Student Teachers and Alternate Route Teachers' Sense of Efficacy and Views of Teacher Preparation

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This study compared undergraduate and graduate student teachers' and alternate route teachers' sense of efficacy and views of their teacher preparation programs. A one-way analysis of variance indicated that student teachers in the undergraduate program had higher teacher efficacy than the other two groups of teachers. Alternate route teachers and graduates student teachers reported similar levels of teacher efficacy. Teachers across all programs valued coursework in instructional methods and classroom management. The undergraduates and graduates also noted the importance of their fieldwork experiences, whereas alternate route teachers highly valued the camaraderie they established with their cohort members.

Substantial research indicates the impact of teacher efficacy, the belief that one's teaching affects student learning (Raudenbush, Rowan, & Cheong, 1992), on teacher behavior and teacher quality. Differences in teacher preparation programs produce different levels of teacher efficacy (Raudenbush et al.). The quality of teacher preparation programs is vitally important, because its impact on teacher efficacy and teacher quality is long lasting. In addition, research by Darling-Hammond, Chung, and Frelow (2002) demonstrates that sense of preparedness is the strongest predictor of teaching efficacy. Therefore, this study compares levels of teacher efficacy across three different teacher preparation programs. In addition, this study compares group (undergraduate, graduate, alternate route) differences in beginning teachers' perceptions of the positive and negative aspects of their preparation programs.

Schools of education at colleges and universities across the United States are being required to reevaluate their current programs in keeping with the outcome of the *No Child Left Behind Act*. The U.S. Department of Education (2002) states that content knowledge and verbal skills of teachers are the best predictors of teacher quality and student achievement. The report also states that pedagogical knowledge is not necessarily linked to quality teaching, suggesting that schools of education need to modify their current methods of educating prospective teachers. Finally, the report infers that uncompensated, lengthy student teaching experiences are unnecessary for quality teaching, which contradicts recent findings (Darling-Hammond, Chung, &

Frelow, 2002) that teachers who feel best prepared typically had lengthy student teaching experiences, along with a practicum interwoven with education coursework.

Teacher Preparation and Teacher Quality

Whereas the U.S. Department of Education (2002) states that there is no evidence that school of education coursework leads to teacher quality, sufficient research highlights the importance of teacher preparation programs, thereby challenging the U.S. Department of Education's position. Furthermore, teachers' perceptions of the quality of their preparation are related to their sense of efficacy (Raudenbush et al., 1992). Other research indicates that education coursework is related to teacher efficacy (Lin, Gorrell, & Taylor, 2002), and that methods courses, more so than student teaching, increase teacher efficacy (Morrell & Carroll, 2002).

A recent report by the U.S. Department of Education (2002) stated that alternate route programs are just as effective as traditional university-based programs for producing quality teachers. In addition, other research found that teachers who went through a traditional program failed to recognize the application of theory-based coursework on classroom practice (Whitney, Golez, Nagel, & Nieto, 2002). Extensive research, however, has shown that alternate route teachers felt less well prepared than teachers who completed traditional university-based preparation programs (Darling-Hammond et al., 2002; Luczak, 2003). Darling-Hammond et al. noted that teachers who participated in university-based teacher preparation programs rated several aspects as highly valuable components of their preparation programs: Knowledge of human development, child-centered education, and a full year of student teaching (Darling-Hammond et al.).

Darling-Hammond et al. (2002) found that new teachers who entered teaching through alternate route programs had lower levels of teacher efficacy than beginning teachers who entered through university-based programs. Another recent study showed that the areas of concern were nearly identical among first-year alternate route and university-prepared teachers (Wayman, Foster, Mantle-Bromely, & Wilson, 2003). However, the two populations of teachers reported different levels of efficacy in dealing with these same issues. For example, teachers who entered teaching via the alternate route indicated substantially higher levels of concern regarding their capacity to effectively deliver instruction as well as manage the classroom. In particular, alternate route teachers were four times more likely to feel concerned about their abilities to plan lessons than were teachers who entered teaching through a traditional university-based program.

Teacher Efficacy: Impact on Teacher Behavior

Teacher efficacy, which develops early in a teacher's career and is relatively stable (Darling-Hammond et al., 2002; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), is an important attribute to foster, because it can positively or negatively influence teacher behavior. In particular, teacher efficacy is related to several factors: (1) The teachers' overall attitude toward teaching; (2) teachers' expectations of students; (3) willingness to persist with students; (4) the ability to try various instructional techniques; and (5) student achievement (Gibson & Dembo, 1984; Soodak & Podell, 1997; Tschannen-Moran et al.). More specifically, teachers with high teacher efficacy are more likely than low efficacy teachers to employ creative teaching strategies, persist with students, produce high efficacy learners, and are less likely to criticize students (Darling-Hammond et al.).

In light of the aforementioned findings, teacher preparation programs need to incorporate a philosophy that fosters teacher efficacy. In an extensive study, Darling-Hammond et al. (2002) demonstrated that teachers who completed an approved New York State teacher education program felt better prepared than teachers who took alternate pathways into teaching on several

factors: (1) Designing curriculum and instruction; (2) teaching subject matter content; (3) using instructional strategies; and (4) understanding the needs of learners. Teachers who took alternate pathways felt better prepared in only one area – using technology as a means of communicating with others (Darling-Hammond et al.). This contradicts the U.S. Department of Education's (2002) statement that alternate routes produce teachers who are just as qualified, or even better qualified, than teachers who received training in traditional teacher education programs.

As an effect of the U.S. Department of Education's focus on, and definition of, teacher quality, schools of education must now investigate the impact of their programs on teacher quality. An effective way to determine if teacher preparation programs influence teacher quality is to investigate how types of programs, along with particular elements within those programs, affect teacher efficacy. To understand whether teacher preparation programs impact quality teaching, this study addressed the following questions:

1. Do beginning alternate route teachers, undergraduate student teachers, and graduate student teachers have different levels of teacher efficacy?
2. Do student teachers in a traditional program in New Jersey perceive their training differently than beginning teachers going through an alternate route training program in New Jersey?
3. Which aspects of their teacher preparation programs do they value?
4. Which aspects of their teacher preparation programs do they perceive need to be altered?

METHOD

Participants

The participants for this study consisted of 100 teacher candidates (19 graduates, 39 undergraduates, 42 alternate route teachers) in central New Jersey. All members of one alternate route regional training center were purposely chosen to participate, and the study's alternate route participants consist of individuals who were present during one class period during which data were collected. All undergraduates and graduates who were enrolled in student teaching were also purposely selected to participate. The university undergraduate and graduate participants consist of those individuals who were present during one group meeting with their supervisors.

The graduates and undergraduates all attended the same university and were approximately three months into their full-time student teaching experience. The duration of their student teaching was one semester. Candidates enrolled in the university program are required to take the Praxis exam prior to the completion of their student teaching experience. The university is a private institution, with a predominantly Caucasian, upper middle class population. The undergraduate sample consisted of 37 females and two males. By the time undergraduates enter their student teaching, they have several field-based experiences, including 60 field hours of junior practicum. For the graduate sample, all 19 respondents (14 females, 5 males) were regular education majors (no special ed majors). In contrast to the undergraduate program in this study, graduates have limited field requirements throughout their preparation program, with no practicum requirement prior to student teaching.

The alternate route teachers (27 females, 15 males) were approximately three months into their first full-time teaching position. Similar to the graduate sample, all 42 respondents were regular education majors. In New Jersey, alternate route candidates must hold a Bachelor's degree, and they must pass the Praxis exam prior to enrolling in the alternate route program. Candidates are then hired by school districts to begin teaching (usually) in the fall. Upon being hired, candidates are then assigned to a Regional Training Center to receive 200 hours of formal instruction. Instruction in the alternate route program in the current study was delivered at a local middle school, and classes met for four-hour sessions twice a week. The program

ran from October through May, at which time the candidates were issued a standard teaching license.

Instruments

For this study, we used the Personal Teaching Efficacy subscale of the Teacher Efficacy Scale (Gibson & Dembo, 1984). The original Teacher Efficacy Scale consists of two components: general teaching efficacy and personal teaching efficacy. Although researchers have questioned the wording of this scale (Woolfolk & Hoy, 1990; Guskey & Passaro, 1994), an extensive study by Deemer and Minke (1999) found that the items that comprise the Personal Teaching Efficacy subscale appear to be valid indicators of teacher efficacy. In addition, Deemer and Minke questioned the validity of the general teaching efficacy subscale, and subsequent factor analysis by Woolfolk and Hoy (1990) revealed that only 10 questions on the original Teacher Efficacy Scale were valid items that measured personal efficacy. Thus, the current study used only scores on the Personal Teaching Efficacy subscale. Gibson and Dembo found that nine items comprised the Personal Teaching Efficacy subscale, with a Cronbach alpha internal consistency coefficient of .78. This study, therefore, used the original nine likert-type items from the Teacher Efficacy Scale to measure personal teaching efficacy (see Appendix A). Items are scored using a scale of 1 (strongly disagree) to 6 (strongly agree), with higher scores representing higher levels of personal teaching efficacy.

Participants were also asked to respond to two written open-ended survey questions: (1) Which components of your teacher education program have been valuable thus far? (2) What do you think should be altered in the teacher education program? Why?

Data Analysis

A mixed-method research design was employed. A one-way analysis of variance examined differences in teacher efficacy among beginning teachers in three different preparation programs (alternate route, undergraduate, and graduate). To address participants' perceptions of the positive and negative components of their preparation programs, a recursive analysis investigated underlying themes in the data (Nastasi, 1998). Undergraduate, graduate, and alternate route participants' responses were coded separately to make comparisons. The data were descriptively coded by two independent researchers. Once consensus was reached, the data were given to a third researcher for reliability purposes. The three coders agreed on the final set of categories/main themes with inter-coder reliability established at > .90. After the coding scheme was finalized, all responses were coded, and frequencies were established to represent the number of participants who mentioned each category. As stated by Ryan and Bernard (2000), responses to open-ended questions can be considered free lists, and interpretation involves the frequency that each category is mentioned, and the rank order implies the salience of each category/theme. Rank-ordered lists can then be compared for similarities.

Procedures

A researcher attended one of the alternate route classes at the end of November (almost three months into their preparation program and teaching). Prior to administering the Personal Teaching Efficacy Scale and the two open-ended survey questions, the researcher informed participants that participation was voluntary, anonymous and confidential. After obtaining informed consent, alternate route participants completed the instruments during the class period. The researcher placed all completed surveys in a sealed envelope. Undergraduate and graduate students completed the Personal Teaching Efficacy Scale and two open-ended survey questions during a meeting with their university supervisors, which occurred approximately three months into their full-time student teaching placement. Again, prior to administering the surveys, supervisors stated that participation was voluntary, anonymous and

confidential. Surveys were then completed during the group meeting and returned to the supervisors, who placed the completed surveys in a sealed envelope and subsequently returned the surveys to the researchers.

RESULTS

One of the goals of this study was to determine if participants in the three different programs had different levels of teacher efficacy. A one-way analysis of variance revealed significant differences in personal teacher efficacy among alternate route teachers, undergraduate and graduate student teachers ($F_{(2,97)} = 7.71$, $p < .01$). A Bonferroni contrast indicated that teacher candidates in the undergraduate program scored significantly higher than candidates in both the graduate program ($p < .01$) and the alternate route program ($p < .01$). In addition, there was no difference in scores between the candidates in the graduate program and the alternate route program (see Table 1).

Table 1

Descriptive Statistics on the Teacher Efficacy Scale

	Undergraduates (n = 39)	Graduates (n = 19)	Alternate Route (n = 42)
Mean	42.28	37.05	38.31
Standard Deviation	5.37	5.58	5.68
Range	28-51	26-47	27-52

Participants were also asked to respond to two open-ended questions to determine the differences in participants' perceptions of the quality of their preparation programs. Using a coding scheme created through recursive analysis, all responses were coded, and frequencies were established to represent the number of participants who mentioned each category. The coding of the open-ended questions was based on the number of respondents who mentioned a particular category. Frequency counts are noted for specific subcategories.

Qualitative Analysis: Valuable Components

In response to the question regarding the perceived valuable components of their programs, there were four general categories that emerged for the undergraduates: (1) Courses; (2) practical experience; (3) professors; and (4) administrative support. Three general categories emerged for the graduate sample: (1) Courses; (2) practical experience; and (3) professors. For the alternate route sample, the valuable components consisted of seven categories: (1) Classroom management techniques; (2) building camaraderis/sharing experiences with other alternate route teachers; (3) group problem-solving to deal with student misbehavior; (4) teaching techniques; (5) developing lesson plans; (6) instructors assisting in problem-solving of cases of student misbehavior; and (7) information on learning disabilities.

Undergraduates. The undergraduates perceived courses and course content as a very valuable component of their preparation program (n =34). In particular, coursework in classroom management, reading and literacy, and instructional methods were the most frequently mentioned categories to emerge (see Table 2). One participant's response exemplifies several responses regarding classroom management: "This [behavior management] was a great course to learn different ways to handle different types of behaviors which we come across in the classroom, and this course helped me implement different approaches." Another respondent stated, "Behavior management is a huge component in teaching, and I felt that I absorbed the most information from this course."

To further illustrate the positive perception of coursework in their program, one candidate stated, "Every single class has made my teaching experience great. Each class has taught me many different techniques and ideas. Each day I am able to relate what I have learned in my college classes to what is happening in my own classroom today."

Another candidate responded in a parallel fashion, "I really appreciate many of the classes. Many of them helped me prepare for my career. I am confident that I can write lesson plans, create inter-disciplinary units, and include literature in my classroom." Further evidence was supported by a student teacher who said, "The literacy classes which I have taken have been truly top-notch."

Besides coursework, undergraduates also strongly identified practical experiences (i.e., student teaching and field placements) as positive aspects of their program (n = 26). As noted by one participant, "Student teaching has really brought everything together and has given me an accurate assessment of what my duties as a teacher are." Some participants also stated that they valued professors and aspects related to administrative support (e.g., placement office, coordinating teachers, advisors, etc.).

Graduates. Similar to the undergraduate sample, the graduates also most frequently identified coursework preparation as a valuable component of their preparation program (n = 9). Furthermore, instructional methods were again perceived to be a very valuable aspect of their teacher training program. For example, one graduate stated, "I believe that certain methods classes that are taught by competent, reputable professors have been extremely beneficial. Participating in the activities that will be brought into the classroom is a positive aspect of such classes." In contrast to the undergraduate responses, however, graduates did not specifically mention classroom management or literacy coursework, but rather they noted the value of coursework in general (see Table 2). To illustrate this point, one candidate responded, "The theoretical foundation I have built from all of my courses has been very helpful."

In addition to coursework, graduates also identified practical experience and professors as valuable components of their teacher training program. One candidate emphasized the significance of fieldwork, stating, "Much knowledge can be obtained through taking classes, but the actual experience of teaching is most valuable."

Table 2

Valuable Components of Undergraduate and Graduate Teacher Preparation Programs

	Student Responses	
Valuable Components	Undergraduates (n = 39)	Graduates (n = 19)
Courses		
Classroom management	11	0
Reading and literacy	9	0
Methods	7	5
Lesson & unit plans	4	0
Curriculum & instruction	3	0
Courses in general (not specified)	0	4
Practical experience		
General, not specified	0	8
Student teaching	18	0
Field experience and placements	8	0
Professors	7	4
Administrative Support	4	0

Alternate Route. To examine alternate route participants' perceptions of their teacher preparation program, frequencies were again computed and represent the number of alternate route teachers who mentioned each specific coding category. The final coding scheme included seven components, and categories are listed in rank order, with the first category representing the most frequently mentioned component of the program deemed to be important (see Table 3).

The alternate route teachers most frequently responded that information on classroom management techniques (n = 21) was a valuable aspect of the formal instruction component of their alternate route program. As indicated by one alternate route teacher, "Learning how to implement a sound discipline program has been extremely helpful." Another candidate stated,

"Coming from 'industry,' I knew very little, if any, about how to conduct my class and how to write lesson plans. After two months of this class, I can do both without any problems."

The second most valuable aspect of their program was the camaraderie that alternate route teachers established with one another (n = 15). For example, one alternate route teacher said, "I believe that the time spent with other teachers gives it a 'boot camp' feel. This bond gets you through the classes." Another participant replied that the "most valuable for me has been the opportunity to talk and work with other alternate route teachers. We brainstorm, problem solve, troubleshoot, and commiserate whenever we get a chance." Therefore, the third most noted response pertained to group problem solving (with alternate route teachers) to deal with student misbehavior. This category was distinguished from the first two categories, because participants specifically noted that they learned various strategies from alternate route teachers in their training program. For example, one teacher said that "discussion of case by case scenarios with a group of teachers where both instructor and other teachers provide feedback and advice" has been the most valuable aspect of the program. Another participant highlighted the significance of the camaraderie, stating "The diversity of my classmates allows a greater chance for me to be exposed to the various disciplinary problems, learning styles and teaching techniques, and strategies to ensure a more well-rounded curriculum has been presented." As seen in the prior response, respondents valued information on teaching techniques, lesson planning, and learning disabilities, as well as assistance from instructors on how to deal with cases of student misbehavior.

Table 3

Perceptions of Alternate Route Preparation Program

Valuable Components	n
Classroom management techniques	21
Building camaraderie/sharing experiences With other alternate route teachers	15
Group problem-solving to deal with student misbehavior	11
Teaching techniques	10
Developing lesson plans	9
Instructors assisting in problem-solving of cases of student misbehavior	6
Learning disabilities	5
Recommended Changes	
Administrative support	
Excessive time demands	29
Eliminate outside class work	9
Separate teachers assigned to grade levels they teach	5
Spend more time discussing issues pertaining to their own classes	5
Course Content	
Need more time on classroom management	6

Qualitative Analysis: Recommended Modifications

Despite undergraduate and graduate students' perceptions of the value of their coursework within their preparation program, they also most frequently identified courses and course content as areas in need of improvement. They also recommended changes in their practical experience, administration and support, and professors. For the alternate route participants, the overwhelming majority of responses pertained to issues of administration and support.

Undergraduates. Student teachers most frequently responded that changes were needed in their university courses (n = 27). Although they acknowledged the value of their coursework in their university preparation program, they also detected a need for more course content in classroom/ behavior management (n=7), and more special education content for regular education majors (n=6). As noted by one undergraduate, "I feel I did not have enough education classes. I feel Special Education majors gain more knowledge than others, knowledge that is needed for all

teachers. I feel all education majors should take an extra class or two based on special needs students, classroom management [instead of] classes just based on subjects. A few candidates also perceived that there was too much repetition of courses (n=4) and that some courses were a waste of time (n=4). For example, one candidate recommended "the instruction of more practical skills such as classroom management, setting up a grade book, etc. instead of repetitive theory."

In addition to their recommendations to add course content in the areas noted above, undergraduates also perceived problems with field placements (n = 14). Specifically, students recommended more placements prior to student teaching and longer student teaching experiences. An example of their concerns is reflected in one candidate's response, "I think that all student teachers should student teach a full year. I am student teaching this spring, and I have had no way of looking at how teachers introduce their students to a new year and develop schedules and patterns to follow. I know we learned this somewhat in class, but nothing helps me to learn more than experience."

Graduates. Similar to the undergraduate responses, the graduates also gave recommendations regarding courses and course content (n = 16): (1) More methods courses (n=4); (2) more classroom/behavior management (n=3); (3) more lesson/unit plan writing (n=3); and (4) omit the research class (n=2). In addition, candidates indicated other problems with courses, including the need for less theory (n=2), and a repetition of courses (n=2). Under practical experience (mentioned 10 times), the significant issue was the need for more field placements prior to student teaching. Administration and support issues were only mentioned three times and reflected issues with the availability of courses. Finally, professors were mentioned four times as an area of concern (see Table 4).

Table 4

Suggested Modifications of Undergraduate and Graduate Teacher Education Program

	Student Responses	
Suggested Modifications	Undergraduates (n = 39)	Graduates (n = 19)
Courses		
More classroom management	7	3
More methods	1	4
More lesson/unit plan writing	0	3
Repetition in courses (too much)	9	2
Less theory	0	2
More special ed in regular ed	6	0
Some a waste of time	4	0
Omit research class	0	2
Practical experience		
More field placements before student teaching	8	0
More/longer Student Teaching	6	0
Non-specific	0	10
Administrative Support		
Field placement issues	7	0
Seminar issues	5	0
Non-specific	1	0
Issues regarding availability of courses	0	3
Professors		
Need better communication between faculty and staff	2	0
Need better faculty	1	0
Non-specific	0	4

Alternate Route. In contrast to the undergraduates and graduates in this study, the alternate route teachers' primary concerns pertained to administration and support. For example, 29 teachers mentioned the excessive time demands of the program, and nine teachers suggested that outside class work be eliminated. Another administrative issue was the need to separate teachers according to the grade level they teach (e.g., elementary vs. secondary). Five candidates recommended that more class time should be devoted to discussing issues pertaining to their own classrooms. The only additional category that emerged was course content (mentioned by six respondents); teachers mentioned the need for more information on classroom management, as well as more application of the information. (see Table 3)

These concerns are reflected in some of the responses noted below:

"High school and Kindergarten teachers have different needs that must be met. The process in which teachers go to which location could also be refined, especially since there is an alternate route class in my town, yet I drive 40 miles each way to come here."

Taking evening alternate route classes "two times a week [four hours each] is too taxing. I would rather go once a week with longer hours."

Another suggestion was to "have a specific amount of time or one day to talk about things happening in our classrooms and ways to deal with them."

"I believe that expecting us to teach full time and then come to school is not the way to go. I think we should have to attend the session in the summer prior to employment, during winter break and during the summer."

"One suggestion might be to keep homework to a minimum, because we are overwhelmed with work and paperwork already."

DISCUSSION

The results of this study illustrate that student teachers in an undergraduate teacher preparation program exhibited higher levels of personal teaching efficacy than student teachers in a graduate program and beginning teachers in an alternate route preparation program. In contrast to other research, this study also found that beginning teachers in the alternate route program reported levels of personal teacher efficacy similar to student teachers from a graduate university-based preparation program.

One possible explanation for the undergraduates' higher level of teacher efficacy may be attributed to differences across the three preparation programs. The undergraduate student teachers in the current study, who possessed the highest level of teacher efficacy, had varied and distributed field experiences and coursework over a three year period. In contrast, the graduate program in the current study consisted of 30 credits of coursework, with very little field experience (some graduates had zero) prior to student teaching. Both undergraduate and graduate student teachers noted the value of their methods courses and practical experience, components that have been found to be related to teacher efficacy (Darling-Hammond et al., 2002; Knobloch & Whittington, 2002). When comparing undergraduates and graduates regarding the aspects they perceived that needed to be changed, fewer undergraduates mentioned the need for more student teaching or methods courses. These results suggest that the undergraduates perceived their field placements and methods coursework more favorably and thus might have been better prepared for student teaching.

All three groups of teachers identified classroom management as an important element of teacher training. Undergraduate student teachers as well as alternate route teachers in the current study identified classroom management as a valuable component of their preparation programs. In addition, a large percentage of undergraduate and graduate student teachers recognized the need for more training in classroom management, further underscoring candidates' perceptions of the importance of training in this area. These results lend further evidence that regardless of the types of

preparation they receive, novice teachers consistently identify classroom management as one of their greatest problematic areas (Wayman, Foster, Mantle-Bromley, & Wilson, 2003).

Besides the need for teachers to understand components of classroom management, they also need skills at navigating the school organization, including rules, procedures, and routines. Friedman and Kass (2002) note the importance for teacher preparation programs to provide teacher candidates with skills that will foster adequate success in meeting the demands of the organization. Undergraduates in the current study had several opportunities to learn about school organizations prior to their student teaching experience, whereas graduates and alternate route teachers did not experience gradual induction into the organizational structure.

The graduate students in this study received approximately one year of coursework, followed by one semester of student teaching, with rare opportunities to enter the classroom any time prior to student teaching. This may explain why the alternate route teachers felt just as capable of impacting student learning. In a sense, graduate students' induction into the teaching profession is primarily theoretical, until the day they are given the opportunity to teach on their own. Prior to the point of student teaching, the graduate preservice teachers might not realize the daily challenges of teaching (Hebert, Lee, & Williamson, 1998). Again, this could explain why the undergraduates had significantly higher levels of teacher efficacy.

One similarity between the undergraduate and alternate route programs is the opportunity to link theory to practice. The ability to use actual classroom experiences to reflect on course content, and the active discourse with their peers may compensate somewhat for the lack of training alternate route teachers receive prior to entering the classroom. Therefore, undergraduates have a clear advantage in that they enter student teaching with both a strong background in pedagogy and opportunities to apply this knowledge in their field experiences. This may account for undergraduates' higher level of teacher efficacy.

Comparable to other research (Cleveland, 2003), alternate route teachers in the current study voice concerns about the ability to deal with the stress and time commitments of their certification program. Although participant feedback appears to demonstrate that our alternative certification program is valued by beginning alternate route teachers, candidates already feel overwhelmed with the reality of teaching; taking additional courses during their first teaching position seems to pose additional stress. The goal, however, is to keep the teachers in the teaching field, and one factor that ostensibly influences retention is the camaraderie among alternate route cohort members.

This study provides useful information to providers of teacher preparation programs. The data reflect the need for gradual induction into the field of teaching. Students in the undergraduate program, who had more opportunities for classroom observations and field experience in their preparation program, had the highest sense of personal teaching efficacy. This supports the findings that lengthy student teaching is an important component of quality programs (Darling-Hammond et al., 2002; Whitney et al., 2002; Woolfolk-Hoy, 2000). In addition, undergraduates usually make a commitment to teaching early in their educational program, most often by their sophomore year of study. Thus, these individuals acquire gradual knowledge about teaching and have opportunities to reflect on current practices (while also occasionally observing the practices in action).

The results of this study also illustrate the need for mentoring relationships for beginning teachers. During the first year in the alternate route program, beginning teachers collaborate with one another and engage in collective problem solving to deal with authentic classroom experiences. These types of collaborative induction activities have been shown to promote teacher retention (Smith & Ingersoll, 2004). Teachers in the current study highly value this didactic experience, which is similar to the current view of mentoring as a reciprocal learning experience (Beyene, Anglin,

Sanchez, & Ballou, 2002). More specifically, Felmen-Nemser (2001) uses the term "educative mentoring" to describe the relationship as one in which mentors "…interact with novices in ways that foster an inquiring stance. They cultivate skills and habits that enable novices to learn in and from their practice" (p. 18).

Limitations and Suggestions for Further Study

Three confounding variables need to be considered in the interpretation of these data- the sample size, demographics of each sampling group, and the timing of data collection. Groups were not randomly selected, and the graduate group was very small, thus limiting the generalizability of the results. Furthermore, the undergraduate group contained substantially more females (95%) in comparison to the graduate and alternate route groups (74% and 64% respectively). Although very little research has investigated the impact of gender on teaching efficacy, Brandon (2000) found that males had higher levels of teaching efficacy prior to teaching practice, yet following teaching practice, gender differences were not present. Brandon's study failed to indicate the length of practice teaching and was comprised of prospective primary teachers only. However, Brandon's findings indicate the need for further investigation of the influence of both gender and the development of teaching efficacy.

Very little research has investigated longitudinal changes in teaching efficacy. A recent study by Woolfolk-Hoy and Burke-Spero (2005), however, illustrates the need for more research in this area. They found that teaching efficacy increased during student teaching but declined with actual experience as first year teachers. Since the alternate route teachers in the current study were teaching in a permanent job setting, whereas the other two groups were near the end of their student teaching, results should be interpreted with caution. More longitudinal research is needed to determine if alternate route teachers and traditionally-prepared teachers exhibit similar patterns of change in teaching efficacy. We also need to ensure that initial data on teaching efficacy is collected prior to teaching experience to enable us to compare changes across groups.

Although this study provides information for teacher preparation programs, further research is needed. In particular, research should investigate the long term benefits of programs that emphasize theory to practice throughout their programs as well as how camaraderie is developed. In addition, research should examine the impact of camaraderie on teacher retention.

CONCLUSION

In conclusion, this study implies that student teachers and alternate route teachers greatly value the coursework in lesson planning and instructional methods. Student teachers also highly value the field experience components of their preparation programs. From the data in this study, we recognize the need for a gradual induction process into the teaching process, whereby candidates can see theory-in-practice, while also having time to reflect on what it takes to be an effective teacher.

The alternate route teachers attributed great value to the camaraderie they established with peers, as well as the mutual exchange of ideas and information with their peers. These individuals acquired expertise, guidance, and friendship from their fellow alternate route colleagues. This highlights the necessity of providing mentors and peer support for beginning teachers and may help to explain why only one alternate route teacher withdrew from the program during the first year. Perhaps it is time to abandon the practice of comparing traditional preparation and alternate route programs (Cochran-Smith, 2005). Instead, we need to focus on examining which aspects of teacher training programs are most effective. By listening to the voices of teacher candidates across the three different preparation programs in the current study, we can begin to identify aspects of their preparation programs that contribute to their success in the classroom.

APPENDIX A
Items from the Teacher Efficacy Scale

1. If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.
2. When the grades of my students improve, it is usually because I found more effective teaching approaches.
3. When I really try, I can get through to most difficult students.
4. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next session.
5. When a student does better than usual, many times it is because I exerted a little extra effort.
6. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.
7. If one of my students could not do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.
8. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.
9. When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student (Gibson & Dembo, 1984).

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