focus group meeting.

After all interviews were transcribed and checked for accuracy, the researchers read them individually. Each developed a list of themes identified during this first reading. Next, they shared lists to ascertain similarities and differences. Codes were agreed upon, some were combined that were synonymous, and an outline with multiple levels emerged. Finally, they re-read the transcripts and coded data adhering to the outline. Again, similarities and disagreements were addressed, codes were narrowed, and various sources considered. Themes were included in the final analysis if they represented unanimous agreement among the researchers, were evident across multiple sources, and were triangulated across data sources. No apriori design was defined; that is, themes emerged as a result of data analysis.

Findings

Researchers evaluated the data to understand how participants applied the knowledge and skills gained to improve practice. Data analysis has been conducted from the pilot study and continues to be collected in the second year of the research study. Initial examination reveals general themes relevant to professional development, teacher inquiry, and mentoring.

Consensus among participants regarding professional development supports their preference for practical, hands-on interventions that they could choose to replicate in their classroom. Most cited the interventions addressing student behavior, opportunities to respond, and parent engagement strategies as the evidence based practice they would want to replicate. Thus, providing a menu of options that illustrate EBPs to solve a variety of classroom issues served the participants well, according to their responses. The PD Series in general and the TIRP in particular promoted professional growth opportunities for participants to focus on improving student outcomes that they personally found to be challenging in their classroom. After receiving training to implement and exploring the evidence demonstrating the effect of a variety of interventions, participants were empowered to make choices of interventions that would meet the needs of their students.

The findings related to teacher inquiry and mentoring seemed to overlap in several dimensions. Since the TIRP imposed inquiry as stance on the participants, many suggested the need for continued and sustained support during the process. The PD Series provided an online platform to pose problems and discuss issues, but some participants preferred the face to face support in their school building. Regardless of their years of experience as teachers, this new process required significant support from the participants' perspective. Many participants cited the need for more time to plan for the TIRP, more support in intervention, data collection, and suggested a coach or expert onsite in their school to assist them in the process.

While not in the control of the researchers, many cited the lack of resources available to them in their schools. For example, some felt they should not have to invest their personal money to purchase supplies needed for the interventions, yet they emphasized their frustration in administration for not providing necessary supplies. Further, some suggested the need for the researchers to intervene regarding personal relationships among and between the teachers/participants. Again, not under the control of the researchers, these issues bring light to

the need for extensive training regarding co-teaching and that perhaps pairs need a process to address tensions or other issues they may encounter in the classroom.

The findings provided insight on how to structure teacher inquiry to move evidence-based practices (EBPs) into everyday practice. Second, it analyzed how teacher inquiry was used to improve student outcomes by providing participants a support system to develop TIRPs. With a guided model, PD training, and the support of a PLC, participants were able to address a problem within their classroom, implement a study, and analyze the results to improve student learning. A collaborative reflective process facilitated a deeper understanding of teacher practice, facilitated relationships among most participants, and served as a support system for participants.

Finally, the participants reported overwhelming feelings of pride, increased professionalism and empowerment. A poster session allowing each participant to visually present and speak about their TIRP celebrated the projects' completion. School administrators, teachers, and college faculty were invited to the research showcase. Participants reported feelings of deep satisfaction, pride, and a sense of accomplishment rarely felt in their teaching career. A few suggested this was the highlight of their career, and many reported that this achievement inspired them to return next year. Some requested an opportunity to present at the district's Teacher Center, implying their perception of the pride associated with their TIRP.

Rather than utilizing a top-down or novice- expert system of problem solving (teachers pose problems solved by professors), the PLC and TIRP facilitated a process of increased responsibility, accountability, and satisfaction in finding solutions in the classroom setting. In summary, the TIRPs demonstrated the practical implications research has for teachers in the classroom. Participants gained valuable insight from the research process by reflecting on and answering inquiry-based questions. Data analysis for this pilot supports the interest to utilize the model for teacher induction and mentoring and provides a model to serve as the foundation.

Discussion

Findings from a pilot study using TIRP, PLCs and professional development as the basis to improve teacher practice show promise to serve as a mentoring-induction model for new teachers. A year-long PD series infused with the inquiry process taught teachers to utilize new information learned to apply to problems and challenges they faced in their classroom. Further, it may foster the continued use of EBPs after seeing success initially. A large PLC addressing the steps of inquiry evolved into smaller, topic specific PLCs that allowed teachers to support one another in the process. Finally, each participant conducted an inquiry project in their classroom and reported findings at a poster session held on the college campus. Feelings of empowerment, increased professionalism, and increased confidence were reported by all participants. These results indicate the model may be beneficial to utilize in a mentor program.

## Implications for Further Research

Initial findings show promise for a model that infuses professional development with teacher inquiry. Further study in several areas seems appropriate. First, dynamics of teacher pairing may need further study to allow for the most productive co-teaching models. Second, the need for support during the inquiry process may be addressed by requiring more than one TIRP

in each building for those participants who prefer face-to-face support rather than an online application. Pairing participants may also facilitate the fidelity checking procedure so that while supporting each other, team members can also conduct observations to monitor the intervention's fidelity. Finally, more data must be conducted from participants in the TIRP to allow for a more deep and broad analysis of their perceptions.

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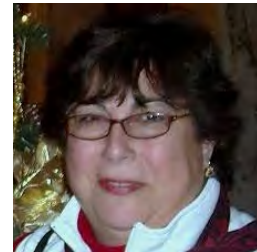
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Perceptions of Transformational Leadership Behavior by Secondary Principals and Teachers in Diverse and Non-Diverse Schools

Dr. Fernando Valle and Gionet L. Cooper

Teachers and principals across the country are continuously called to improve and transform underperforming secondary schools. Today, accountability requirements for *ALL* students place teacher effectiveness and the improvement of student learning in the educational spotlight. To improve schools, the examination of teacher and principal disposition toward the diversity in public schools is part of the import work to meet the diversified set of challenges faced by secondary campuses. School leaders and teacher alike must embrace their school context and the demographic as strengths to succeed in today's public school accountability climate. Effective transformational school leaders enact the principles of transformational leadership across and within schools to begin the transformative process of improving student achievement. This explanatory, sequential mixed method study focuses on principals and teachers perceptions of these transformational practices in diverse and non-diverse secondary schools.

Purpose of the Study

Leadership studies support a belief that one of the primary goals of twenty-first century public school leaders is to lead schools with the purpose of sustained and substantive improvement (Eaker, 2008; Green, 2010; & Spillane, 2006). The impetus for this study was to delve deeper into the transformational leadership style and practice of secondary school principals in diverse and non-diverse secondary campuses. Principals and teachers participating in this study were given the opportunity to report the frequencies of transformational leadership characteristics being practiced by their administration through the Leadership Behavior Inventory (Kent, 2007). For the purpose of this study, a school population consisting of a proportion or combination of less than 40% of African American, Hispanic, and Asian students within a school campus was defined as non-diverse. Both diverse and non-diverse campuses provided the backdrop for authentic discourse and the continued examination of current secondary school leadership practice.

Review of the Literature

The Transformational School Leader

Secondary public schools in the twenty-first century are faced with the challenge and opportunity to educate a more diverse student population. Current literature (Shields, 2013; Shields & Sayani, 2005) suggests that educational leaders must embrace this cultural and linguistic diversity as a valuable educational resource rather than as a detrimental complication. Cooper (2009) further asserts educational leaders must strive to become cultural change agents that equip themselves with current knowledge, support, strategies, and valor to make curriculum, instruction, student engagement, and family partnerships culturally responsive.

According to Green (2010), transformational leaders lead with knowledge of individuals inside and outside of the schoolhouse. They have a vision for the future of the school organization, can effectively communicate that vision to followers, and are able to convey the importance of its attainment. In addition, transformational leaders are able to inspire followers to deeply commit to the school vision and work in an interdependent manner toward its attainment.

African American and Hispanic Student Achievement Gaps

The practice of transformational leadership with fidelity and conviction in secondary schools is vital to closing educational achievement gaps. The National Center for Educational Statistics (NCES, 2011) longitudinal test data from 1992 to 2009 reveals that African American and Hispanic students' achievement scores in math and reading continue to remain significantly lower than White secondary students ranging from 8th grade to 12th grade. The achievement gap of African American to White students in 1992 for 8th graders was -30 in reading and -33 in math scaled achievement scores; the achievement gap of African American to White students in 2009 for 8th graders was -26 in reading and -32 in math scaled achievement scores (NCES, 2011).

The data on Hispanic student populations in secondary schools in the United States present similar statistics in regard to the achievement gap of Hispanic to White students. In 1992, NCES (2011) data for 8th grade students documented achievement gaps of -26 in reading and -24 in math scaled achievement scores. More than a decade later, the achievement gap of Hispanic to White students in 2009 for 8th graders was still -24 in reading and -26 in math for scaled achievement scores.

Demographic shifts, stagnant national achievement gaps, and divergent achievement scores for secondary schools are prompting educational leaders to lead schools differently. Consequently, Green (2010) states if transformational leadership is to be effective, school leaders must create a trust-based culture wherein teachers are satisfied to the point that they collaborate with the school leader and assume leadership roles and responsibilities for enhanced student achievement and growth.

Theoretical Framework

This study was guided by transformational leadership theory. In a transformational leadership model, the role of the secondary school principal is to create a school climate and culture that continues to address the changing needs of a campus. Therefore, this shared role of leadership, which includes teachers and principals in the practice of transformational leadership, redefines the traditional role of leadership in secondary schools.

Secondary principals must be comfortable and confident in delegating power to other educational experts within the school community to carry out the leadership behavior or activity necessary to enhance teaching and learning (Eaker, 2008; Green, 2010; Muhammad, 2009; Spillane, 2006).

<h1 align="center">Methodology</h1>

This study includes the administration of the Leadership Behavior Inventory (LBI) Questionnaire to secondary teachers, assistant principals and principals to examine characteristics of secondary school principals and educators as transformational leaders.

The study was guided by an explanatory sequential mixed methods design (Creswell, 2006). In the first phase of this study, participants were given the LBI quantitative questionnaire. The second phase of the research design, interviewing selected participants, was executed sequentially after quantitative data collection was gathered and analyzed. Participants for the second phase were purposefully selected from the survey participant's frequency scores. The rationale for this mixed method approach to secondary principal leadership was to have the quantitative data facilitate qualitative findings.

<h1 align="center">Findings from the Study</h1>

Quantitative Phase

The LBI data collected from secondary principals served as a self-report and reflection of their practice based on the 13 core competencies. Secondary teachers from various campuses were also given the LBI, and in turn, evaluated their own principal's transformational leadership practices according to the same 13 core competencies. After conducting a T-test, the questionnaires revealed a significant difference between the $t(104)=2.156$, $p=.03$. These findings indicated a significant congruence and disparity between teacher's perception of leadership and the principal's self report on their own transformational leadership practice.

The total number of teacher and principal participants included in the study were N=106. Forty-three were male, 60 were female, and 3 were recorded as unknown. The educational positions for participants consisted of 45 principals and 61 teachers.

Table 1
Principal and teacher demographics of participants

Gender	N	Percent
Male	*43*	40.6
Female	*60*	56.6
Unknown	*3*	2.8
Principal	*45*	42.5
Teacher	*61*	57.5
Total	*106*	100

Table 2 displays both principal and teacher mean scores of transformational leadership practice from the LBI. The core competency with the strongest congruency between principal and teacher data was Reflection. Principals also reported that promoting the core competency of Diversity was their second highest campus priority. Principal data further revealed Curriculum and Instruction to be the least likely core competency they practiced. The core competency of Visionary Leadership was the second highest characteristic their principals practiced. Secondary teacher data revealed Professional Development as the least likely core competency practiced by their principals.

Table 2

Principals and teachers frequency scores for from Highest to Lowest

Core Competency	*M*(SD) for Principals	Core Competency	*M*(SD) for Teachers
Reflection	3.4 (.44)	Reflection	3.57(.57)
Diversity	3.27 (.46)	Visionary Leadership	3.49 (.67)
Visionary Leadership	3.21 (.42)	Inquiry	3.43 (.54)
Learning Community	3.17 (.50)	Learning Community	3.43 (.60)
Professionalism	3.17 (.63)	Diversity	3.37 (.68)
Prof. Dev.	3.16 (.51)	Org. Mgt	3.34 (.70)
Assessment	3.13 (.59)	Professionalism	3.34 (.76)
Org. Mgt	3.10 (.50)	Curr. & Instr	3.33 (.75)
Inquiry	3.08 (.68)	Unity of Purpose	3.33 (.68)
Unity of Purpose	3.02 (.64)	Assessment	3.30 (.65)
Collaboration	3.01 (.62)	Collaboration	3.28 (.74)
Instr. Leadership	2.99 (.74)	Instr. Leadership	3.22 (.72)
Curr. & Instr.	2.94 (.65)	Prof. Dev.	3.21 (.74)

Qualitative Phase

Qualitative data from 8 participants-- 4 teachers (2 from diverse and 2 from non-diverse) and 4 principals (2 from diverse and 2 from non-diverse)-- was collected to expound core beliefs, perceptions, perspectives and practices on their secondary school context, as teachers and leaders.

Table 4 displays the demographic data of the eight participants' who contributed to the interviews. Geographically, participants covered a large portion of the state of Texas and were from various diverse and non-diverse school districts in the state from both rural and urban areas.

Table 4

Demographics of participants from interview phase

Participant	Position	Gender	Years of experience	Middle or High School	Diverse or Non-Diverse campus
Mr. Victor	Principal	Male	11+	High School	Diverse
Mr. Schultz	Principal	Male	6-10	High School	Diverse
Ms. Wall	Teacher	Female	1-5	High School	Diverse
Ms. Smith	Teacher	Female	11+	High School	Diverse
Mr. Potts	Principal	Male	6-10	Middle School	Non-Diverse
Mr. Griffin	Principal	Male	11+	Middle School	Non-Diverse
Ms. West	Teacher	Female	6-10	High School	Non-Diverse
Mr. Jordan	Teacher	Male	11+	High School	Non-Diverse

Findings of Secondary School Leadership Practice

Through interpretation and analysis of qualitative data, five themes emerged to continue filling in the gaps of knowledge among transformational leadership practice of secondary school leaders: 1) Culture of secondary schools; 2) Factors influencing leadership styles; 3) Perceptions of Diverse and Non-Diverse school leadership; 4) School wide interventions; and 5) Recommendations for leading twenty-first secondary schools. The amalgamation of thick, rich descriptive data from secondary principals and teachers from both diverse and non-diverse secondary campuses provided multicontextual experiences and realities of transformational leadership practice. This is a paradigm shift, one of opportunity and development for twenty-first century secondary schools to continue improving culture and through school wide interventions.

Diversity & Staff Development—The LBI data disclosed the need for educators to increase awareness and understand student engagement, especially with diverse students through professional learning and staff development. Secondary leaders must create and promote a school culture that embraces diversity as an opportunity for personal and professional growth rather than the deficit--a constant challenge. This becomes imperative for the successful implementation and practice of culturally relevant embedded instructional strategies for student engagement.

*Unchanged Roles and Practice*s— The belief that secondary principals can lead schools alone the same way they did 10 years ago is a leadership fallacy. The demographics of secondary schools have changed nationally, but the practices of many teachers and leaders have not. This was a consensus across all eight participants. Their voices cemented the belief that

promoting a learning environment that embraces cultural diversity must be a vision of all educators. It must be a conscious and all-encompassing effort.

Moving Beyond Compliance—At non-diverse campuses, principals and teachers found themselves struggling to adjust and adapt to the changing demographics of their students. As a result, many instructional programs and initiatives implemented for school improvement were met with minimal compliance and apathy. Secondary principals at diverse schools however, wear multiple "hats" and play multiple roles in their schools and communities. Principals in these campuses are compelled to incorporate and execute leadership characteristics and practices derived from transformational leadership theory to move beyond compliance in closing the achievement gaps for all students.

Implications for Secondary School Leadership

Secondary public schools in the twenty-first century continue to face increased challenges in accountability, standardized testing, and ensuring all students perform at a national standard. Educational leadership must progress being inclusive and harness the whole educational community to increase student, teacher and school leadership performance. Secondary public schools are faced with changing demographics of student populations, which requires cultural sensitivity to a more diversified school population in terms of ethnicity, culture, and language. Leadership and teaching practices must transcend from a practice of isolation to a more collaborative practice with growth and rubric evidence oriented feedback in the educational process. The intertwining and combination of data in this study provided deeper analysis in creating the findings, which emerged from the quantitative and qualitative data sets of this study:

> 1). Twenty- first century secondary school leaders must have a holistic and inclusive understanding, promoting genuine relationship with the students they are serving.
> 2). Twenty- first century secondary school leaders must guide the school community to resist isolation and transform school culture into a collaborative one that strives to share effective practices.
> 3). Twenty-first century secondary school leaders must emphasize, equip, and train *all* secondary teachers in literacy and numeracy best practices. Literacy and numeracy will close the English and math educational gap for historically struggling African American and Hispanic students.

Conclusion

Carolyn Shields (2013) advocates for equitable change in schools by urging educational leaders to effect deep and equitable change, deconstruct and reconstruct knowledge frameworks that perpetuate inequity and injustice and focus on democracy, equity and justice. Several conclusions can be drawn from this mixed method study that deserve consideration with respect to secondary leadership and teaching practices within diverse school settings. Collaborative learning and work is a key component to student success and teacher improvement. Isolation results in surface teaching and status quo leadership. Outdated roles of secondary principals need change; the current result is an existing and widening achievement gap for both educators and students. Educators in the building must gain a continuous understanding of the diverse populations they are serving, if they are to have a grasp of culture and student knowledge, which will impact their education. To truly become the transformational change agents needed today,

secondary principals and teachers alike must welcome and embrace the opportunities that come with diversity in secondary schools.

Spillane and Diamond (2001) state that a transformational perspective will directly impact the school community in the way school leaders approach daily tasks, challenges, and educational goals/objectives. This requires a shared responsibility of all the stakeholders involved. The traditional paradigm of a school leader/principal being the sole decision maker is replaced with a collaborative and distributive leader who promotes a shared involvement both directly and indirectly with all stakeholders

Finally, the authors agree with a 45 year old argument by Miriam Schleisch (1968), where she stresses the importance of secondary teachers having the moral and ethical obligation to provide literacy instruction across all content areas which will enable them to identify, support, correct and fill the gap and voids in *all* students reading/literacy deficiencies. We must move current in-service secondary and preservice teachers beyond being a content oriented teacher. To be effective, secondary teachers in today's diverse schools must skillfully connect content, pedagogy and culture (Almager, 2012) to improve student achievement through their teaching performance. Ultimately, this shift will result in all secondary students developing higher levels skills which commensurate with their abilities that will directly enhance learning for the rest of their lives.

About the Authors

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