

Program Completion and Retention of Career Changers Pursuing Alternative Teacher Certification: Who Drops, Who Commits, and Why?

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Abstract

Alternative certification programs provide a potential solution for teacher shortages in high-needs settings and content areas. These programs often attract career changers, who bring a passion for their content area and a desire to make it relevant to students. Research suggests that support during the first year is critical, but little is known about why some career changers do not complete their program or complete but do not teach. In this study, we explored program and teacher attrition using a variety of factors collected from 58 participants across six cohorts of an alternative certification program focused on mathematics and science teaching in urban middle schools. In addition, we analyzed qualitative data from eight case studies. While race was related to program completion, personal factors drove participants' choices to enter and stay in teaching, such as marital status, number of children, advanced degree, and age. Implications for supporting career changers are discussed.

Keywords: mathematics, science, urban, career changers, middle grades

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There is a critical need to address the wide disparities in opportunity and outcome in US schools, often termed the *demographic imperative* (Banks, et al., 2007; Zeichner, 2003). In particular, shortages of fully qualified teachers exist in high-needs schools such as “low-achieving schools, schools with high numbers of students of color, and schools with high numbers of students with free and reduced-price lunch” (Zeichner, 2003, p. 495). Research has also highlighted shortages of certified teachers in mathematics and science (Zeichner, 2003). Alternative certification programs offer a solution to teacher shortages because they allow individuals to earn teaching qualifications in short periods of time, frequently with financial support through grants or scholarships. Although alternative certification programs vary in design, they generally accelerate the teacher preparation process to produce qualified teachers, often with greater life and work experiences, who are committed to working in hard-to-staff-schools and subjects (Feistritzer, 2005; Ng & Peter, 2010, p. 125). However, this goal only comes to fruition if alternative certification programs are able to recruit highly qualified potential teachers, retain them through the program, and support them upon entering the teaching profession.

While designed to address this demographic imperative, alternative certification programs have high dropout rates (Wilson, Floden, & Ferrini-Mundy, 2001), impeding their goal to increase highly-qualified teacher candidates. Yet, little is known about attrition in relation to alternative certification programs. Given the potential of alternative certification programs to fill teaching positions in high-needs schools and subject areas, there is a need to understand who drops out of these programs, who commits to teaching, and why.

The purpose of this study is to explore career decisions of participants in an alternative certification program designed to transition prospective teachers from prior careers in mathematics and science to teach in high-needs urban middle schools. Specifically, we addressed the following three research questions. What factors influence the decisions of career changers to complete or drop out of an alternative certification program focused on teaching mathematics or science in urban middle grades settings? What factors influence the decision of career changers not to choose a teaching career after completing their certification program? What factors influence career changers to commit to teaching mathematics or science in urban middle grades settings? Quantitative methods were used to determine whether admission screening factors, including undergraduate transcript GPA, holding an advanced degree, and Haberman Star Teacher Pre-Screener Evaluation scores (Haberman, 2008), were related to program or teaching attrition. In addition, we asked whether or not personal factors, including participants’ age, race, marital status, parents’ level of education, and number of children, influenced program or teaching attrition. Finally, qualitative case study data were used to identify any additional factors that influenced participants’ program or teaching attrition and to gain an insight into why factors emerged as significant for alternative certification program members.

Teacher Attrition

Research demonstrates that attrition and turnover are greater in high poverty schools (Allen, 2005; Guarino, Santibanez, & Daley, 2006; Smith & Ingersoll, 2004) and in urban schools (Lankford, Loeb, & Wyckoff, 2002), which are often less-desired settings (Ng, 2006). Attrition is also greater among middle and high school teachers (Allen, 2005). Middle schools are often less desired by prospective teachers because of apprehension about discipline and attitudinal

problems among adolescents (Carter & Carter, 2000). Some subjects are also especially challenging to staff. In particular, mathematics and science teachers are more likely to leave their jobs than teachers of other subjects (Allen, 2005; Ingersoll 2001). Furthermore, mathematics and science teachers in higher poverty schools are often under qualified and lacking a major or minor in their field (Allen, 2005, p. 9). Among alternatively certified teachers, mathematics and science teachers have an attrition rate of 20 percent per year (Suell & Piotrowski, 2007). Because skilled teachers are viewed as a key resource for increasing student outcomes, this research indicates a critical need for a pool of highly qualified, certified, mathematics and science teachers to address disparities in opportunities, resources, and outcomes among different student groups (Banks et al., 2007). Furthermore, this research suggests that gaining a better understanding of attrition of mathematics and science teachers in high-needs urban middle schools is critical and a focus on alternative certification programs is needed.

In addition to improving teacher quality, there is also a need to increase teacher diversity. Zeichner (2003) presented the cultural and ethnic disparity between students who attend public school in the United States and their teachers. The teacher workforce is predominantly White and female, and there is moderate evidence that White teachers have higher attrition rates than African American or Hispanic teachers, who are also more likely to teach in urban settings (Allen, 2005). There is evidence that alternative certification programs strive to attract a more diverse teacher population in terms of age and ethnicity (Wilson, et al., 2001). Therefore, understanding the factors that influence the attrition of alternative certification programs is important, especially as it relates to teacher diversity.

Research also reveals many additional factors that relate to attrition, such as salary, work conditions, support, and administrative and curricular requirements (Allen, 2005; Costigan, 2005; Greenlee & Brown, 2009; Ingersoll & Smith, 2003; Johnson & Birkeland, 2003). Salary plays a major role in teacher retention. Yet, there is also moderate evidence that working conditions can be more important than salary in terms of teacher retention and that working conditions, such as administrative support and teacher autonomy, increase teacher retention (Allen, 2005). In a study of alternatively certified secondary teachers working in small, urban schools, Carter and Keiler (2009) found relationships with students and collegial support to be critical for retention. Other studies on retention of alternatively-certified teachers found support, family, and psychic rewards such as giving back to society and impacting children's lives, contribute to a sense of purpose (Ng & Peter, 2010), making them important factors in career decisions of alternatively-certified teachers who entered the teaching field (Carter & Keiler, 2009; Jorissen, 2003; Ng & Peter, 2010). Ng and Peter (2010) found that the alternatively certified teachers in their study viewed teaching as a purposeful career change; however, they were equipped with a "contingency plan" for their careers if the transition to teaching was not successful (p. 135). Finally, young women are most likely to leave teaching; moderate evidence supports that this is due to pregnancy and childrearing (Allen, 2005).

Participants of alternative certification programs often choose to leave their previous careers because of a passion for teaching (Costigan, 2005), expending time and money to earn qualifications to teach. Therefore, individuals' decisions to not complete their alternative certification program or commit to teaching carry personal and financial consequences. The above factors offer a general explanation of teacher attrition which is applicable to alternatively

certified teachers, teachers in urban schools, teachers in middle schools, or teachers in mathematics or science. The current study looks at the previous contexts together and seeks to understand the extent to which they play a role specifically for mathematics and science career changers planning to teach in high poverty, urban middle schools.

Furthermore, little is known about individuals who choose not to complete their certification programs, or to complete their programs but not enter teaching. Ng and Peter (2010) analyzed a two-year, federally funded alternative licensure program for mathematics and science teachers to be placed in urban middle or high schools. Their program had high program attrition during the first year, with 5 out of 11 original cohort members completing the program. The researchers cited lack of early success and availability of other job prospects as reasons participants left. It is important to know more about how these and other factors play out in the career decisions of alternatively certified teachers in order to better support their choices to pursue an alternative route to teacher certification and to support their entrance and retention in high-needs schools.

Career Changers

Many career changers gravitate toward teaching due to the influence of others, such as a former teacher or parent (Morettini, 2014). Others, such as friends and family also serve as support, offering financial support or encouragement. Prior knowledge about teaching, such as experiences with teaching or personally knowing teachers, can make teaching more attainable for career changers (Castro & Bauml, 2009). Castro and Bauml (2009) found that many career changers make the shift to teaching when resources such as support, financial capital, and time are available. Research has also found that decisive events often serve to push career changers into teaching regardless of a prior desire to teach (Crow, Levine, & Nager, 1990). For example, Wilcox and Samaras (2009) found that the career changers in their study reported an event that led to their career change such as office reorganization, retirement, family events, or encouragement to obtain certification.

When career changers are ready for change, the availability of transition to teaching programs is important as obstacles can thwart the process (Castro & Bauml, 2009). The specifics of a transition to teaching program can influence career changers, making returning to school more feasible, such as reduced teaching loads, funding, and mentoring (Morettini, 2014). The location of the program can also be important as career changers are established geographically with ties to child-care facilities, support networks, and housing (Abell et al., 2006). Experiences with youth, such as having children or working with children, and informal teaching experiences, such as training roles, also influenced career changers to teach (Grier & Johnston, 2012; Morettini, 2014; Richardson & Watt, 2005).

Castro and Bauml (2009) found that their participants recognized the challenge associated with changing careers and noted internal strength as necessary for a career change. Their participants communicated that the commitment to change one's career takes internal determination and hardiness, essential for making a major life change. Feelings of a lack of fulfillment in a prior career, a desire for personally meaningful or more satisfying work, or a desire to obtain a career that makes a difference in others' lives inspires career changers to teach (Morettini, 2014; Richardson & Watt, 2005). Crow, Levine, and Nager (1990) labeled some of the career changers

in their study as homecomers, indicating that teaching was something they always wanted to do. Their change to teaching was initiated by dissatisfaction with their former careers and a need for more fulfilling work. Lee (2011) found that some career changers view teaching as a calling, in a humanistic sense. Grier and Johnson (2012) found in their study of STEM career changers that career changers in teaching call upon their identities in their previous careers and want to make their subject exciting and relevant to their students. Their participants also relied on their professionalism established in their previous careers. Furthermore, prior career experiences can influence career changers' teaching process in terms of their philosophy, ability to relate to others, choice of classroom materials and curriculum, and time management skills (Lee, 2011; Mayotte, 2003).

Given the prior professional experiences, resources, and personal drive of many career changers, we seek to understand why some are more likely than others to persevere – completing their programs, entering teaching, and committing to the profession. Within high-needs settings and content areas, it is especially important to know effective ways to support prospective teachers as they transition from prior careers into teaching.

Methods

Context

The alternative certification program sought to train mathematics and science career changers to teach in high poverty, urban middle schools. The relatively small grant-funded program recently completed its sixth and final year of educating 58 teachers. When the program began, middle grades certification did not exist in the state, but the state was interested in and working on creating it. As the certificate was being developed, we partnered with the state to ensure the program satisfied the guidelines for middle grades education as they were created and transformed into policy.

Each year, the program admitted a new cohort of participants, who completed the program requirements together. The program recruited participants from mathematics and science careers, with the intent that their content knowledge and ability to make real-world connections was high. To apply for the program, participants were required to submit a transcript, letters of recommendation, and a personal statement; pass the state content exam in their subject area; complete the Haberman assessment, which examined “fit” with urban schools (Haberman, 2008); and participate in an interview based on the Haberman model. A tuition subsidy was provided with the requirement that participants fulfill a three-year commitment to teaching in a high-needs school.

In order to familiarize participants with urban middle school teaching environments, the program integrated field experiences throughout coursework. Because many of the participants entered the program while employed, the program used an alternative schedule and an online component, but required being in schools on select Fridays. On those Fridays, participants taught lessons to small groups of students while being observed by their instructors. Participants transitioned into the program full-time for student teaching. Specific coursework changed somewhat during the life of the program based on changes at the state level, but it generally focused on curriculum and

pedagogy related to mathematics and science in the middle grades, adolescent development, and the diverse needs of English Language Learners and students with special needs. Classroom management and technology were emphasized throughout the program, both within coursework and through online and in-person seminars. Additionally, participants were required to pass intermediate and final performance assessments focused on implementing professional teaching standards. After completing the program, teachers were supported for three years through an induction program, including face-to-face professional development meetings as well as (at least) monthly observations in the classroom (For more extensive details, see Newton, Ketelhut, Pecore, & Jubilee, 2012).

Data Sources and Analyses

Participants include members of all six program cohorts. Participant characteristics, consisting of age, gender, race, and degree status were collected during the program application process. Personal statements and scores on the Haberman Star Teacher Pre-Screener Evaluation were also collected at the time of application. Personal factors, such as participant marital status, number of children, income, parental level of education, and prior experience working with low-income children, were collected in surveys after admittance.

With the purpose of this alternative certification program in mind – to add highly qualified candidates to the mathematics and science teacher workforce – participants were grouped in three different ways to identify factors influencing their choices to complete the program, to teach, and to commit to the profession. The first grouping separated participants into those who completed the program and those who did not complete the program for the purpose of identifying factors influencing program attrition. The second grouping separated participants into those who completed the program and entered a career in teaching and those who completed the program and did not enter a career in teaching; the purpose of this grouping was to identify factors influencing entrance into teaching. The third grouping separated participants into those who dropped the program, those who completed the program but did not teach for one full year, and those who completed the program and taught for a year or more; the purpose of this grouping was to identify factors influencing teaching attrition. Factors were identified from a pool of available data using relevant literature. For each of the participant groupings, Analysis of Variance (ANOVA) was used to determine the significance of participants' Haberman scores, transcript GPA, age, income, and parents' level of education. In addition, due to smaller sample sizes ($n = 58$), the results of the ANOVAs were compared to Kruskal Wallis analysis. Crosstabulations were used to determine the significance of dichotomous factors: gender, marital status, teaching experience, experience with low-income children, race, and completion of an advanced degree.

To gain a deeper understanding of why participants made their decisions to drop the program, complete the program but not commit to teaching, or to choose a career in teaching, a further cross case analysis of 8 program participants was conducted. These case study participants were identified for analysis based on characteristics representative of the participant pool and their career decisions. Profiles of these participants were created using descriptive characteristics and open-ended survey data. Surveys were conducted online and consisted of written responses to questions about their choices in regards to program completion, entering a career other than

teaching, or their teaching career. Individual responses to survey data were analyzed as separate case studies that illustrate what motivated each individual's choices. In addition, survey data were analyzed across cases for themes that emerged as common among participants.

Results

Quantitative

To determine factors significant to completion of the program, participants were divided into two groups: those who chose to drop the program and those who chose to complete the program. A substantial number of participants dropped the program ($n = 21$), which is worth exploration, even though the majority of participants completed the program ($n = 37$). Both the Kruskal Wallis and the ANOVA presented no factors significant to participants dropping or completing the program. Crosstabulations identified a strong, significant relationship between race and program completion (See Table 1). The majority of participants identifying as African American did not complete the program and therefore did not enter teaching while the majority of participants identifying as Caucasian or identifying as another race did complete the program. Experience with low-income children was also found to have a strong, negative relationship with program completion. Overall, participants were more likely to complete the program than not. However, with respect to prior experience with low-income children, participants who indicated on a program survey that they had no experience with low-income children were more likely to complete the program (See Table 2).

Table 1

The Crosstabulation of Participants who Dropped or Completed the Program by Race

Completed the program?	Race		
	African American	Caucasian	Other
No	68.4%	21.2%	16.7%
Yes	31.6%	78.8%	83.3%
	100.0%	100.0%	100.0%
	(19)	(33)	(6)
Phi: .469	p -value: .002	$p < .05$	

Missing Data: 0 Participants

Table 2

The Crosstabulation of Participants who Dropped or Completed the Program by Experience with Low-Income Children

Completed the program?	Experience with Low-Income Children?	
	No	Yes
No	16.7%	46.7%
Yes	83.3%	53.3%
	100.0%	100.0%
	(24)	(30)
Phi: -.316	<i>p</i> -value: .020	<i>p</i> < .05

Missing Data: 0 Participants

To determine factors that influence participants' choices to teach, participants were again divided into two groups: those who entered teaching and those that did not. Slightly less participants entered teaching ($n = 28$) than did not ($n = 30$). The same factors were analyzed using both ANOVA and Kruskal Wallis to determine if they also bear weight on participants' choice to teach. The ANOVA resulted in age and number of children as significant factors (See Table 3). The Kruskal Wallis identified an additional factor: participants' parents' level of education, with a Chi-Square of 5.381 and *p*-value of .020, indicating a significant relationship at an alpha level of .05. Both participants with fewer children and younger participants were more likely to enter teaching. Crosstabulations identified participants' marital status (See Table 4) and holding an advanced degree (See Table 5) as significant. Participants who are not married and participants who do not hold an advanced degree are both more likely to enter teaching.

Table 3

Analysis of Variance of Factors Influencing Participants' Choice to Enter Teaching

Participant Factor	Age	Parents' Level of Education	Number of Children	Income	Haberman Score	Transcript GPA
<i>F</i> -Statistic	8.520	2.562	4.876	2.697	1.548	1.600
<i>p</i> -value	.005	.115	.031	.106	.219	.212
<i>N</i>	58	58	58	57	51	50
<i>p</i> < .05						

Missing Data: 0 Participants

Table 4

The Crosstabulation of Participants who Entered Teaching by Marital Status

Entered Teaching?	Marital Status	
	Not Married	Married
No	34.8%	63.6%
Yes	65.2%	36.4%
	100.0%	100.0%
	(23)	(33)
Phi: -.284	<i>p</i> -value: .034	<i>p</i> < .05

Missing Data: 2 Participants

Table 5

The Crosstabulation of Participants who Entered Teaching by Advanced Degree

Entered Teaching?	Advanced Degree?	
	No	Yes
No	36.4%	72.0%
Yes	63.6%	28.0%
	100.0%	100.0%
	(33)	(25)
Phi: -.353	<i>p</i> -value: .007	<i>p</i> < .05

Missing Data: 0 Participants

In order to gain a more nuanced understanding of teacher attrition the population was again divided into groups by identifying participants who chose to make a longer commitment to teaching. The three groups of participants included the following: those who dropped the program ($n = 21$), those who completed the program but did not teach for more than one full year ($n = 13$), and those who taught for a full year or more ($n = 24$). Given that a substantial number of participants did not teach because they chose not to complete the program itself, this division allowed us to take into consideration a unique group of teachers who completed the program but did not choose to enter teaching or did not remain in the profession for an entire school year before exiting for another career. Both the Kruskal Wallis and ANOVA identified age as a significant factor. Post hoc tests identify a significant age difference between those who dropped the program and those who taught for a year or more, indicating that participants of a younger age are more likely to choose a career in teaching (See Table 6). Crosstabulations found race to be a significant factor (See Table 7). Compared to participants identifying as African American, those who identify as Caucasian or with another race were more likely to complete the program and also to remain in teaching for one full year or more. Furthermore, more participants identifying as Caucasian completed the program and did not teach for one full year than participants identifying as African American or as another race.

Table 6

Analysis of Variance of Factors Influencing Participants' Program Completion and Teaching Retention

Participant Factor	Age	Parents' Level of Education	Number of Children	Income	Haberman Score	Transcript GPA
<i>F</i> -Statistic	4.494	1.116	1.817	.365	.375	.561
<i>p</i> -value	.016	.355	.172	.696	.690	.574
<i>N</i>	58	58	58	57	51	50
Multiple Comparisons ^a				Mean Difference	<i>p</i> -value	
Dropped vs. Taught for one full year or more				8.113	.038	
<i>p</i> < .05						

Missing Data: 0 Participants

Table 7

The Crosstabulation of Participants who Dropped or Completed the Program by Race

Program Completion and Teaching Retention	Race		
	African American	Caucasian	Other
Dropped the program	68.4%	21.2%	16.7%
Completed program did not teach for full year	5.3%	33.3%	16.7%
Taught for one full year or more	26.3%	45.5%	66.7%
	100.0%	100.0%	100.0%
	(19)	(33)	(6)
Phi: .501	<i>p</i> -value: .006	<i>p</i> < .05	

Missing Data: 0 Participants

Qualitative

In order to provide a more nuanced understanding of the quantitative findings, we identified 7 participants that represented a variety of outcomes from their participation in the program (e.g., dropping out of the program, completing the program but not teaching, teaching for more than one year). These participants also varied in terms of personal factors, such as race, age, and level of education. Please note that all names are pseudonyms for the following teachers.

Kevin

Kevin, an African American male, was 34 when he entered the program with the goal of becoming a certified teacher; he held a bachelor's degree in science. Kevin was a strong candidate as he had prior experience as a long-term substitute in urban schools and was teaching without a certification in a local urban charter school. According to Kevin, his teaching experience gave him insight into the important role of classroom management in the urban setting. Like his fellow program participants, he expressed a love for his content area and a passion for teaching, "Since I truly love science, those classes were fun to teach for I have a natural desire to learn and educate young learners about science." Along with his goal of

becoming certified, Kevin's passion for his content area and teaching was an influential factor in driving him to apply to the program.

Once in the program, Kevin struggled somewhat with the course work. During his second semester in the program, Kevin was unable to complete the requirements for one course in the program, in part due to time commitments related to teaching full time and in part due to academic difficulties. Ultimately, incomplete assignments in the course caused him to have to fund taking the course a second time in order to complete the program on his own. Kevin expressed that he would have liked to complete the program but was unable to retake the course due to finances. He still maintains his initial goal of obtaining certification but continues to struggle with the financial aspect of funding his certification while paying off undergraduate loans. Kevin continues to work at a local charter school as an uncertified teacher. Financial support drew many participants to the program. For Kevin, losing this support meant that finances emerged as a major factor preventing him from completing the program.

Jill

Jill, a Caucasian female, was 48 when she entered the program. Jill was accepted to the program as a strong candidate with an advanced degree and high GPA. Like her fellow participants she had a passion for teaching. However, she reported she had difficulty connecting with urban students. She stated, "I fairly transparently don't have an urban background myself which I think was part of not connecting well with the students." Jill completed the program but did not enter a career in teaching. Primarily, Jill did not report feeling that she excelled at teaching. "I felt inept at classroom management and didn't like how the students are conditioned to ignore everything but meanness/yelling to get their attention." The work conditions she experienced during student teaching, caused by difficulty with classroom management, played a major role in Jill's decision not to enter teaching. Jill's choice was also partially motivated by finances as she explains it was "hard to swallow the huge pay cut." Jill is similar to many other participants with advanced degrees who were, in general, less likely to enter teaching. However, Jill had a contingency plan, "I didn't have to teach to have a job; my employer had held my position during my leave of absence and welcomed me back." Literature has found that although a career change to teaching is purposeful, many transition program members hold onto a contingency plan if necessary.

Nora

For Nora, a Caucasian female, both finances and family were a major factor in her career decisions. Nora was 39 when she transitioned from a successful career as an engineer motivated to make a larger impact in the world. In addition, she reported that teaching was compatible with maintaining a family life because the hours coincide with her children's school schedules. She chose this specific transition to teaching program because of the scholarship, quick duration, and location. She explains, "The fact that it was mostly paid for upfront made it easier for me to complete at that time. I had stepped away from engineering to take care of my family and was home with my kids when I began the program." Nora was pushed by family factors to transition to a career in teaching. However, for Nora and other participants, family has been influential in choices to leave or postpone teaching. Nora excelled in the program but did not enter a career in teaching. Family motivated her decision, "I was not willing to take a position in a very difficult

school, location or atmosphere as my first job. I was still home with my children and planning to have another. It didn't seem fair (to the students, other teachers, or the school) to take a position only to go out on maternity leave." Nora did not enter into teaching as she chose to stay home with her children. However, Nora has expressed that she would like to enter teaching once all of her children are school-aged.

Mary

Mary, a Caucasian female, found her experience teaching in an urban school to be "devastating." Mary entered the program at age 23 aware of her "passion for teaching." She reported this program was ideal for transitioning into the career and found the funding "helpful." Mary was a strong candidate with a high undergraduate GPA and a high Haberman score. During her student teaching, Mary had what she describes as a "bittersweet experience" with advanced and motivated students. She explains, "This made my experience extremely enjoyable and worthwhile. However, the negative aspect was that I did not experience an average urban classroom." Mary's rather positive experience student teaching left her unprepared for negative experiences in her own classroom.

After completion of the program, Mary took a position teaching in an urban middle school. She attributes her difficulties at this school to a lack of support and racism from both students and school staff. She explains, "Being one of the only white people in the all black school, students were very racist toward me. I was treated differently and was disrespected." She reported that her students attacked her and the school administration was not supportive of her. As a result, Mary left teaching in the middle of her first year. She later enrolled in a graduate program unrelated to education. Although she did not express that she entered the program with a contingency plan, Mary's bachelor's degree in a science-related field allowed her options other than teaching.

Derek

Like Nora and many program participants in general, family and finances influenced Derek's career decisions. However, they did not emerge as salient factors until after he completed the program and started teaching. Derek, a Caucasian male, was 39 when he entered the program. He reported that the program provided the needed finances to pursue his desire to teach. He completed the program and took a job at an urban middle school. He explains that during this first year finances became an issue so his wife began teaching full time as well. Like other case study participants, Derek also reported a lack of connection with his students during his first year. "I did have trouble coming to the realization that the kids did not respect that I wanted to help them." Rapport with students was a significant factor in case study participants' experiences with classroom management.

After his first year, Derek's position was not renewed and he accepted a position at another school because it was a "decent commute" and "seemed like an organized school." Ultimately, Derek left the position, saying, "I found I did not like the dynamic where my wife and I were both teaching full time. We both bring a lot of work home and we kept similar hours. This made it difficult for our family life with our two children." Like other case study participants, family was a factor that pulled Derek out of teaching. He went back to his initial career after 1.5 years

of teaching. Although Derek attempted a career in teaching, he did not commit because teaching did not fit with his family life.

While family was an important factor in Derek's choice to leave his new teaching career, it was also coupled with work conditions. Derek found little support within his school to "help with the more troublesome students" and was frustrated by a lack of effective systems in place. Derek's choice to return to his prior career was motivated by both school and personal factors, although he still has the desire to teach, "I still have the desire to teach, but I don't feel that my personal logistics at this time will allow me to teach in the middle/high school anytime soon. I also feel that so much of the teaching position these days is not teaching. It is paperwork, classroom management, and then teaching." Like Jill and Mary, work conditions such as classroom management and support were influential in Derek's decision to leave teaching.

Mark

Mark, a Caucasian male now in his second year of teaching, cites grants and funding for tuition as the biggest factor for choosing this transition to teaching program. He was 35 years old when he entered the program, motivated to teach in order to do something more "meaningful" than his previous career. Mark explains that once he started the program he was "determined" to complete it. He even chose to finish his last semester while teaching full-time, "The hardest part was the last semester, when I was first-year teaching and trying to finish the [masters] program at the same time. That was quite brutal. But I am glad to have persevered through that rough time." Other case study participants, such as Mary and Nora, spoke to their personal sense of determination to complete the program.

For Mark, classroom management is decisive in an urban school. "Teaching in an urban setting is all about classroom management. Even for an honors class, it's 90% 'how to get them to stop talking and pay attention' and 10% actual teaching. This is something that was not really emphasized in the program...we didn't even have a classroom management course...but it really should be the bulk of any urban teacher prep program." Although all of the case study participants mentioned classroom management, Mark was the first to connect it directly to the program, urging urban teacher preparation programs to place more emphasis on classroom management. According to Mark, he had a "very rough" first year but was able to develop some "effective" classroom routines. His contract was not renewed after his first year, but he was able to find a position at another school. Mark reported that his classroom management has improved in his second year, "Now, in my second year, I feel like I have some control over my class. At times I lost that control, but I am now able to regain it." Mark persevered through his initial classroom management struggles and after completing a "rough" first year is finding success.

Devin

Devin, a Hispanic male, was 25 when he began the program. He is now in his sixth year of teaching. He recognized the challenges of working in an urban school, but viewed them in terms of obstacles to overcome. Devin entered this program with a "love for mathematics." Financial support also facilitated his commitment to the program. "I did receive a scholarship which helped me with the financial aspect of the program. Once I quit my job, I was fully committed."

Like other case study participants, a sense of commitment to the program drove him to complete it. Devin entered teaching and struggled at first, “I made every mistake my professors told me not to make.” Like Mark, Devin connects his experiences with classroom management back to the program, but he expressed difficulty translating what he learned in the program to the reality of his own classroom. However, Devin drew on the formal support provided by the transition to teaching program. An official program mentor, with significant experience working in urban schools, provided support to in-service program members for three years. According to Devin, this support was influential in his decision to persevere and “aided in my transition and I maintained my composure to finish the school year.” Devin’s ability to draw on program support, maintain his composure, and finish the first school year was essential to his sustained career in teaching. Devin also viewed his struggles with classroom management as something that he could overcome. “It can be compared to baseball players’ attributes. Some run fast (good classroom management), some can hit far (good pedagogy), some hit for average (good test prep), some have good fielding (good student rapport), and some have amazing arm strength (parental contact). You eventually just learn to tend to your weakness.” Devin’s view of his classroom management difficulties, not as final but as something that would improve with practice, allowed him to persevere through his first year of teaching and find success in his new career.

Summary of Findings

Who Drops and Who Commits?

In terms of program completion, race was a significant factor (See Table 1). In particular, 68.4% of participants who identified as African American dropped out of the program and, therefore, did not enter a career in teaching. Although it is counter-intuitive, participants with no prior experience with low-income children were more likely to complete the program than those with prior experience. This counter-intuitive finding could be due to a relationship between prior experience with low-income children and race. It was found that 73.68% of African American participants had experience with low-income children. Only 39.9% of Caucasian participants and 50% of participants identifying as another race had prior experience with low-income children. As an example, one African American participant had informal science teaching experiences and loved it, which moved him to teach. However, he was unable to pass one of his certification exams. Program applicant screening factors, such as undergraduate transcript GPA, holding an advanced degree, and Haberman scores were not found to be significant, indicating that it is difficult to predict who will complete alternative certification programs based on their perceived strength as a candidate. Furthermore, lifestyle factors such as income, marital status, and number of children were not found to be significant until after participants completed the program.

In terms of participants who entered teaching, some factors emerge related to participants’ personal lives. Married participants and participants with more children are less likely to enter teaching, which indicates that family is influential. Participants whose parents’ have a higher level of education and participants who themselves hold an advanced degree are less likely to enter teaching, indicating that education is also influential. Finally, older participants are less likely to enter teaching. Together, these findings indicate that personal factors, such as family, financial status, and age contribute to participants’ choices to enter a career in teaching.

With regard to teacher retention, not just who decides to enter teaching, but who chooses to commit to the profession, race again emerged as significant. While the majority of African American participants dropped the program and did not enter teaching, all African American participants who did complete the program entered a career in teaching. Only one of these participants, a 34-year-old male, did not teach for a full year due to school environment and ultimately, family obligations that forced him to move to another state. However, he is currently seeking certification in that state. The remaining five African American participants taught for one full year or more. In contrast, while more African American participants dropped the program than Caucasian participants, Caucasian participants were more likely than others to complete the program, but either not enter teaching or not teach for one full year. Still, due to the high number of African American participants that dropped the program, more Caucasians and those who identified as another race taught for one full year or more. Age again emerged as a significant factor with significant differences between those who dropped the program and those who taught for one year or more. As with participants who entered teaching compared to those who did not, older participants are less likely to teach for one full year or more and are more likely to drop the program.

Choosing to Drop or Choosing to Commit: Understanding Why

While the above factors are influential in our case study participants' choices, the way in which participants respond to them is unique. These common factors played out very differently in participants' career decisions, leading to individualized career trajectories. Therefore, it is important to interpret these factors as complex and contextual. As supported by the literature, psychic rewards emerged as a major factor for applying to the program. Case study participants cited their love of mathematics or science, a passion for teaching, and a desire to impact others as motivating them to choose a career in teaching. In addition to psychic rewards, a majority of the case study participants mentioned finances, such as the grants and scholarships provided by the program to help pay tuition, as motivation for joining this alternative certification program. With the exception of one case study participant who mentioned a passion and sense of importance about putting resources into urban education, the remaining participants did not mention the urban context as motivation to choose this specific alternative certification program. Furthermore, no participants mentioned their middle-school orientation as motivation to choose this specific alternative certification program. Findings indicate that finances were the main factor in drawing participants to a program centered around urban and middle school contexts. Once they entered the program, the factors influencing the decisions of participants to drop the program, complete the program but choose a career other than teaching, or commit to teaching were unique to each participant. Most often, there existed a combination of influences that played a role in the decision to commit to teaching (e.g., academic and financial, financial and family, classroom management and family).

Conclusions

There were no screening factors, such as undergraduate GPA, holding an advance degree, or Haberman score, that emerged as significant to participants' program or teaching attrition. This finding indicates that it may be difficult for alternative certification programs to predict program

or teaching attrition based on quantitative factors. In fact, findings indicate that many of the participants' decisions related to program or teaching attrition are highly personal (e.g., family and finances). Race was also significant factor both in program completion and a commitment to teaching. Because the majority of African American participants did not complete the program, the majority did not stay in teaching for one year or more. In contrast, more Caucasian participants did stay in teaching for one year or more than dropped the program or completed the program and did not teach for one year or more. The majority of participants identifying as another race did stay in teaching for one year or more. With this in mind, it is important to reinforce the fact that all five of the African American participants who completed the program entered teaching and four of those five taught for one full year or more.

The study's findings speak to the obligation of the alternative certification program itself in meeting the demographic imperative to lessen the cultural and ethnic disparity between public school students and their teachers (Zeichner, 2003). Suell and Piotrowski (2007) found in their review of literature and outcome studies on alternative teacher education programs that these programs did recruit more teachers of color, mathematics teachers, science teachers, and teachers to urban schools (p. 56). While this program was also successful at recruiting highly qualified mathematics and science career changer teachers of color committed to teaching in urban schools, the program's dropout rate was high. Informal interviews with staff and with African American participants who dropped out of the program indicated the reasons were often personal or academic. At least eight African American participants dropped for a variety of academic-related reasons, ranging from struggles with course work, performance assessments, or state certification exams. This trend suggests a need for greater support during the program, perhaps in terms of academic counseling and test preparation. For example, programs can include systems for instructors to monitor participants' progress in the courses, for example, requiring them to report to program faculty when a program participant is late submitting an assignment or scores below a certain level. These kinds of monitoring systems could benefit all participants, who may find the transition back to student life difficult. Future studies should examine what types of supports are most effective.

For Kevin, an African-American participant who dropped the program, personal and academic reasons prevented him from completing a course, and financial reasons prevented him from paying to re-take it to continue with the program. Like Kevin who was still paying off school loans, financial considerations attracted participants into this program. The majority of case study participants mentioned financial support in the form of tuition grants and scholarships as an incentive. However, finances ultimately pushed Kevin and others to leave. This finding highlights the importance of financial support, such as grants and scholarships for tuition, for alternative certification programs that accept career changers. While participants' undergraduate degree in mathematics or science and their work experience means they are highly qualified, it may also mean they are likely to have other financial obligations, such as undergraduate loans, and are dependent on a regular income.

Personal factors seem to drive participants' choices to enter teaching, such as marital status, number of children, advanced degree, parents' level of education, and age. Finances emerged as a significant factor in participants' decisions to enter teaching. For many participants, such as Jill and Derek, switching from their prior mathematics and science careers to teach involved a pay

cut. Family was a factor that influenced case study participants' career decisions as well. Of all participants, those who were married and those with more children were less likely to teach. For example, Nora chose to delay her teaching career due to family factors and family factors influenced Derek to leave teaching to return to his former career. Participants with an advanced degree and participants with parents who obtained a higher education level were less likely to enter teaching. For example, Jill held an advanced degree and completed the program, but she did not enter teaching due to financial and work condition reasons. Jill had a contingency plan and was able to return to her prior job, which had been held for her. Age was also an important factor in participants' decisions to enter, and to commit to, teaching. Older participants were less likely to enter teaching and to commit. These findings indicate that financial and family obligations may make the transition to teaching too challenging for some, even when the desire is high. The findings related to age may suggest that moderate life experiences are optimal for career changers entering an alternative certification program.

Working conditions in urban schools emerged as a common theme and a majority of case study participants expressed difficulties with classroom management. During student teaching, Jill reported her difficulties stemmed from a lack of connection with her students and she chose not to enter a career in teaching. Mary and Derek, who both left jobs in teaching, interpreted their difficulties in terms of both a lack of connection with students and a lack of school structure or school support. In contrast, case study participants who remained in teaching saw their classroom management difficulties as something that would improve with time. Devin relied on support offered by the program to make it through his first year teaching and stated that he eventually learned to tend to his classroom management weaknesses. Although Mark found his first year to be difficult, he expressed that he is glad that he persevered. He saw improvement in his classroom management skills from his first year to his second. Devin and Mark also recognized their work conditions as constantly in flux. Mark reported that he still lost control of his class at times, but now in his second year he is able to regain it. Devin recognized that every day will not be perfect but that he loves his school "most days." This finding suggests the importance of supporting participants' understanding that classroom management difficulties are not permanent.

Significance

The purpose of this study was to better understand program completion and teacher retention for career changers participating in an alternative certification program targeting high-needs subject areas, grade levels, and schools. Some of the findings replicate prior findings on teacher attrition (e.g., importance of support and work environment). Yet, the study adds to the literature in several ways. The study expands an exploration of alternatively certified teachers' attrition to include those who do not complete their program or complete their program but do not enter teaching. It also presents additional factors significant to the program and teaching attrition of alternatively certified teachers. Findings may impact recruitment efforts of career changers for programs striving to produce a highly qualified and diverse population of teachers for urban communities.

Prior literature highlights the need to provide support to alternatively certified teachers. However, this study indicates that providing support during completion of the alternative

certification program may be equally as important as providing support while teaching. Literature finds that alternative certification programs attract diverse candidates, but the recruitment of teachers of color, especially African Americans, should be more purposeful. In addition, early clarification of what teaching is like in regard to time commitment and salary could help prevent program and teaching attrition. Programs could provide opportunities for participants to have conversations about these topics with experienced teachers before participants choose to transition to teaching. Furthermore, fostering an understanding of classroom management as a skill that develops with experience and therefore time is important. Programs should promote the development of classroom management skills by providing resources and extensive training on building rapport at the beginning of the school year to facilitate participants' connection with students.

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