A COMPARATIVE ANALYSIS OF HIGH SCHOOL STUDENTS' PERCEPTIONS OF CLASSROOM QUALITY IN TRADITIONAL PATHWAY AND SECOND CAREER TEACHERS' CLASSROOMS

by

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A Dissertation Submitted to the Graduate Faculty of George Mason University in Partial Fulfillment of The Requirements for the Degree of Doctor of Philosophy in Education

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LIST OF ABBREVIATIONS

AIT- Accelerated Induction into Teaching

Alternate Pathways/Alternate Routes- routes to a teaching certificate that fall outside of the full-time, 4 or 5 year traditional college or university teacher preparation program

Career switcher- a teacher who has earned at least a bachelor’s degree and worked in a non-teaching field for a period of at least three years prior to becoming a teacher in a continuing-contract track teaching position.

EAP- Educator Accomplished Practice

ITED- Intensive Teacher Education and Development

LEA- Local Education Authority

NCLB- No Child Left Behind Act

NCTM- National Council of Teachers of Mathematics

SAT-9- Stanford Achievement Test, 9th Edition

SOL- Standards of Learning

TES- Teacher Experience Survey

TIG- Teacher Interview Guide

Traditional pathway teacher- a teacher who completed a college or university based teacher education program and went directly into a paid teaching position.
ABSTRACT

A COMPARATIVE ANALYSIS OF HIGH SCHOOL STUDENTS’ PERCEPTIONS OF CLASSROOM QUALITY IN TRADITIONAL PATHWAY AND SECOND CAREER TEACHERS’ CLASSROOMS

Eric G. Barna, Ph. D.

George Mason University, 2008

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The purpose of this study was to determine if the students of teachers who are career switchers perceive a difference in classroom quality when compared to students taught by teachers who are from a traditional pathway. Additionally, this study investigated whether career switchers report that they plan instruction differently than traditional pathway teachers. A mixed methods design was used to compare students’ perceptions of teacher quality as defined by the Student Perception of Classroom Quality (SPOCQ) (Gentry and Owen, 2004) in the classes of four pairs of high school teachers in a small and diverse suburban school district who were matched on content. Four of the teachers gained entry into the classroom through a traditional academy-based pathway, and four came through a career-switcher program. Their students were surveyed using the SPOCQ while teachers completed the Teacher Experience Survey (TES) and were interviewed using the Teacher Interview Guide (TIG). Major findings of this study indicated that students of traditional pathway teachers perceived higher levels of appeal ($p = .003$),
challenge ($p < .001$), choice ($p = .015$) and meaningfulness ($p < .001$) as measured by the SPOCQ. Additionally, traditional pathway teachers reported they were less reliant on the textbook and were more likely to rate their master’s program as relevant professional development. The results of the study suggest that future studies of teacher pathways need to explore the effects of the pathway on their graduates’ classroom quality in order to ensure that the teachers who are being placed in the classroom are perceived by their students as creating effective classroom environments.
1. Introduction

Teachers have many choices when it comes to choosing a pathway to teacher certification. In 1983, only 8 states had alternate pathways to teacher certification. In 2007, all 50 states and the District of Columbia reported that they have some form of alternate pathway(s) to teacher certification, as well as the traditional college and university teacher preparation program pathways. There are currently about 485 alternate pathway programs that will be supplying approximately 1/3 of new teachers being hired (Feistritzer, 2007).

The growth in alternate pathways has been in response to anticipated teacher shortages, the No Child Left Behind Act’s requirement for highly qualified teachers, the national shortage of math and science teachers, and problems attracting teachers to hard-to-staff urban schools (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006a; Zientek, 2007). These programs are known by a variety of names in the literature including alternative certifications, alternative licensure, alternative certification programs, second career teachers, mid-career teachers and career switchers. The purpose of this study is to determine whether the students of teachers who are career switchers perceive a difference in classroom quality when compared to the students taught by teachers who are from a traditional pathway.
Scholars have debated the merits of alternate pathways since their inception. Proponents argue that these pathways provide much needed teachers to difficult-to-staff schools and content areas, such as math and science. Podgursky (2005) blames current licensing practices for keeping qualified individuals out of the classroom. Others feel that there are pathways other than traditional ones that can produce quality teachers (e.g. Glazerman, Mayer & Decker, 2006). Detractors suggest that alternate pathway teachers from some programs are ill prepared for the reality of the classroom and their students will not achieve as well as if they had traditional pathway teachers (Humphrey & Wechsler, 2007).

Ballou and Podgursky (2000) asserted that pathways to teaching should be made easier for those that want to teach. Podgursky (2005) argued that teacher licensing should be made more flexible because traditional measures of teaching quality, such as teacher licensure and Master’s degrees, were not the most informative indicators of teacher quality. Darling-Hammond (2000) argued against these claims. She suggested that student achievement was directly tied to teacher expertise and that lack of preparation contributed to reduced levels of student achievement.

Recently, researchers are shifting the focus of this debate to determining what constitutes a quality teacher preparation program, regardless of the pathway. Zientek (2007) makes the case that alternate pathways are here to stay and the focus should be on producing high quality teachers. Boyd et al. (2006b) also argue that the discussion should not be about which pathway is the best, but should be about capitalizing on the strengths of all pathways to put better prepared teachers into the classrooms.
Due to the multiple definitions used for alternate route programs, it is problematic to make clear comparisons among different pathways. In order to develop a clear focus, this study will investigate just one alternate pathway: a post-baccalaureate program designed for people who are leaving another career for teaching. The term used in this study to characterize these teachers is career switchers. As the definitions of career switchers and traditional pathway teachers have been inconsistent in previous research, it is vital to clearly define them. Career switchers, for the purpose of this study, are defined as people who have earned at least a bachelor’s degree and worked in a non-teaching field for a period of at least three years prior to seeking a teaching position. Their teaching license has been earned through a licensure program that varies from a traditional teacher licensure program to any of the programs recognized by the state of Virginia, such as the Virginia Career Switcher Alternative Route to Licensure Program (www.doe.virginia.gov/VDOE/newvdoe/CareerSwitcher/). Traditional pathway teachers completed a university-based teacher education program and often went directly into a paid teaching position without previous paid employment that required them to use their content knowledge. For example, an engineer who becomes a teacher would be considered a career switcher.

As a new entity on the education landscape, the research is predictably still in the “eclectic” stage. There are few studies that build one upon another to provide a sense of direction concerning the effects and effectiveness of career switcher programs. Researchers have conducted studies that compare career switchers to traditional pathway
teachers and attempt to examine what may be different in the classrooms in which they eventually take a teaching position.

In a survey, Ruffin (2003) found that career switchers, their mentor teachers and their supervising administrators were all generally satisfied with the preparation that career switchers received. Owings, Kaplan, Nunnery, Marzano, Myran, and Blackburn (2006) examined the Troops to Teachers program and surveyed both teachers from the program and their supervising administrators. They reported that the administrators were extremely satisfied with the overall quality of these teachers as compared to teachers with similar levels of experience. Gimbert, Bol and Wallace (2007) found that career switchers who completed the Transition to Teaching program used the National Council for Teachers of Math (NCTM) process standards more frequently than traditional pathway teachers with similar experience. They also found that students who had career switcher teachers scored higher on the statistics section of the Virginia Standards of Learning (SOL) Algebra I test than did students of traditional pathway teachers. In a study comparing a traditional teacher preparation program to a career switcher program at Florida Atlantic University, Earley, Goldberg, and Huie (2005) found that there was very little difference between the two groups based on a classroom practice measure of Florida’s Educator Accomplished Practices. Beyond these few studies, research that compares traditional pathway teachers and career switcher teachers is still a developing area of inquiry.
Student Perceptions

While the above studies do examine classroom practices and effects, they do not investigate how students may perceive these differences. Students’ perceptions can often vary from what educators and researchers observe in classrooms. These perceptions can provide important insights into improving the education of these students (Ames, 1992; Gentry & Springer, 2002). In this era of high stakes testing, students’ perceptions or beliefs have been overshadowed. Some believe that this has caused quality education to suffer (Eisner, 2001; Popham, 2001). Students’ perceptions have been tied to school success and achievement, however, measurement has been infrequent. Popham suggests that measuring students’ perceptions can assist teachers in making instructional decisions in addition to helping judge the effectiveness of curriculum and instruction. This study uses the SPOCQ to measure students’ perceptions of classroom quality created by their teachers.

If we are to expect our students to meet the challenges of the 21st century, then we will need to find more ways to attract talented and capable people into teaching. However, just finding them and putting them in the classroom won’t solve all of the problems. The field lacks much evidence on the effects of alternate route teachers on students. This study proposes to determine if students taught by career switchers perceive a difference in classroom quality as compared to students taught by traditional pathway teachers. Specifically, the present study is concerned with students’ perceptions of the level of appeal, degree of challenge, array of choices in their classrooms, and the meaningfulness students believe they find in their classrooms. Additionally, this study
investigates whether career switchers report that they plan instruction differently than traditional pathway teachers.

**Research Questions**

The research questions that will guide this study are:

1. Do students of career switcher teachers perceive higher levels of appeal in their classroom than students of traditional pathway teachers?
2. Do students of career switcher teachers perceive higher levels of challenge in their classroom than students of traditional pathway teachers?
3. Do students of career switcher teachers perceive higher levels of choice in their classroom than students of traditional pathway teachers?
4. Do students of career switcher teachers perceive higher levels of meaningfulness in their classroom than students of traditional pathway teachers?
5. Do students of career switcher teachers perceive higher levels of academic self-efficacy in their classroom than students of traditional pathway teachers?
6. Do career switcher teachers plan their instruction differently than traditional pathway teachers?

**Significance of this Study**

This study is significant because of the importance of putting quality teachers in classrooms. If we are to prepare students for their futures in the 21st century then we must attract the best and the brightest to teach them. Just putting these teachers into the classroom, however, does not guarantee that students will be successful. The field needs
more evidence as to how alternate and traditional pathway teachers affect their students and their perceptions.

Additionally, it is projected that one-third of new teachers are entering the field via an alternate pathway (Feistritzer, 2007). As Boyd, Grossman, Lankford, Loeb, and Wyckoff (2006b) state, every pathway has its strengths and its weaknesses. By comparing career switcher to traditional pathway teachers using students’ perceptions of classroom quality, this study may provide interesting insights into how engaging these classrooms are.

Finally, this study is significant as it may influence the relationships between teacher preparation colleges and universities and the school districts that hire their graduates. Many alternate pathways have a higher education component to them, which often requires colleges of education to work cooperatively with school divisions. If either party determines that certain components of alternate pathway programs affect student performance positively, then this may begin conversations about the nature of these programs. This may actually open doors for increased collaboration and communication between higher education and school divisions.
2. Literature Review

The purpose of this study is to determine if students of teachers that are career switchers perceive a difference in classroom quality when compared to students taught by teachers that are from a traditional pathway. Since the early 1980s, there has been tremendous growth in the number and variety of routes or pathways for prospective teachers to earn an initial teaching license. The terminology for these alternate pathways varies widely in the literature and includes alternate routes, alternative certification, alternative licensure, alternative certification programs, second career teachers, mid-career teachers and career switchers. Alternative pathways are usually defined as routes to a teaching license that fall outside of the full-time, 4 or 5 year traditional college or university teacher preparation program (Owings et al., 2006). It is estimated that 1/3 of our teaching workforce will enter the field through one of the approximately 485 alternate pathways to teacher licensure. Currently, all 50 states and the District of Columbia have some form of alternate pathway, as compared to only 8 states 25 years ago (Feistritzer, 2007).

Little research has been done, however, on students’ perceptions of how these teachers from alternate pathways differ from teachers prepared through traditional routes once they are in the classroom. Therefore, it is important to frame this study beginning with an overview of alternate pathways. Also, this review will briefly discuss the debate
over which route produces the teachers the nation needs, and how it has shifted its focus away from the “horse race” for naming the best pathway to addressing the needs of all types of teacher preparation programs in order to benefit the children in the classroom (Cochran-Smith & Fries, 2005). Following this discussion, the review will explore one of the alternate pathways: career switchers. In that section studies that compare career switchers to traditional pathway teachers based on what they do in the classroom will be examined. Finally, the review will shift to students’ perceptions of classroom quality as measured by the Student Perceptions of Classroom Quality (Gentry & Owen, 2004) (SPOCQ).

As there is a variety of alternate pathways to explore, it is important to clearly describe the pathway that a researcher examines. For the purpose of this study, the pathway being investigated is the one that prepares teachers who are leaving another field in order to pursue a teaching career, e.g. engineers who want to teach mathematics. In most instances, the common name for these people is “career switchers,” which is the term used for the purpose of this study. Career switchers are defined for this study as people who have earned at least a bachelor’s degree and worked in a non-teaching field for a period of at least three years prior to seeking a teaching position. Their teaching license has been earned through a licensure program that varies from a traditional teacher licensure program to any of the programs recognized by the state of Virginia, such as the Virginia Career Switcher Alternative Route to Licensure Program (www.doe.virginia.gov/VDOE/newvdoe/CareerSwitcher). Traditional pathway teachers completed a university-based teacher education program and often went directly into a
paid teaching position, without previous paid employment that required them to use their content knowledge.

In this chapter, the literature on the preparation of career switchers, paying particular attention to studies that attempt to compare career switchers to traditional pathway teachers, will be explored. Additionally, literature that tries to discern what is occurring in the classrooms of these teachers is of particular interest. A comprehensive search found that the literature on both of these topics is not extensive. What exists is an eclectic array of studies mostly focused on the debate about which pathway is better, traditional or alternate. Missing are studies that provided a students’ perspectives on teacher and classroom qualities. The present study seeks to address that gap.

Finally, this review discusses the Student Perception of Classroom Quality (SPOCQ) instrument (Gentry & Owen, 2004). The SPOCQ was originally an instrument designed for use with gifted students, but was recently normed with general education high school students. The authors state that the instrument can be used to assess students’ perceptions as a measure of classroom quality. The SPOCQ consists of five constructs: appeal, challenge, choice, meaningfulness and academic self-efficacy (Gentry & Owen, 2004). It will be described and discussed later in this chapter.

_Debate Over Pathways_

Ballou and Podgursky (2000) argued that alternate pathways should be expanded and not be restricted so that the pathways to teaching would be made easier for those who want to teach and would also be more available. Podgursky (2005), in an article in which he takes a strong stance against current teacher licensing standards, sums up much of the
argument in favor of alternate pathways by stating that “traditional measures of teacher quality such as experience, master’s degree, and education coursework explain virtually none of the variation in teacher effectiveness.” Podgursky argues further that teacher licensing should also be made more flexible because it would particularly help urban school districts, which are generally hard to staff.

On the other side of the debate, Darling-Hammond (2000) disagreed in her response to the opinions of Ballou and Podgursky (2000). She argued that student achievement is directly related to teacher expertise, which includes teacher education and teacher experience. Lack of teacher preparation, Darling-Hammond argued, contributes to reduced levels of student learning. This is most evident for those students in urban school districts who most need skillful teaching in order to be successful.

One of the most visible alternate routes to licensure is Teach for America (TFA). TFA teachers do not fit the definition of career switchers used in this study, but it has become a popular research subject for much of the debate over alternate pathways because of its high profile. TFA was founded in 1989 and focuses on recruiting college seniors or recent college graduates from highly selective institutions with strong academic records and leadership capabilities. These recruits are willing to commit to teaching at least two years in a low-income school. Most TFA recruits do not have education-related majors and do not have the same training that traditional pathway teachers have. While these program attributes are similar to programs designed for career switchers as defined for this study, most TFA recruits are college seniors or recent graduates (Glazerman, Mayer & Decker, 2006). Therefore, they are not career switchers
because in most instances they do not have three years of post-baccalaureate work experience that requires them to apply the content they learned in their, often, liberal arts majors.

As is indicative of the debate over alternate pathways, there are proponents and detractors of TFA. Glazerman et al. (2006) studied the impact of TFA teachers in Baltimore, Chicago, Los Angeles, Houston, New Orleans and the Mississippi Delta. The achievement in math and reading of students taught by TFA teachers was compared to the achievement of students taught by “control” teachers, defined as “any teacher who came from a source other than TFA.” These control teachers were regularly licensed, alternately licensed or unlicensed.

The final research sample included 17 schools, 100 teachers and almost 1,800 students. There were 44 TFA teachers and 56 control teachers. The authors’ intent was to compare teachers working in the same school at the same grade. Students were randomly assigned and were given an abbreviated version of the math and reading subtests of the Iowa Test of Basic Skills at the beginning of the year and at the end of the year to measure achievement growth via students’ gain scores.

Glazerman et al. (2006) reported that the TFA teachers had a positive impact on the math achievement of their students. Students taught by TFA teachers increased from the 14th to the 17th percentile in math, while the students taught by control teachers scored in the 15th percentile in the fall and spring. The impact estimate of TFA teachers on math was 2.43 with \( p < .01 \). TFA teachers did not have an impact on reading achievement, as
both groups of students showed the same growth. The impact estimate for reading was 0.56 with $p < .01$.

The authors concluded that the TFA offers an appealing group of teacher candidates, based on the math achievement of their students. They stated that school districts can increase their math scores, while not hurting their reading scores, with very little financial cost. They also believed that the study indicates that the TFA is making progress on its mission to reduce the inequities in education prevalent in low-income schools. They are providing good teachers to schools that generally are not able to attract them (Glazerman et al., 2006).

Darling-Hammond, Holtzman, Gatlin, and Heilig (2005) investigated whether licensed teachers are more effective than those that are not licensed. They studied a large student-level data set that consisted of all Houston Independent School District teachers and students in grades 3 and higher from the 1995-1996 school year through the 2001-2002 school year (a total of 15,344 teachers and 271,015 students). The purpose of the study was to replicate a previous study of TFA recruits in Houston conducted for the Hoover Institution’s CREDO center by Raymond, Fletcher, and Luque in 2001. Darling-Hammond’s et al. intent was to extend the CREDO study by controlling for many variables that can affect student achievement. Among these variables were student prior achievement, student demographic characteristics, teacher’s years of experience and highest degree completed, classroom level variables and school level demographics.

The study focused on the achievement of 4th and 5th grade students on six different reading and mathematics tests over the six year period. For each year of the
study, approximately 35,000 students’ scores were examined. The authors compared the achievement of students of licensed and unlicensed teachers, focusing on TFA recruits. There were approximately 1,800 teachers included in the study for each year, with about 190 TFA teachers included in this total. Licensure status was included for all teachers which indicated several alternate pathways, but results were reported only by licensure status (licensed or unlicensed).

The measures of student achievement included three different tests: the Texas Assessment of Academic Skills (TAAS), the Stanford Achievement Test, 9th Edition (SAT-9), and the Aprenda which is a Spanish language test of math and reading for students who are taught in Spanish. Darling-Hammond et al. found that TFA teachers had a positive impact on achievement on the TAAS in math and a non-significant effect on the TAAS in reading. The sample size for the TAAS math test was 105,511 students over the 6 years of the study with \( t = 3.98, p < .001 \). There were 103,122 students in the TAAS reading sample with \( t = -0.18, p < .001 \). On the SAT-9 and Aprenda, however, the TFA teachers had a negative impact on student scores in math and reading. The SAT-9 math sample was 60,488 students and \( t = -2.74, p < .05 \); while the SAT-9 reading sample was 60,607 students and \( t = -2.08, p < .05 \). The Aprenda math sample was 11,437 students with \( t = -2.88, p < .01 \) and the Aprenda reading sample was 11,436 students with \( t = -2.61, p < .01 \). The authors found that when comparing similar settings, there were no instances where TFA teachers performed as well as traditional pathway teachers of comparable experience levels.
The authors concluded that the TFA program does have some success: they provide teachers to high need areas. In other words, they are providing good teachers to schools that generally are not able to attract teachers from the traditional pathway. In order to improve their effectiveness, however, Darling-Hammond et al. suggested that TFA teachers should be given additional training. Much of this training could be provided during the school year, they stated, by experienced licensed teachers serving in a mentor/coach capacity (Darling-Hammond et al., 2005).

Xu, Hannaway and Taylor (2007) conducted a study that compared test scores of high school students taught by TFA teachers to test scores of students that did not have TFA teachers. This is currently the only study available that investigates TFA at the high school level. The authors compared scores on End-of-Course (EOC) exams in 8 content areas (Algebra I, Algebra II, Geometry, Physical Sciences, Physics, Chemistry, Biology, and English I). These data were made available through the North Carolina Education Research Data Center.

Xu et al. (2007) investigated the 23 local education agencies (LEAs) in North Carolina that employed at least one TFA teacher between 2000 and 2005. In these LEAs, there were 5,758 students taught by TFA teachers as compared to 279,884 students taught by non-TFA teachers and 127,492 taught by novice (fewer than 3 years of experience) non-TFA teachers. There were 69 unique TFA teachers. The study compared these TFA teachers to 5,678 non-TFA teachers and 1,959 novice non-TFA teachers.

The researchers linked the students’ standardized scores from the EOC tests to the type of teacher (TFA, non-TFA or novice non-TFA) using a model that matched students
to teachers based on test proctor and classroom demographics. This was done because North Carolina does not reference test scores to the actual classroom teacher of the student. Instead, North Carolina links them to the teacher assigned to proctor the test. This model creates the possibility of matching errors that could lead to misleading results (“WWC Quick Review,” 2008).

The authors reported that the effect of having a TFA teacher is associated with about 0.12 standard deviations ($p < .05$) improvement in EOC performance as compared to having a non-TFA teacher. These findings indicate that TFA teachers are able to offset their lack of teaching experience and teacher training in terms of student test scores. As TFA teachers are generally placed in hard to staff schools (urban or rural), the authors state that the disadvantaged students in these schools are better off being taught by TFA teachers than those that would teach in their place (Xu et al., 2007).

The above provides an accurate backdrop to the debate that has been occurring for the last several years. These studies represent much of the “back and forth” that has taken place in this debate. It also supplies a context for the scope of this study, career switchers, which is just one of the many alternate pathways to teaching.

**The Debate Shifts**

As is evident, the debate over alternate pathways to teaching has been heated for several years. It is interesting to note, however, that as early as 1998 some researchers were trying to steer the discussion to practical matters. Miller, McKenna and McKenna (1998) noted that “…researchers should investigate not whether such programs work, but which ones work best.” Recently, this philosophy has led many researchers to focus their
efforts to shape teacher education programs to benefit the students they teach. The emphasis now seems to be shifting to determining what constitutes a quality teacher preparation program regardless of the pathway.

The No Child Left Behind Act of 2001 (NCLB) established minimum standards for determining highly qualified teachers. It placed the responsibility for meeting these standards on the states and one avenue used by states is alternate pathways (Zientek, 2007). Zientek makes the case that alternate pathways have established themselves in education and that it is now time to focus on ensuring that “…effective teacher preparation programs are created and high-quality teachers are produced.”

Emily Feistritzer, the President of the National Center for Alternative Certification and the National Center for Education Information, in her testimony to the U.S. House of Representatives Committee on Education and Labor, stated that 1/3 of all new teachers hired are coming from alternate pathways. She recommended that the focus now shift to producing effective teachers in the classrooms where they are needed, regardless of their pathway. She also encouraged the Committee to encourage research that answers the critical questions, “What makes for truly effective teachers and how do they come by those qualities?” (Feistritzer, 2007).

Two very recent companion studies funded by the MetLife Foundation, which is an organization that is specifically interested in potential career switchers as teachers, reviewed current research on career switchers (Haselkorn & Hammerness, 2008) and conducted a public opinion survey to gauge the interest in teaching of college graduates (Peter D. Hart Research Associates, Inc., 2008). The survey found that 42% of 24- to 60-
year olds with at least a Bachelor’s degree would consider becoming a teacher in the future (Peter D. Hart Research Associates, Inc.). Haselkorn and Hammerness argue that these potential teachers “…bring with them a depth of content knowledge and experience that can be effectively applied in schools and classrooms.” They elaborate that this can be a double-edged sword as work experience in other environments does not always translate well to success in the school environment due to school-based factors such as bureaucracy, lack of independence and lack of down-time.

Both studies make several recommendations focused on attracting well-qualified career switchers to teaching, as well as increasing their ability to be successful. They include targeting only the strongest candidates, increasing stipends while being trained, increasing entry-level salaries, tailoring pathway programs to the unique needs of adult learners, providing strong clinical experiences for career-switchers and improving working conditions in schools. They also call for added research that is focused specifically on career switchers as they are often lumped into studies with teachers from other pathways (Peter D. Hart Research Associates, Inc., 2008; Haselkorn & Hammerness, 2008).

The Teacher Pathways Project recognizes the need for discovering what works in teacher preparation in order to better comprehend how various pathways affect the quality of the teachers entering into New York City Schools (Boyd, Grossman, Lankford, Loeb, Michelli, & Wyckoff, 2006a). While teachers in New York City follow many pathways to the classroom, three of the primary pathways examined by the project are
Teach for America (TFA), the New York City Teaching Fellows Program and the Teach for Opportunity Program.

The New York City Teaching Fellows Program was the result of a lawsuit taken against New York City Schools by the New York State Board of Regents. The Regents required New York City to place licensed teachers in every classroom by 2003, which created a shortage of approximately 12,000 licensed teachers. The New York City Teaching Fellows Program was created as one of the alternate pathways to address the shortage and was approved by the Regents (Boyd et al., 2006).

One of the research questions investigated by the Teacher Pathways Project focuses directly on the impact in the classroom by the type of preparation a teacher undergoes. The Pathways project examined the features of teacher preparation that are most effective in helping teachers improve the reading and math scores of elementary students. One of the outcomes the researchers hoped to establish is to help alternate pathway programs strengthen their programs by identifying the particularly important parts of teacher education in New York City.

The results for the above study were discussed in Boyd, Grossman, Lankford, Loeb, and Wyckoff (2006b). They found that in math, TFA members had very similar results to college-recommended teachers. College-recommended teachers are teachers that completed a university-based program and all state requirements prior to teaching. College-recommended teachers, for the purpose of the present study, are traditional pathway teachers.
In the full model comparison of mathematics achievement, first-year teachers in all pathways were included. First-year teachers from Teaching Fellows did not perform as well as first year college-recommended teachers, while first-year TFA teachers performed similarly to first-year college-recommended teachers. The effect for first-year Teaching Fellows teachers was -0.02, \( p < .01 \) when compared to first-year college-recommended teachers. The effect of first-year TFA teachers as compared to first-year college-recommended teachers was 0.01, which was not significant.

The findings in English/language arts (ELA) showed that first-year TFA and first-year Teaching Fellows teachers performed worse than first-year college-recommended teachers. The effect for first-year TFA teachers was -0.03, \( p < .01 \), and the effect for first-year Teaching Fellows was -0.03, \( p < .01 \); as compared to first-year college-recommended teachers.

The results were different when comparing teachers after their first year of experience by grade and content area. In elementary math (grades 4 and 5), second-year TFA teachers and Teaching Fellows teachers showed no statistically significant differences when compared to second-year college-recommended teachers. The effect for TFA teachers was 0.04 and for Teaching Fellows teachers was 0.06, as compared to 0.05 for college-recommended teachers.

The differences for elementary ELA showed that there were no statistically significant differences by the teachers’ third year of experience. The effect for third-year TFA teachers was -0.03 and for third-year Teaching Fellows teachers was 0.04 as compared to 0.05 for third-year college-recommended teachers.
At the middle school level (grades 6, 7 and 8), the results varied by pathway at the third year of experience. In math, there was not a statistically significant difference between third-year TFA teachers (effect 0.11) and college recommended teachers (effect 0.04). There was a statistically significant difference between third-year Teaching Fellows teachers as compared to third-year college-recommended teachers. The Teaching Fellows teachers outperformed the college-recommended teachers. The effect for Teaching Fellows teachers was 0.09, $p = .10$ as compared to 0.04 for college-recommended teachers.

In middle school ELA, the results were similar to math when comparing third-year teachers. There was not a statistically significant difference between third-year TFA teachers and third-year college-recommended teachers, but third-year Teaching Fellows teachers did outperform third-year college-recommended teachers. The effect for third-year TFA teachers was 0.51. The effect for third-year Teaching Fellows teachers was 0.11, $p = .05$ and the effect for college-recommended teachers was 0.03.

The authors summarize their findings by stating that alternate pathway teachers often provide smaller gains in student achievement, at least initially. In English/language arts, this difference lasts longer. By the third year, these differences are not statistically significant at the elementary level in math or ELA. However, in middle school, third-year Teaching Fellows teachers outperform third-year college-recommended teachers in both math and ELA. There is not a statistically significant difference between third-year TFA teachers and third-year college-recommended teachers in either subject at the middle school level. Boyd et al. point out, however, that this study is not about which pathway is
best. They believe that different pathways bring teachers with different strengths to the classroom. They argue that the focus needs to be on improving all pathways for teachers in order to improve classroom instruction (Boyd, Grossman, Lankford, Loeb, & Wyckoff, 2006b).

While the debate about the effectiveness of alternate pathway teachers as compared to traditional pathway teachers has not ended, recent literature seems to signal a shift in emphasis. Research is beginning to focus on what constitutes an effective teacher education program, be it traditional or otherwise. The bottom line is that children are affected by the quality of instruction, and it is the responsibility of policymakers and educators to put the best possible teachers in their classrooms. The present study attempts to continue in this direction by trying to determine from the students’ perspective what is different in career switchers’ classrooms as opposed to the classrooms taught by traditional pathway teachers.

**Classroom Studies**

While the various definitions of alternate pathways make it difficult to focus solely on career switchers, there is a body of literature that emphasizes this pathway. Career switcher programs have been the subject of much of the literature within the alternate pathways literature. Researchers and policymakers alike hypothesize that career switchers bring something to the classroom that traditional pathway teachers do not have, and especially knowledge of the real world applications of traditional school content. We know basic demographic details that show that career switchers don’t look like traditional pathway teachers. Surveys have shown that career switchers are more likely to be male
and more likely to be a minority than traditional pathway teachers (Feistritzer, 2005; Humphrey & Wechsler, 2005). What we do not know is what do career switchers do differently in classrooms from traditional pathway teachers?

Ruffin (2003) examined the perceptions of career switchers, their mentor teachers and their principals regarding the preparation of alternatively prepared career switchers. These career switchers received their teacher preparation in the Virginia Career Switcher Alternative Route to Licensure Program operated by the Virginia Department of Education in collaboration with local school districts. Prior to entering the program, each career switcher had obtained a bachelor’s degree from an accredited institution and had five years of professional work experience. Additionally, they had completed coursework required for their teaching area and received qualifying scores on the Praxis I and II. One of the requirements of the receiving school is that the career switcher is to be provided a mentor teacher.

The Virginia Department of Education’s Office of Teacher Education and Licensure provided the list of career switchers, their mentor teachers and the names of the school in which they were teaching. A survey that included 48 items relating to the participants’ perceptions regarding the preparation of career switchers in managing classroom discipline, conducting student evaluation, using appropriate instructional methods and strategies, instructing special needs students, and applying human relation skills. The survey also included demographic information and two open-ended questions. The open-ended questions asked for recommendations for improving the Career Switcher
Program and teacher licensure in Virginia. The career switchers, mentor teachers and administrators were all asked to fill out the survey individually.

The surveys were mailed to 82 career switchers, 48 mentor teachers and 70 school principals in 41 of Virginia’s 132 school districts. The discrepancy in the numbers of mentor teachers is due to the fact that they may have more than one career switcher assigned to them. The same is true for principals in that they may have more than one career switcher in their school. If mentor teachers and principals were working with more than one career switcher, they were asked to return only one survey. Fifty-eight questionnaires (71%) were returned from career switchers, 33 (97%) were returned by mentor teachers and 48 (69%) were returned by principals. A total of 139 questionnaires were returned and analyzed.

The surveys contained multiple-choice questions and Likert-type scales. Composite scores were obtained for the variables in each of the 5 subsets and then converted to the same 5-point scale of the original instrument. Ruffin (2003) found that the perceptions of career switchers, their mentor teachers and their principals were very similar in all five subsets. All groups were satisfied with the overall preparation of career switchers. Of note was the subset of instructional methods and strategies. All three groups overwhelmingly (approximately 89.7% to 97%) perceived that career switchers were well prepared to employ a variety of instructional methods and strategies.

These findings tell us that career switchers, their mentor teachers and their administrators are generally pleased with the preparation that career switchers have. While this is noteworthy, it does not provide us with a clear view of what is occurring in
their classrooms. Therefore, we need to search elsewhere for comparisons that may provide a deeper understanding.

The most well known career switcher program is Troops to Teachers (TTT). Troops to Teachers began in 1992 when the military was undergoing a significant downsizing and the shortage of math and science teachers was increasing. Congress authorized the Department of Defense to implement this new program whose focus was to help separated members of the military earn a teaching license and to teach in school districts with large low-income populations. Since its inception, TTT has placed more than 8,400 teachers in elementary and secondary schools (United States Government Accountability Office, 2006).

Owings et al. (2006) surveyed program completers from TTT \( (n = 1,282) \) and supervisors (school administrators) of TTT teachers \( (n = 875) \) in 49 states and the District of Columbia. The surveys were mailed to 2,103 TTT completers identified from the national TTT database and nonrespondents were followed up with a Web-based survey. The overall response rate for the Program Completer Questionnaire (teacher survey) was 61%. Of those completing the teacher survey, 69% \( (n = 883) \) also had their supervisor return a completed School Administrator Questionnaire. The teacher responses were self-report on a variety of demographic questions along with several instructional practice questions. Administrators were asked to rate the TTT teacher in comparison to “other teachers with similar years of experience” on three scales: instructional practices, discipline and classroom management, and overall teacher quality on a 5-point Likert-type scale.
Owings et al. found that school administrators rated the TTT teachers very high in all three areas when compared to teachers with similar years of experience in their school. On the instructional practice scale, item means ranged from 3.96 (agree/strongly agree 74.6%) to 4.52 (agree/strongly agree 93.3%). The lowest mean was for “asking students to keep track of their own performance on learning goals” while the highest mean was for “emphasizing the importance of effort with students.” Items on the classroom management and discipline scale had means that ranged from 4.29 to 4.43. The overwhelming majority of supervising administrators agreed or strongly agreed with all 5 items in this scale with a range from 86.2% stating that they used “specific techniques to keep aware of problems or potential problems in the classroom” to 90.2% reporting that TTT teachers had “comprehensive and well-articulated rules and procedures for behavior.” Finally, the supervising administrators rated the TTT teachers very high in relation to other teachers in terms of overall effectiveness. Close to 90% of the administrators agreed or strongly agreed that TTT teachers are superior to other teachers with similar teaching experience in terms of having a positive effect on student achievement, working well with others, independently handling discipline problems, following school policies and regulations and keeping parents informed about their child’s progress.

Earley, Goldberg, and Huie (2005) conducted a case study comparing Florida Atlantic University’s traditional and alternative teacher preparation programs. The purpose of the study was to compare the retention rates and classroom performance of the two routes by looking at the teachers during their first semester of teaching.
The sample was composed of 14 traditional pathway teachers and 14 career switchers \((N = 28)\) enrolled in a traditional and an alternate route program at Florida Atlantic University. The traditional pathway teachers were enrolled in the Accelerated Induction into Teaching (AIT) program which is an alternative internship program for selected students in their final semester of the traditional teacher preparation program. In other words, the AIT program is a traditional teacher preparation program that includes an alternative student teaching experience. These teachers fulfilled the requirements of their undergraduate education degree then participated in a paid student teaching internship with a local school division.

The AIT program was developed in response to a local school district’s critical teacher shortage. Students entering the program had completed all of their classes, passed the required state tests and been screened by the school district. They were the teacher of record for their classes and received a stipend from the district. They were assigned a mentor in the school which they worked, and if the internship went well the school district would hire them as regular teachers upon graduation.

The Intensive Teacher Education and Development (ITED) program was designed for career-changers with a bachelor’s degree who are interested in teaching in critical needs areas such as math and science. The program included a recruitment and screening phase in cooperation with the participating school district, an intensive institute revolving around effective teaching practices and an internship built on the AIT model. This internship also included a mentor.
The traditional pathway teachers were all undergraduate elementary education majors and thirteen were working in elementary schools. None of the career switchers had attended a traditional teacher preparation program. Eight were teaching at the high school level while six were teaching in middle schools (Earley et al., 2005).

Earley et al. (2005) had the teachers complete the Teacher Self-Efficacy Scale at the beginning, middle and end of the semester. A higher score indicated stronger efficacy. They also analyzed the teachers’ journals which were a daily requirement and served as one form of communication with their mentor teacher. Finally, mid-term and final evaluations were analyzed. These evaluations were based on the 12 Educator Accomplished Practices (EAP) defined by the Florida State Board of Education. Each EAP is defined by behavioral indicators. These evaluations were completed by the teachers’ university supervisors who were trained in the use of the evaluation instrument. These supervisors were third party observers.

The data were analyzed in several ways. The preservice teachers’ journals were analyzed for themes by the three researchers. They independently read the journals and determined the themes. Together, they then developed common themes. Descriptive analyses were conducted on the EAP evaluations and the efficacy scales. Each EAP had several specific behavioral indicators and a mean rating was used as an overall rating for each EAP. Chi-Square analyses were performed on the quantitative data to determine if there were any significant differences between the two programs. The authors noted that due to the small sample size, the results of these analyses are not generalizable and should only be used in the context of this study.
The findings of this study showed that both groups of students were performing satisfactorily by the end of the semester. Traditional pathway teachers did, however, score significantly higher on 9 of the 12 EAPs (Assessment, Communication, Critical and Creative Thinking, Diversity, Ethics and Professionalism, Human Development and Learning, Planning, Role of the Teacher and Technology). Planning had the most significant differences at midterm \((x^2(6) = 14, p < .05)\) and semester \((x^2(3) = 12.44, p < .01)\). As both groups of teachers scored at least a 3 “meets expectations” on all indicators by semester’s end, this difference may not have a practical impact. The overall performance means for the EAPs were 3.9 for AIT teachers and 3.8 for ITED teachers at the end of the semester.

The efficacy scales and journal themes support these findings. As a total group, 91-100% of the participants reported strong overall feelings of efficacy by semester’s end as measured by the Teacher Self-Efficacy Instrument. By the midterm, the journal themes were very similar for both groups of teachers. Common themes indicated that both groups became self-evaluative and that they grew frustrated with their delivery of instruction. Thus, both groups of teachers were very similar across the three measures. To summarize, this study did demonstrate some minor differences between the AIT teachers and the ITED teachers. The main difference pertaining to classroom performance was reflected in the EAP ratings. Not all ITED teachers received satisfactory ratings on their EAPs by midterm, although they did by the time of the final evaluation. The AIT teachers did all receive satisfactory ratings by midterm. As both groups were essentially rated the
same at the end of their program, these differences may be too slight in totality to make any practical difference when it comes to teacher classroom performance.

Gimbert, Bol and Wallace (2007) examined the influence of teacher preparation on student achievement and the application of process standards, or what are also known as instructional practices, and content standards developed by the National Council of Teachers of Mathematics (NCTM). They compared traditional pathway teachers to career switchers from the Transition to Teaching (T3) program in an urban school district in southeastern Virginia.

The T3 program selected participants who had a bachelor’s degree or higher from an accredited college or university with courses in mathematics or a bachelor’s degree or higher from an accredited college or university and work experience related to mathematics. Applicants also had to receive qualifying scores on Praxis I and II and be willing to commit to teaching in the urban school district where they would receive their training for three years. These participants also had to successfully complete a 5-week summer institute that focused on education coursework and attain a Virginia professional license with an endorsement in secondary mathematics. This group of teachers fit the definition of career switchers for the present study.

Gimbert et al. (2007) employed a mixed-methods design to investigate the differences in student achievement and instructional delivery methods of career switchers in the T3 program as compared to traditional pathway teachers. Student achievement was measured using the Virginia Standards of Learning (SOL) Algebra I test and district-level
quarterly mathematics assessments. Classroom observations were used to examine the extent to which the teachers implemented NCTM process and content standards.

Teacher selection was based on the availability of teachers trained in the T3 program who were teaching Algebra I at the middle or high school level. This group of teachers \((n = 6)\) was matched with a group of 1st-year Algebra I teachers \((n = 6)\) who were traditional pathway teachers. Both groups consisted of 4 high school teachers and 2 middle school teachers.

The researchers developed a 14 item Likert-type observation tool that was aligned to the NCTM process and content standards for the presence or absence of each teaching behavior. Some examples of the process standards items are “real-world situations are presented to introduce, review, or reinforce mathematical concepts” and “problems presented draw on a variety of methods to arrive at a solution.” Content standard items include “students utilize spreadsheets to solve time-consuming computational problems and real-world situations” and “students will utilize graphing utilities to solve time-consuming computational problems and real-world situations.” Observers also qualitatively described the activities taking place during the observation. Four university faculty members and one graduate assistant conducted 3 to 4 classroom observations of each teacher for a total of 42 observations. Each observation lasted 30 to 45 minutes and varied from the beginning, middle and end of an Algebra I unit.

The district mathematics curriculum coordinator and mathematics teachers in the district designed the quarterly assessments. These assessments were designed to mirror the Virginia Standards of Learning (SOL) Algebra I test, which is the state-mandated
end-of-course assessment. Student scores were collected immediately following the administration of each quarterly assessment throughout the 2003-2004 school year. The Algebra I SOL scores were collected in June 2004.

The findings from the observations indicated little difference between the two groups of teachers on the overall results of the use of process and content standards. Both groups did not use the NCTM process standards frequently. Overall, career switchers did tend to use them more ($M = 1.46$ vs. 1.06), although the means show that both groups demonstrated the behaviors “minimally” to “moderately”. The authors reported that no significance testing was conducted due to the rather small sample sizes. Upon closer analysis of the process standards, the observations indicated that the career switchers tended to use real world situations more frequently than traditional pathway teachers ($M = 1.04$ vs. 0.24), provided opportunities for students to generate data ($M = 0.62$ vs. 0.00), had more remediation and enrichment activities ($M = 2.10$ vs. 1.56) and engaged all students more frequently ($M = 2.06$ vs. 1.64).

Additionally, both groups were very similar in regards to achievement. By the 4th quarter, students were performing equally well in both groups’ classrooms. On the Algebra I SOL test, both groups of students performed equally well, with career switcher students slightly outperforming those of traditional pathway teachers ($M = 450.01$ vs. 444.35). There was, however, a significant difference in the statistics subcategory of the SOL test. The results from the MANOVA ($F = 4.30(1), p = .039$) suggest that teacher training had an influence on student achievement on this portion of the test as students of career switchers outperformed students of traditional pathway teachers. The difference of
the mean scores ($M = 37.47$ vs. $35.68$) and the small effect size ($\eta^2 = .01$) indicate that the difference was not large.

**Summary**

The above literature all examine career switchers and begin to delve into what is occurring in the classroom. The studies provide data on instructional practices and processes, classroom management, use of accomplished practices, student achievement and overall effectiveness. While the Ruffin (2003) study was focused on perceptions of how well prepared career switchers are, the rest of the studies tried to examine what the career switchers were doing in the classroom.

The studies were not all in agreement as to the effectiveness of the career switchers. Owings et al. (2006) reported that principals were extremely satisfied with the level of success of teachers from the Troops to Teachers program as compared to teachers with similar experience. Earley et al. (2005) while noting that their study should not be generalized outside of their context found that their traditional pathway teachers and career switcher teachers were very similar in classroom practice as measured by their instrument based on Florida’s Educator Accomplished Practices. The final study, Gimbert et al. (2007) also found that there were no significant differences between career switchers and traditional pathway teachers. They did find that career switchers did use NCTM process standards more frequently and that their students scored better on the statistics section of the Virginia Algebra I SOL test.

What is missing in the literature is whether students of career switchers perceive any differences in the classroom quality when compared to students of traditional
pathway teachers. Ames (1992) believes that it is important to investigate what students perceive in the classroom. Gentry and Owen (2002) state that assessment of student perceptions can provide valuable insights into what is occurring in the classroom. As a nation, we have been focused on standardized tests as indicators of classroom quality. Perhaps it is time to ask students what they are experiencing in the classroom as another way to locate differences between traditional and alternate pathway teachers.

Classroom Quality

Up to this point in the literature review, the focus has been primarily on teacher preparation. Specifically, the focus has been on career switchers, which is one alternate pathway to teaching. As the purpose of this study is to compare students' perceptions of classroom quality, it is important to now shift the focus to classroom quality. What qualities or constructs make up classroom quality and what ones are important for the purpose of this study?

Gentry and Owen (2004) believe that there are five important constructs to classroom quality. They include appeal, challenge, choice, meaningfulness and academic self-efficacy. Gentry and Owen developed the Student Perception of Classroom Quality (SPOCQ) in order to assess students’ perceptions of the above five constructs. They suggest that these constructs are important educational outcomes that relate to student achievement.

Appeal

Appeal consists of student interest and enjoyment (Gentry & Owen, 2004). Schiefele (1999) describes two forms of interest: personal (or individual) and situational.
Personal interest describes a relatively stable evaluative orientation toward a certain domain or subject. Situational interest is seen as a temporary state that is brought forth by certain actions or features. An example of situational interest is a teacher asking an interest-arousing question (cue or hook) at the beginning of a lesson (Schiefele).

The impact of interest on learning has been a much researched topic over the last several years (Boekaerts & Boscolo, 2002). Schiefele (1999) conducted a meta-analysis of relevant studies on personal and situational interest in relation to text learning. The search was conducted using several databases (PsycLit, ERIC, PSYNDEX) as well as scanning major educational psychology journals and books. There were 22 relevant studies for personal interest and 14 for situational interest. An average correlation of .27 \( (p < .01) \) between text learning and personal interest was found. For situational interest an average correlation of .33 \( (p < .05) \) was found.

Krapp (2005) suggests that interest development depends on the ongoing process of person-object interaction, which means that people may develop interests in certain domains and not others due to exposure to specific objects such as an academic subject. Under certain conditions, this interaction may result in higher situational and personal interest. Hoffman (2000) (as cited in Boekaerts & Boscolo, 2002) argues that the “interestingness” of a learning environment may stimulate both situational and personal interest. Linnenbrink and Pintrich (2002) believe that students who are interested are motivated. They learn and achieve because of their interest in particular content.
**Challenge**

Challenge in the classroom context involves rigor, depth and complexity of content, process, product and audience. Using appropriately challenging curricula with effective instructional methods can substantially enhance learning (Gentry & Owen, 2004). Malone and Lepper (1987) (as cited in Ames, 1992) described challenge as one of the factors that should be embedded in the structure and design of learning tasks. Challenge has traditionally been one focus of gifted education and plays a large role in enrichment activities for all students (Renzulli, 1999).

Linnenbrink and Pintrich (2003) suggest that challenging academic tasks will help to improve student motivation. Student efficacy beliefs develop in part from successfully completing challenging tasks. Students need to be challenged in order to be motivated, as well as to learn new skills and develop expertise. Brophy (200) and Pintrich and Schunk (2002) stress the importance of providing tasks that are within the range of competence of students and that challenge them in appropriate ways. This allows students to use their prior knowledge and expertise. Additionally, it engages students in tasks in which they feel confident and believe that they can complete successfully.

**Choice**

Student choice is related to the motivational construct of self-efficacy (Linnenbrink & Pintrich, 2002). Linnenbrink and Pintrich found that self-efficacy beliefs are positively related to general student achievement as demonstrated by grades. Choice is positively related to self-efficacy. They posit that classroom teachers can increase student self-efficacy (and in turn increase achievement) by developing a variety of
appropriate tasks from which students can choose. Additionally, a variety of assessments such as portfolios, essays and project-based activities can increase self-efficacy.

Pintrich (2003) also suggests that the motivational construct of control beliefs influences student outcomes. The general premise is that students who believe they have more control over their own learning are more likely to do well and achieve at higher levels than those that do not feel that they have control. Perry, Hladkyj, Pekurn, and Pelletier’s (2001) study demonstrated that higher levels of perceived control are positively related to many positive cognitive, motivational and academic achievement outcomes. Ames (1992) also emphasizes perceived control as a factor that should be included in the structure and design of learning tasks.

Self-determination theory (SDT) is another motivational theory that stresses the importance of choice. Deci and Ryan (2000) stress the importance of autonomy in SDT. They stress that one aspect of autonomy is the importance of allowing students some choice and control over what they do in the classroom. This fosters intrinsic motivation, which is directly related to interest.

Meaningfulness

Meaningfulness describes content and methods that are relevant, significant, important, and connected to students (Gentry & Owen, 2004). As far back as Dewey (1916) student motivation has been thought to derive from the meaningfulness of activities related to daily life and society. In today’s environment, the ability to transfer knowledge and skills into the world of work is critical. Renzulli (1999) believes that meaningfulness is increased when content and process is learned within the context of a
real and present problem. A daily challenge that teachers face is placing new content in personally-relevant contexts for students (Nix, Fraser & Ledbetter, 2005).

Meaningfulness is another construct that is related to interest. Mitchell (1993) described situational interest as having two factors: catch and hold. Catch factors “catch” students interest and is thought to stimulate them. Hold factors are thought to empower students by making the content meaningful so that students view it as useful. One example of how a teacher may accomplish this is to emphasize how a mathematics lesson is useful for planning a personal budget.

Other motivational theories discuss meaningfulness. Linnenbrink and Pintrich (2003), when discussing motivational engagement, define utility value as how useful students believe the content or task is to them. They suggest that real world applications increase utility value which increases motivational engagement. And Ames (1992), when discussing mastery goals, states that students will be more likely to be engaged in activities when they perceive them as meaningful and personally relevant.

**Academic Self-efficacy**

Academic self-efficacy is defined as subjective beliefs that one can successfully carry out given academic tasks at designated levels and is one of the more important motivational beliefs for academic achievement (Schunk, 1991; Linnenbrink & Pintrich, 2002). There are two decades of research that clearly establish the validity of self-efficacy as a predictor of students’ motivation and learning (Zimmerman, 2000).

There are several factors that influence how a person appraises his or her efficacy. They include performance accomplishments, observational experiences, forms of
persuasion and physiological indexes (Bandura, 1986). Students’ belief in their efficacy can influence their actions a great deal. Self-efficacy illustrates that people exercise influence over what they do. It can influence the course of action they choose to pursue, how much effort they will put forth, how long they will persevere in the face of difficulties, their resiliency to adversity, how much stress they experience when handling difficult situations and the level of accomplishments they will achieve (Bandura, 1997).

Students who have more positive self-efficacy beliefs (believe they can do a task) are more likely to work harder, persist and ultimately achieve at higher levels (Linnenbrink & Pintrich). Students that feel efficacious about learning are likely to work harder when faced with difficulty (Schunk & Zimmerman, 2006). Students who have a low sense of efficacy for completing a task may avoid it, while those who believe they are capable should readily participate in the task (Schunk, 1991). It is important to note that self-efficacy is a specific construct tied to academic achievement, unlike more global constructs like self-esteem that have little direct benefit on academic achievement (Urdan & Schoenfelder, 2006; Bandura, 1997).

Bandura (1986) felt that self-efficacy judgments are influenced by three environmental factors: past success and failure with similar tasks, available social comparison information, and verbal persuasion. Teachers can influence all three of these factors. Teachers can provide genuine opportunities for students to experience academic success which will help to positively influence the most important factor: past performance. Teachers can also point to other students who model specific learning strategies or they can model the strategy themselves in order to provide a social
comparison and to encourage students. Finally, teachers can persuade students by explaining that they have the necessary skills and will be successful if they try (Urdan & Schoenfelder).

_Construct Summary_

By their nature, appeal, challenge, choice, meaningfulness and academic self-efficacy are important to student learning. All of these constructs have ties to the literature on student motivation which has long established connections to classroom performance. Intuitively, we would all like our students to be in classrooms that are interesting to them and in which they enjoy being; and ones that provide choices of appropriately challenging activities that are related to their lives and the real world. We also want our students to have the mindset that they can be successful. Teachers are able to control many of these constructs through the activities, methods, strategies and materials that they use.

_Summary_

Teachers are now able to enter the profession through a traditional college or university teacher preparation program as well as one of approximately 485 alternate pathways. While the debate over the effectiveness of traditional pathway versus alternately prepared teachers has existed since the inception of alternate pathways, it has recently shifted focus. As shown in this review, researchers are now focusing on improving all teacher preparation pathways in order to put quality teachers in the classroom.
Alternate pathways have been an oft debated topic that has had a great deal of literature dedicated to it. This review attempts to focus on career switchers, one of many alternate pathways. This review demonstrates that in spite of the volume on alternate pathways in general, it is difficult to find empirical studies that discuss career switchers. The above studies that have compared career switchers to traditional pathway teachers have been examined in order to gain an understanding of their differences, with an emphasis on what teachers are actually doing in the classroom.

Finally, this review examined the Student Perception of Classroom Quality (SPOCQ), an instrument that attempts to measure students’ perceptions of appeal, challenge, choice, meaningfulness and academic self-efficacy. These constructs have all been connected to student achievement and teachers can influence them within their classrooms. This review found a lack of evidence in how students perceive differences between career switchers and traditional pathway teachers. The SPOCQ measures students’ perceptions of these concepts and should provide some insight into what teachers may be doing differently in their classrooms.

The research questions that will direct this study are:

1. Do students of career switcher teachers perceive higher levels of appeal in their classroom than students of traditional pathway teachers?

2. Do students of career switcher teachers perceive higher levels of challenge in their classroom than students of traditional pathway teachers?

3. Do students of career switcher teachers perceive higher levels of choice in their classroom than students of traditional pathway teachers?
4. Do students of career switcher teachers perceive higher levels of meaningfulness in their classroom than students of traditional pathway teachers?

5. Do students of career switcher teachers perceive higher levels of academic self-efficacy in their classroom than students of traditional pathway teachers?

6. Do career switcher teachers plan their instruction differently than traditional pathway teachers?
3. Methods

The purpose of this study is to determine whether students of teachers who are career switchers perceive a difference in classroom quality when compared to students taught by teachers who are from a traditional pathway. This study also investigates whether career switcher teachers plan their instruction differently than traditional pathway teachers.

There are numerous pathways for teachers to enter the classroom. In addition to traditional college and university teacher preparation programs, there are over 485 alternate pathways to a teacher license in the United States (Feistritzer, 2007). The present study will focus on the career switcher pathway. The training that these teachers receive may lead to differences in instruction in their classrooms. Students’ perceptions of these differences may provide valuable insight into improving their educational opportunities (Gentry & Springer, 2002).

The research questions that will guide this study are:

1. Do students of career switcher teachers perceive higher levels of appeal in their classroom than students of traditional pathway teachers?

2. Do students of career switcher teachers perceive higher levels of challenge in their classroom than students of traditional pathway teachers?
3. Do students of career switcher teachers perceive higher levels of choice in their classroom than students of traditional pathway teachers?

4. Do students of career switcher teachers perceive higher levels of meaningfulness in their classroom than students of traditional pathway teachers?

5. Do students of career switcher teachers perceive higher levels of academic self-efficacy in their classroom than students of traditional pathway teachers?

6. Do career switcher teachers plan their instruction differently than traditional pathway teachers?

To answer these questions, a mixed methods design was used to compare students’ perceptions of teacher quality as defined by the Student Perception of Classroom Quality (SPOCQ), which was designed by Gentry and Owen (2004). Students will be surveyed using the SPOCQ while teachers completed a survey and also be interviewed.

The Setting

A convenience sample of high school students (grades 9 through 12) in a mid-Atlantic state participated in the study. Central High School is a suburban school with a diverse student population. Students were surveyed using the Student Perceptions of Classroom Quality (SPOCQ) (Gentry & Owen, 2004) (Appendix A). Teachers were surveyed using the Teacher Experience Survey (TES) (Appendix B), designed for the present study, and were also interviewed regarding instructional planning using the Teacher Interview Guide (TIG) which was also designed for the present study (Appendix C).
Participants

Central High School has a total of 1802 students and 155 licensed teachers. Two groups of students were examined. Group CS consisted of students taught by career switchers, while Group TP students were taught by traditional pathway teachers. The teachers were also divided into two groups. Group CS was the group of career switchers, and Group TP was the group of traditional pathway teachers.

Students. Both groups of students were similar, but not randomly assigned. Both groups contained students enrolled in honors level classes and regular level classes. Honors level classes, according to the Central High School Course Catalog, differ from regular level classes in that the instructional objectives are covered more in-depth and require greater use of abstract and higher level thinking skills. Students are expected to work more independently and undertake research and writing projects of a more rigorous and sophisticated nature than those required in a regular class. Both honors and regular level classes may contain students in grades 9 through 12 even if there is a grade level designation for the class (i.e. an English 11 class could have students in grades other than 11th enrolled in it). Please see Table 1 for the demographics of Central High School, Group CS and Group TP.
Table 1

Demographics of Central High School, Group I and Group II

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Central High</th>
<th>Group CS</th>
<th>Group TP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>No. of Students</td>
<td>1802</td>
<td>100</td>
<td>141</td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>943</td>
<td>51</td>
<td>88</td>
</tr>
<tr>
<td>Hispanic/Non-White</td>
<td>470</td>
<td>27</td>
<td>23</td>
</tr>
<tr>
<td>African-American</td>
<td>290</td>
<td>16</td>
<td>21</td>
</tr>
<tr>
<td>Other</td>
<td>99</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Male</td>
<td>911</td>
<td>52</td>
<td>66</td>
</tr>
<tr>
<td>Female</td>
<td>891</td>
<td>48</td>
<td>75</td>
</tr>
<tr>
<td>Grade 9</td>
<td>563</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>Grade 10</td>
<td>440</td>
<td>24</td>
<td>37</td>
</tr>
<tr>
<td>Grade 11</td>
<td>381</td>
<td>22</td>
<td>94</td>
</tr>
<tr>
<td>Grade 12</td>
<td>417</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>Algebra II-Regular</td>
<td>181</td>
<td>11</td>
<td>26</td>
</tr>
<tr>
<td>Biology-Regular</td>
<td>297</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>Chemistry-Honors</td>
<td>98</td>
<td>6</td>
<td>39</td>
</tr>
<tr>
<td>English 11-Honors</td>
<td>109</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>English 11-Regular</td>
<td>252</td>
<td>15</td>
<td>12</td>
</tr>
</tbody>
</table>
Teachers. There were two categories of teachers participating in this study. The first group of four teachers was composed of career-switchers and is labeled Group CS. Of the four teachers, three came to teaching through different alternate routes. Teacher CS1 returned to college after working almost four years in the restaurant and retail businesses. He then earned a degree in mathematics. This involved minimal education classes and a student teaching placement in order to earn a state credential. Teacher CS2 was traditionally trained, but returned to college to earn a nursing degree and worked in this field for 15 years. Teacher CS3 was a former military officer and entered teaching through the Virginia Career Switcher Program. Teacher CS4 worked in advertising for 8 years prior to taking enough graduate classes to earn a provisional license to teach English. This group of teachers had a minimum of 4 years teaching experience, a maximum of 12 years, and a mean of 8.5 years ($SD = 3.2$). One teacher was a chemistry teacher, one was a biology teacher, one taught algebra II and one taught English 11. Group CS ($n = 4$) consisted of 3 female teachers and one male teacher. All teachers were white.

The second group consisted of 4 traditional pathway teachers and is labeled Group TP. The minimum number of years of teaching experience was 5 and the most experienced in this group had 15 years of experience. The mean was 8.5 years of experience ($SD = 3.8$). One teacher was a chemistry teacher, one was a biology teacher, one taught algebra II and one taught English 11. Group TP ($n = 4$) consisted of 2 female teachers and 2 male teachers. All teachers were white.
Measures

Three measures were used for this study. The SPOCQ was used to measure student perceptions of classroom quality. The Teacher Experience Survey (TES) and the Teacher Interview Guide (TIG) were both developed for this study. The TES provided demographic information and work experience, while the TIG was primarily focused on instructional planning.

Instruments

Three instruments were used to collect data. The Student Perception of Classroom Quality (SPOCQ) was used to collect student data. Teacher data was collected using the Teacher Experience Survey (TES) and the Teacher Interview Guide (TIG).

Student Perceptions. Students completed the Student Perception of Classroom Quality (SPOCQ) that measures five constructs that relate to their perception of their teacher’s quality. The SPOCQ is a 38 item survey that utilizes a 5-point Likert response scale (with responses ranging from strongly disagree to strongly agree). The survey measures the constructs of appeal, challenge, choice, meaningfulness and academic self-efficacy. A copy of the instrument is provided in Appendix A (Gentry & Owen, 2004).

The SPOCQ was normed using a nationwide sample of students in grades 7 through 12 ($n = 7,411$). The sample included students in 26 schools (12 middle schools and 14 high schools) in 7 states (Connecticut, Florida, Michigan, Minnesota, New York, Texas and Wisconsin). The schools were from rural, suburban and urban areas (Gentry & Owen, 2004).
The SPOCQ consists of thirty-eight items divided among five constructs: Appeal, Challenge, Choice, Meaningfulness and Academic Self-efficacy. The constructs Appeal, Challenge, and Choice each contain seven items. An example of an item in Appeal is “I look forward to learning new things in this class.” An example of Challenge is “I like the way my teacher challenges me in this class.” One example from Choice is “I am given lots of choices in my class.”

The construct Meaningfulness has five items. An example is “In my class I explore real issues that affect the world around me.” The construct Academic Self-efficacy consists of eight items. One example is “I am good at answering questions in this class.” The SPOCQ also contained four attribute items. An example is “I plan to go to college.” These attribute items were not analyzed in the present study.

The reliability for the SPOCQ is high. Reliability of the constructs were appeal $\alpha = .85$, challenge $\alpha = .81$, choice $\alpha = .81$, meaningfulness $\alpha = .81$ and self-efficacy $\alpha = .82$. The validity for the SPOCQ is also high with a Bentler’s Comparative Fit Index (CFI) = .997 and root mean square error of approximation (RMSEA) = .051 (Gentry & Owen, 2004).

Teacher Data. To learn more about the participants, the teacher participants completed the Teacher Experience Survey (TES) which explored their teacher education pathway and work experience. This instrument was designed by the researcher and was piloted in December 2007 with a two teachers (one career switcher and one traditional pathway teacher) (Appendix B). In April 2008, the researcher interviewed the teacher
participants to discuss instructional planning using the Teacher Interview Guide (TIG) (Appendix C).

Procedures

Separate procedures were used to collect student and teacher data. Students were surveyed while teachers completed a survey and were interviewed. The researcher was responsible for collecting all data.

Students

A one-time survey administration of the SPOCQ was conducted in the classroom of each participating teacher in this study. The researcher administered the survey to the individual classes. Student assent and parent consent was obtained prior to collecting the data. The confidentiality of the students’ responses was stressed. Students were identified by a number that only the researcher was able to link to the student. The surveys were administered in May, 2008.

Teachers

Teachers were asked to complete the demographic survey (TES) prior to their students completing the SPOCQ. Interviews were scheduled at the teacher’s convenience. The TIG was used to direct the interview. The researcher took notes during the interview and also audio taped the interviews to provide an accuracy check to the notes taken during the interview. A member check was also conducted for all quotes used. Teacher consent was collected prior to conducting the surveys and confidentiality was be emphasized.
Data Analysis

The data analyzed consisted of student data and teacher data. The first five research questions were answered using the student data. Research Question 6 was answered based on the teacher data.

Student Data

Descriptive statistics on the item scores were run for the SPOCQ. Additionally, one-way analyses of variance (ANOVA) were run comparing Group CS to Group TP on the five subscales: appeal, challenge, choice, meaningfulness and academic self-efficacy using the Statistical Package for Social Sciences version 16.0. SPSS treats nonresponses as missing data and adjusts accordingly.

Teacher Data

The TES and teacher interviews were analyzed using content analysis. Specifically, Weiss’s (1994) method of issue-focused analysis provided the framework for examining these data. This method of analysis consisted of four distinct processes: coding, sorting, local integration and inclusive integration (Weiss). For the purposes of this study, Research Question 6, “Do career switcher teachers plan their instruction differently than traditional pathway teachers,” provided the issues that were examined by the issue-focused analysis.

The purpose of coding, according to Weiss (1994) is to “…link what the respondent says in his or her interview to the concepts and categories that will appear in the report.” The teachers’ written responses to the TES and the notes from the interviews
were hand coded. These data were then sorted into excerpt files based upon the appropriate interview question.

Once sorted, the next step entailed summarizing common excerpt files around the interview question and their variances from this central theme. This local integration of the excerpt files provided a summary of what the data tell the researcher. Then, through inclusive integration, these separate themes were tied together into a single coherent story (Weiss, 1994). The main lines and their variants were integrated into a framework that highlighted four common themes. Participants were provided copies of their quotes in order to conduct a member check. All members were able to provide feedback. The member checks provided verification that the quotes used were accurate in both content and meaning.
4. Results

The purpose of this study is to determine if students of teachers who are career switchers perceive differences in classroom qualities when compared to students taught by teachers who are traditional pathway. Additionally, this study investigates whether career switchers report that they plan instruction differently than traditional pathway teachers. The focus of this study is on the career switcher pathway, which is one of the over 485 alternate pathways to teacher licensure (Feistritzer, 2007). As alternate pathways have gained popularity and appear to be permanent fixtures in teacher preparation, it is important to understand the effects of pathways on classroom instruction.

The research questions that guided this study are:

1. Do students of career switcher teachers perceive higher levels of appeal in their classroom than students of traditional pathway teachers?

2. Do students of career switcher teachers perceive higher levels of challenge in their classroom than students of traditional pathway teachers?

3. Do students of career switcher teachers perceive higher levels of choice in their classroom than students of traditional pathway teachers?

4. Do students of career switcher teachers perceive higher levels of meaningfulness in their classroom than students of traditional pathway teachers?
5. Do students of career switcher teachers perceive higher levels of academic self-efficacy in their classroom than students of traditional pathway teachers?

6. Do career switcher teachers plan their instruction differently than traditional pathway teachers?

To answer these questions, a mixed methods design was used to compare students’ perceptions of teacher quality as defined by the Student Perception of Classroom Quality (SPOCQ), which was designed by Gentry and Owen (2004). The SPOCQ measured student perceptions on five constructs of classroom quality: appeal, challenge, choice, meaningfulness and academic self-efficacy. Additionally, the classroom teachers were surveyed using the Teacher Experience Survey (TES) and then interviewed regarding instructional planning using the Teacher Interview Guide (TIG). Both the TES and the TIG were designed for the present study.

Correlations were run on the student data and no multicollinearity was found among the constructs. These data are consistent with Gentry and Owens (2004) which indicate that there are five separate constructs within the SPOCQ.

Quantitative Results

In order to answer Research Question 1, “do students of career switcher teachers perceive higher levels of appeal in their classroom than students of traditional pathway teachers?” a one-way analysis of variance was conducted comparing the means of the students’ ratings of the construct Appeal on the SPOCQ. The means for the traditional pathway teachers (\( M = 3.32, SD = 0.67 \)) was larger than the means for career switcher teachers (\( M = 3.04, SD = 0.80 \)) (see Table 2 for descriptive statistics for Appeal).
On the Appeal measure, the analysis reveals a statistically significant difference on the students’ ratings favoring the traditional pathway teachers over career switcher teachers, $F(1, 252) = 8.94, p < .01$. The effect size was calculated using Partial Eta Squared and equaled 0.03 (see Table 2 for ANOVA test results for Appeal). These results indicate that the students of traditional pathway teachers believed their teachers provide statistically significant more appeal as an indicator of classroom quality, as measured by the SPOCQ.

Table 2

*Descriptive Statistics and ANOVA Test Results for SPOCQ*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Traditional Pathway</th>
<th>Career Switcher</th>
<th>$F$</th>
<th>$p$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appeal</td>
<td>$M = 3.32$, $SD = 0.67$</td>
<td>$M = 3.04$, $SD = 0.80$</td>
<td>8.94</td>
<td>&lt; .01</td>
<td>0.03</td>
</tr>
<tr>
<td>Challenge</td>
<td>$M = 3.82$, $SD = 0.56$</td>
<td>$M = 3.50$, $SD = 0.63$</td>
<td>17.34</td>
<td>&lt; .01</td>
<td>0.07</td>
</tr>
<tr>
<td>Choice</td>
<td>$M = 3.83$, $SD = 0.56$</td>
<td>$M = 3.65$, $SD = 0.65$</td>
<td>5.97</td>
<td>.015</td>
<td>0.02</td>
</tr>
<tr>
<td>Meaningfulness</td>
<td>$M = 3.89$, $SD = 0.65$</td>
<td>$M = 3.44$, $SD = 0.94$</td>
<td>18.30</td>
<td>&lt; .01</td>
<td>0.07</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>$M = 3.71$, $SD = 0.63$</td>
<td>$M = 3.57$, $SD = 0.70$</td>
<td>3.01</td>
<td>.084</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Research Question 2, “do students of career switcher teachers perceive higher levels of challenge in their classroom than students of traditional pathway teachers?” was answered using a one-way analysis of variance comparing the means of students’ ratings of the construct Challenge on the SPOCQ. The means for the traditional pathway teachers
\( M = 3.82, SD = 0.56 \) was greater than the means for career switcher teachers \( M = 3.50, SD = .63 \) (see Table 2 for descriptive statistics for Challenge).

On the Challenge measure, the analysis shows a statistically significant difference on the students’ ratings of traditional pathway teachers over career switcher teachers, \( F(1, 250) = 17.34, \ p < .01 \). The effect size was calculated using Partial Eta Squared and equaled 0.07 (see Table 2 for ANOVA test results for Challenge). These results indicate that the students of traditional pathway teachers believe their teachers provide statistically significant more challenge as an indicator of classroom quality, as measured by the SPOCQ.

Research Question 3, “do students of career switcher teachers perceive higher levels of choice in their classroom than students of traditional pathway teachers?” was answered using a one-way analysis of variance comparing the means of the students’ responses on the construct Choice on the SPOCQ. The means for traditional pathway teachers \( M = 3.83, SD = 0.56 \) was larger than the means for career switchers \( M = 3.65, SD = 0.65 \) (see Table 2 for descriptive statistics for Choice).

On the Choice measure, the analysis reveals a statistically significant difference favoring the students’ ratings of traditional pathway teachers over career switcher teachers, \( F(1, 252) = 5.97, \ p = .015 \). The effect size was calculated using Partial Eta Squared and equaled 0.02 (see Table 2 for ANOVA test results for Choice). These results indicate that the students of traditional pathway teachers believe their teachers provide statistically significant more choice as an indicator of classroom quality, as measured by the SPOCQ.
To answer Research Question 4, “do students of career switcher teachers perceive higher levels of meaningfulness in their classroom than students of traditional pathway teachers?” a one-way analysis of variance was conducted comparing the means of the students’ ratings of the construct Meaningfulness on the SPOCQ. The means for the traditional pathway teachers ($M = 3.89$, $SD = 0.65$) was larger than the means for career switcher teachers ($M = 3.44$, $SD = 0.94$) (see Table 2 for descriptive statistics for Meaningfulness).

On the Meaningfulness measure, the analysis reveals a statistically significant difference on the students’ ratings favoring the traditional pathway teachers over career switcher teachers, $F(1, 252) = 18.30, p < .01$. The effect size was calculated using Partial Eta Squared and equaled 0.07 (see Table 2 for ANOVA test results for Meaningfulness). These results indicate that the students of traditional pathway teachers believe their teachers provide statistically significant more meaningfulness as an indicator of classroom quality, as measured by the SPOCQ.

Research Question 5, “do students of career switcher teachers perceive higher levels of academic self-efficacy in their classroom than students of traditional pathway teachers?” was answered using a one-way analysis of variance comparing the means of the students’ responses on the construct Academic Self-efficacy on the SPOCQ. The means for traditional pathway teachers ($M = 3.71$, $SD = 0.63$) was larger than the means for career switchers ($M = 3.57$, $SD = 0.70$) (see Table 2 for descriptive statistics for Academic Self-efficacy).
On the Academic Self-efficacy measure, the analysis reveals no statistically significant difference favoring the students’ ratings of traditional pathway teachers over career switcher teachers, \( F(1, 252) = 3.01, p = .084 \). The effect size was calculated using Partial Eta Squared and equaled 0.01 (see Table 2 for ANOVA test results for Academic Self-efficacy). These results indicate that there is not a statistically significant difference in the amount of academic self-efficacy students of traditional pathway teachers report as compared to students of career switcher teachers, as measured by the SPOCQ.

The effect sizes for Appeal, Challenge, Choice and Meaningfulness may not be practically significant. Cohen (1988) states that an effect size (\( ES \)) of 0 indicates no effect of treatment, \( ES = .20 \) indicates a small effect, \( ES = .50 \) indicates a medium effect and an \( ES = .80 \) and higher indicates a large effect of treatment. The effect sizes for Appeal, Challenge, Choice and Meaningfulness ranged from .03 to .07, which indicates very little effect of treatment.

**Qualitative Results**

The Teacher Interview Guide (TIG) was designed in an attempt to determine whether traditional pathway teachers approached their instructional practices differently than career switchers. The interview questions focused on lesson planning, assessments and professional development in order to answer Research Question 6, “Do career switcher teachers plan their instruction differently than traditional pathway teachers,” and add depth to the quantitative analysis (see Appendix C for Teacher Interview Guide). Each teacher was interviewed individually. Each interview lasted approximately 30
minutes and was conducted by the researcher during the teachers’ planning time or after school. The researcher audiotaped and took notes during each interview.

The interview data were analyzed using issued focus-analysis (Weiss, 1994). This method of analysis consisted of four distinct processes: coding, sorting, local integration and inclusive integration. Coding was used to link what a respondent says to the concepts and categories that appear in the report (Weiss). The notes from the interviews were hand coded. Each transcript was coded and then these excerpts were transferred to separate files.

The next step in the process was local integration which involved developing a summary of what the excerpt files and their codings tell the researcher (Weiss, 1994). The excerpt files were summarized into “main lines” and their variants. Finally, inclusive integration formulated a single coherent story from the local integration. The main lines and their variants were integrated into a framework that highlights four common themes.

Interview Question #1: Please describe your route to teacher licensure. Was it traditional (four or five year college degree) or did you seek an alternate route? If you came through an alternate route, please describe it.

Interview Question 1 was used to develop trust and rapport with the teacher interviewee and to provide background information. In the following presentation of the interview data, the teachers are denoted by two initials and a number with ‘TP’ signifying a traditional pathway teacher while ‘CS’ is a career switcher teacher.

TP1: I followed a traditional route. I earned my college degree in English first and then in math.
TP2: I started as a physical therapy major, but switched to science teaching [while an undergraduate]. It was a traditional teaching program.

TP3: [Mine was a] traditional route. I was a chemistry major with education added. It took me four plus years for student teaching and education classes.

TP4: Traditional. I went to ODU and was in the four year teaching program.

CS1: I earned my bachelor’s in communications first and when I graduated I couldn’t find a job in my major. I graduated four years later with a degree in mathematics…I think I only took four education classes. I had a CQ, which is a certificate of qualifications which you need to get a license in New York.

CS2: I started in a traditional program. When I finished, there were no teaching jobs so I went into nursing. I worked in multiple hospitals, did home care and was a pediatric nurse. I earned my masters and then worked at the University of Michigan. I was there eleven years…and then went back to teaching.

CS3: I am ex-military… I … [took an] alternate route from being a professional engineer. I did Virginia’s Career Switcher program.

CS4: Alternate route. I was in the corporate world and then took graduate classes to get a provisional certificate.

Interview Question #2: When you plan your lessons, where do you get the material you intend to teach? Probe: Do you use materials not in the text? Thinking specifically of these materials, how do you decide what to use?

The responses to Interview Question 2 suggested that there were similarities and differences in how traditional pathway and alternately prepared teachers plan their
They were similar in that both groups tended to supplement their textbook materials with various outside resources. Some examples of the similarities are found in the following quotes from both groups.

TP1: My first three years I created almost everything and still use it. I adjust from year to year. I develop all of my own tests.

TP2: I get materials from everywhere-the Internet, other teachers, government sites such as the United States Geological Survey [and] canned lesson plans.

TP3: Most [of my materials] are from my knowledge and personal experience.

TP4: …often I get material from other sources….supplemental materials, or materials I had in college or what I have read. They’re more interesting…the stories are better.

CS1: There’s not enough problems [in the text]. [I use] the Internet…a plethora of things.

CS2: [I look] at the VDOE’s Enhanced Scope and Sequence, Internet, colleagues, bookstores….

CS3: I get things from the Internet…off the shelf chemistry practice books [and] the state’s Enhanced Scope and Sequence.

CS4: I get them from other teachers, books, the Internet and the rest I make on my own. I know what they [students] need to know.

The teachers’ responses differed on the role that the textbook played in their instruction. The traditional pathway teachers did not put as much emphasis on the textbook in their planning process. The career switcher teachers described the textbook as
playing a more primary role in their instructional planning, except for the English teacher. Some of the following quotes demonstrate these differences.

TP1: The text, more than anything else, is just a backup.

TP2: Most [material] is not from the text. I [try to] think what my students can do.

TP3: I use the text as a guide, but use lots of my own stuff. I only use the text for reading and sometimes homework.

TP4: Yes, [most of my stuff] is not in the text. The supplemental materials are more interesting…or the stories are better.

CS1: From the text, past experience…. the text is the starting point.

CS2: We are somewhat mandated to use the texts and materials…things that are approved.

CS3: The majority of my information does come from the text.

CS4: 85% of the time it is not in the text.

Interview Question #3: Do you allow students to have choices with assignments? Describe.

There was one noticeable difference in how student choice was used by different teachers. However, in this instance it was by content areas rather than teacher preparation. The two English teachers (TP4 and CS4) reported that students had choices in their classrooms, while the other teachers [algebra II (TP1 and CS1), biology (TP2 and CS2) and chemistry (TP3 and CS3)] reported that students had little, if any, choice in their classrooms. In the case of student choice, it seemed that the licensure path was less influential than the subject matter discipline.
TP4: Yes, almost every time [they have choices]. Different types of projects, different reading selections and paper topics. I try to hit different learning styles.

CS4: Yes, throughout my class they have choices. Different novels, they decide on their end product for projects… I give them an outline of what needs to be covered. Their semester exams they get essay choices, same with the research paper.

TP 1: Not really. More on how they complete it… in class or at home.

TP2: On assignments, no. On projects, yes.

TP3: Mostly not, except for big projects.

CS1: Sometimes I do…but not really. [It’s] hard to figure out for me how to do it.

CS2: More so now, but nowhere near where I know I need to be with that.

CS3: Rarely.

Interview Question #4: How do you incorporate examples into your lessons? Do you plan them or are they spontaneous?

The responses to Interview Question 4 demonstrated that both groups of teachers used examples in class that were planned and spontaneous. Teacher TP1 made no mention of planning examples into his lesson. Two career switcher teachers (CS3 and CS4) tended to rely more on planned examples than spontaneous ones. The following quotes demonstrate these distinctions.

TP1: In class, they come off the top of my head. I’ve done it enough to know what to do.

TP2: I’ll do both. Discussions usually lead to examples off the top of my head.
TP3: Demonstrations are planned ahead of time. The rest are pretty much spur of the moment.

TP4: Both. Projects I usually need to model a good example, so those are planned. But during class discussion they are almost always spontaneous.

CS1: Some of both. With algebra II, I am more comfortable and do them on the fly. Board examples tend to be planned.

CS2: Both planned and unplanned. I try to use real life examples…and everyday life. Many of them come from student questions or their experience.

CS3: Most are planned directly in. Still, a large amount come from [student] questions and [is] student driven.

CS4: They are generally planned into the lesson because it is usually something I want them to write about. I’ll use student examples a lot.

Interview Question #5: Do you use “real world” examples with your students? Probe: Where do you get them? Describe some examples.

The teachers’ replies to Interview Question 5 indicated that both groups made an effort to include real world examples into their lessons. The responses of several of the teachers were similar in that this may not be a strength area for them. Five of the teachers indicated that real world examples are not used frequently.

TP1: Occasionally, I’ll do things like an informal survey using heights, shoe sizes…as examples.

TP2: I do use some personal experience to make connections [to the world of work]…it is kind of hard to relate.
TP3: I use as many as possible. I like to know how things work. I joke with them that I want to ruin their lives by making them look at everything around them and make them wonder about the science involved in it.

TP4: In some instances I try [to use real world examples]. Yes, I do [make connections to the world of work] with writing, but not with reading.

CS1: The organization is hard. I try a lot of examples that have to do with applications…like an engineer. It’s hard because applications are stripped from the SOLs.

CS2: [Real life] is always a big question in class. Wouldn’t you like to know this if you are a parent? You need to make decisions…oil, growing food for energy, big cars.

CS3: Not enough. It’s something I need to work on. Much of the real world is chemistry. I do labs and demonstrations with some of that but not much about my career because it wasn’t chemistry based.

CS4: I use real world examples all of the time. I think it is one of my greatest strengths.

There was also a noticeable difference among four of the teachers. Two of the traditional pathway teachers (TP1 and TP2) both indicated that their real world examples usually came from their textbook. This is in contrast to CS1 and CS2, as they reported that they relied on their prior work experience for many of their real world examples. The following quotes point to these differences.

TP1: Real world examples are usually from the book.

TP2: My PowerPoints include real life examples from the text.

CS2: I rely on my personal experience [from nursing] a lot.
CS4: I talk about my prior [work] experience. I tell them you need to learn processes. What if your boss asks you to do something you’ve never done before?

Interview Question #6: In your lessons, do you include how the concepts and skills you are teaching are used in the world of work?

Six of the teachers’ responses to Interview Question 6 suggested that they were similar in their struggles to make connections between their content and the world of work. However, two career switcher teachers’ (CS3 and CS4) responses indicated that they differed from the other teachers. Their responses suggested that they connected their content to the world of work frequently.

TP1: It’s tough. Math careers are so specific…actuary, engineers. [There is] not much chance to.

TP2: Some of it. A lot [of what I teach] is cells, so it’s kind of hard to relate.

TP3: I try when I can. It is usually in a general sense…like what they will see in a lab or research like testing medicines.

TP4: Not really, I guess if it comes up on its own. I don’t plan it…I do with writing but not reading.

CS1: Not really. More of their behavior and what that means in the work place. Bosses will be more picky and it isn’t easy to find jobs. There are strict deadlines or you’re fired.

CS2: Quite a bit. I talk to them about my experience from nursing. When we do dissection…I talk about how cadavers are a gift…that someone has donated their body to
help improve science and how important they are to medical research. I translate that to our fetal pigs...that they were once alive....

CS3: Minimally. It is an area that...needs improvement.

CS4: Yes. I do all the time with research, which they hate. I tell them it is important for them to know how to do it. I ask them how are they going to find something if their boss asks them, and how do they know it is a reliable source? They need to be able to translate what they do here to work.

Interview Question #7: What types of assessments do you use? Where do you get them? Can you estimate frequency/percentages of types?

The responses from Interview Question 7 suggested that there were similarities and differences in how the teachers assess their students. They were similar in that both groups used a variety of assessments and that most of the teachers constructed their own assessments. Two of the teachers, TP2 and CS3 differed from the group in that their tests were from the textbook. There were also differences between the teachers as to the types of assessments they use.

TP1: I use a lot of student feedback along with tests, homework and quizzes. I develop my own tests so that they are in language that the students are used to.

TP2: Every chapter has a test [from the textbook] that goes along with it. I also give quizzes, assignments and labs.

TP3: Unit tests, quizzes and informal assessments like warm-ups or little things like that. I make all my own. I have my own question bank from old SOLs.
TP4: I have developed all of the ones I use. I give essays and projects, written assessments, essay tests and multiple choice [test questions].

CS1: All of mine are self or colleague written. I like to write my own and I don’t like pre-made stuff. They don’t get projects…homework, quizzes and tests.

CS2: I am much more into formative assessment. They keep an eco[logy] log, we do station activities, dissection, labs. We do test…unit tests and quizzes. Most of the stuff I come up with myself from a bunch of different sources.

CS3: …Unit tests, progress pop quizzes, labs and independent practice. The basic structure is created by the text…. Labs I get a lot from the Internet. Worksheets I get from everywhere.

CS4: I don’t do a lot of standardized tests. It’s mostly papers, discussions, short quizzes…not a lot of unit tests. Comprehension questions I get from the teacher’s guide, but pretty much everything else I do or draw from other teachers.

Interview Question #8: Do you incorporate state standards in your instruction? Probe: How do they influence what you do in the classroom?

The teachers’ responses to Interview Question 8 suggested that there were some differences and similarities on how state standards affect their instruction. Most of the responses indicated that both groups of teachers felt limited by the standards. There were differences in the responses of both English teachers (TP4 and CS4). Their responses implied that they were not quite as limited by the standards as the other teachers.

TP1: They are the end all be all…in terms of delivery and material taught. No deviation. There’s not a section I taught that was not an SOL standard.
TP2: Unfortunately, more than I should. [The SOLs] push a lot of topics to the background.

TP3: Yes, I incorporate them as best as I can. They made me rush on some things to cover more topics.

TP4: Yes…in my lesson planning and I make sure that I am meeting them. I create a lesson plan first and then go to the standards. I review them to see if I filled them all at the end of the year. They are basic requirements and I want to go beyond them.

CS1: Yes, it is what drives instruction. It has really forced me to cut out a lot.

CS2: We are somewhat mandated. I think it is good for focus, but is a double-edged sword. It does somewhat chain you.

CS3: Yes, I set my unit and daily objectives based on the SOLs. …[They] restrict higher level thinking.

CS4: In English they are pretty basic. I try to incorporate them. If you are reading or writing about a book, then they are pretty much covered.

Interview Question #9: Have you had any professional development in the last three years that you feel has been relevant to your teaching?

The teachers’ responses to Interview Question 9 indicated similarities and differences in what they deemed to be relevant staff development. Both groups were similar in that most teachers did not mention any school- or district-based staff development as being relevant. Teacher TP4 and CS1 were the only ones that mentioned this type of staff development as being relevant. Three of the traditional pathway teachers
mentioned graduate programs as being relevant, while only one career switcher teacher indicated a graduate program as being relevant.

TP1: Yes. I did my master’s within the last three years and am starting my second…workshops, talking with other teachers….

TP2: One of the best was the NEED workshop based on hydropower…I would love to go to another one…it was very beneficial. My masters really opened my eyes.

TP3: The most useful has been my master’s in physics education. It was almost all physics and the physics pedagogy class was the most useful.

TP4: Conferences for English specifically [were useful]. The information on ESOL was beneficial [school-based professional development].

CS1: I’ve had lots of stuff. Smartboard and TI83 training [division- and school-based professional development]…a workshop on motivating the unmotivated, coursework on learning theory…. I like variety.

CS2: The C. Roger Taylor conference I went to was great. [It was] all about differentiation. The conferences I went to on nuclear and water power were really good.

CS3: The forty hour seminar I took in Chemistry was most relevant. Beyond that…taking calculus on my own was useful.

CS4: My master’s program did make me do things differently. I pay more attention to what I teach, how I teach and how the students receive it.

Themes Identified in the Interview Data

Five themes were identified from the interview data. These themes included teachers’ reliance on textbooks, teachers’ selection of examples, the use of State
Standards, content area differences and relevant professional development. Each of these themes are discussed below in detail.

**Theme #1: Teachers’ reliance on textbooks.** Although both groups of teachers supplemented text book materials with outside resources, career switcher teachers tended to rely more heavily on the text. When discussing instructional materials, the traditional pathway teachers tended to stray further from the text book materials. Both groups tended to use outside resources from a variety of sources, but the career switcher teachers reported that the text book provided the starting point for their instructional materials. They used such phrases as “…the text is the starting point” and that “…we are somewhat mandated to use the text….” The traditional pathway teachers referred to the text as “…a backup” and that it is only used for “…reading and sometimes homework.”

When it came to assessments, both groups were similar. Each group had one teacher that relied on the text for assessments. Teachers TP2 and CS3 used the tests provided with the textbook. The rest of the teachers developed their own.

It is important to note that the English teachers’ responses were more similar to each other rather than their teacher preparation group. They both stated that they did not rely on the text a great deal for instructional materials or assessments.

**Theme #2: Teachers’ selection of examples.** When it comes to making connections between the content and how it is used outside school, in the world of work, both groups did attempt to make connections between their content, the real world and the world of work. However, there is a difference in how they developed real world examples.
The two groups of teachers both stated that they attempted to include real world examples in their lessons. They also made efforts to connect their instruction to the world of work although several teachers did state that it was “…kind of hard to relate.” at times. Additionally, Teacher CS2 remarked that “it is an area that…needs improvement.”

The main difference between the groups is shown in Interview Question #5. Two traditional pathway teachers, TP1 and TP2 stated that their examples came from their textbooks. This is in contrast to two of the career switcher teachers, CS2 and CS4 who pulled most of their real world examples from their personal work experience.

Theme #3: Use of State Standards. Implementing state standards were a priority for both groups of teachers. Both groups of teachers were very similar in their responses as to how they incorporate state standards (SOLs). The standards were in the forefront of the instruction in both groups. The SOLs are the “…be all and end all” and “…drive instruction.” Both groups also stated that the standards were limiting as to what they could teach and both groups mentioned that they “push a lot of topics to the background” and that they “…somewhat chain you.”

Theme #4: Content area differences. Differences by subject matter area seem to be as important as the path to licensures. There was a clear contrast in how the English teachers in both groups responded to Interview Questions #2, #3 and #7. They were the only teachers that provided a great deal of choice for their students. Teacher TP4 gave her students choices almost “…every time” and Teacher CS4 echoed her statement as she gives choices “…throughout my class.” The other teachers in both groups offered choices “rarely” or “mostly not.”
Teacher CS4’s responses to Interview Question #2 and #7 was closer to Teacher TP4’s responses than to her group of career switcher teachers. While her group used the textbook materials regularly for instruction and assessments, Teacher CS4 did not use the text “85%” of the time and took “pretty much” most of her assessments from supplemental materials. This was similar to Teacher TP4 who often used materials from “other sources” and who “developed all of the [assessments] I use.”

Theme #5: Relevant professional development. Traditional pathway teachers are more likely to mention graduate programs as being relevant professional development. Three of the traditional pathway teachers responded that graduate programs (master’s level) was a form of professional development that they felt was relevant. This was in contrast to only one career switcher teacher mentioning a graduate program. Teacher TP2 felt that his master’s program “…really opened [his] eyes” while Teacher TP3 responded that his master’s “…was the most useful.” Career switcher teachers were more likely mention conferences and school- or division-based professional development as being relevant.

Summary

The first five research questions were answered by conducting one-way analyses of variance between the SPOCQ construct and teacher preparation. The analyses of Research Questions 1, 2, 3 and 4 all reveal a statistically significant difference on the SPOCQ constructs of Appeal, Challenge, Choice and Meaningfulness favoring traditional pathway teachers over career switchers. That is, the student respondents to the SPOCQ perceived greater amounts of appeal, challenge, choice, and meaningfulness in the
teaching of the traditional pathway teachers. The analysis of Research Question 5 showed no statistically significant difference between the groups of teachers regarding whether there is a difference in the construct Academic Self-efficacy.

Research Question 6 was answered by analyzing teacher responses to the Teacher Interview Guide (TIG). These qualitative data suggest that traditional pathway teachers plan instruction differently than career switcher teachers. Traditional pathway teachers are not as bound to the textbook as career switcher teachers and are more likely to cite graduate programs as relevant professional development.

The analysis of the teacher responses to the TIG revealed five themes. The themes were: although both groups of teachers supplemented textbook materials with outside resources, career switcher teachers reported relying more heavily on the text; both groups of teachers reported that they did attempt to make connections to the real world and the world of work, with career switchers tending to rely on their personal work experience to provide examples; implementing state standards were a priority for both groups of teachers; some differences were more evident by content taught rather than teacher preparation; and traditional pathway teachers were more likely to mention graduate programs as relevant professional development.
5. Conclusions, Discussion and Implications

The purpose of this study is to determine whether the students of teachers who are career switchers perceive a difference in classroom quality when compared to students taught by teachers who learned to teach through traditional, academy-based pathways. This study also investigates whether career switcher teachers plan their instruction differently than traditional pathway teachers. Teachers may enter the classroom through an increasing number of pathways, and the various pathways may influence the quality of the classroom they lead. This study focuses on a comparison of the career switcher pathway with the traditional academy-based pathway. The research questions that guided this study are:

1. Do students of career switcher teachers perceive higher levels of appeal in their classroom than students of traditional pathway teachers?

2. Do students of career switcher teachers perceive higher levels of challenge in their classroom than students of traditional pathway teachers?

3. Do students of career switcher teachers perceive higher levels of choice in their classroom than students of traditional pathway teachers?

4. Do students of career switcher teachers perceive higher levels of meaningfulness in their classroom than students of traditional pathway teachers?
5. Do students of career switcher teachers perceive higher levels of academic self-efficacy in their classroom than students of traditional pathway teachers?

6. Do career switcher teachers plan their instruction differently than traditional pathway teachers?

Summary of Major Findings

The data analysis conducted on the five constructs of the Student Perception of Classroom Quality (SPOCQ) (Appeal, Challenge, Choice, Meaningfulness and Academic Self-efficacy) revealed that four of them, namely Appeal, Challenge, Choice and Meaningfulness, had statistically significant differences based upon the teacher preparation pathway. The construct Academic Self-efficacy did not show a statistically significant difference by pathway.

The effect sizes for Appeal, Challenge, Choice and Meaningfulness may not be practically significant. According to Cohen (1988); an effect size \( ES \) of 0 indicates no effect of treatment, \( ES = .20 \) indicates a small effect, \( ES = .50 \) indicates a medium effect and an \( ES = .80 \) and higher indicates a large effect of treatment. The effect sizes for Appeal, Challenge, Choice and Meaningfulness ranged from .03 to .07, which indicates very little effect of treatment.

The students in the classrooms of teachers who entered teaching through a traditional pathway perceived that their teachers created classroom environments that were more challenging and more meaningful, and that offered more appeal and greater choice than the students in the classrooms of career switcher teachers. The practical
significance of these differences may not be very high because their effect sizes are relatively small.

**Challenge and Meaningfulness**

The findings from the Student Perception of Classroom Quality (SPOCQ), coupled with the teacher interviews, provide new insights into the effects of the teacher education pathway on the quality of classroom instruction. Through that lens we are able to consider how effectively these teachers work with their students. Specifically, the literature on student motivation stresses that appropriately challenging tasks increase both student motivation to learn and engagement with instruction (Linnenbrink & Pintrich, 2003; Pintrich & Schunk, 2002). The results of this study indicated that this group of traditional pathway teachers provided more appropriately challenging tasks for their students. We can speculate their students may be more highly motivated to perform well for these traditional pathway teachers, but that remains an empirical question not examined in the present study.

This speculation can be extended to the construct of meaningfulness. As far back as Dewey (1916), the meaningfulness of school activities, and their relation to daily life and society were linked with student motivation. Ames (1992) states that students’ levels of engagement increase if they feel that activities are meaningful and personally relevant. The results of the SPOCQ indicated that the students of this group of traditional pathway teachers in this study made their content more relevant to their students’ interests. Therefore, their students may theoretically exhibit higher levels of engagement and motivation which increases their likelihood of academic success.
The results from the teacher interviews as reported in interview questions 5 and 6, however, indicated that the four traditional pathway teachers felt that they struggled with making connections between content, the real world and the world of work. In contrast, two of the career switcher teachers reported that they made these connections regularly using their personal work experience. Both groups were similar in their responses regarding the use of real world examples. This finding is in contrast to the Gimbert et al. study of military career switchers. The authors found that the former military career switchers were more proficient at including real world examples in their lessons. This may indicate a difference between former military career switchers’ and nonmilitary career switchers’ ability to make real world connections for their students.

The present study’s findings revealed that the students of traditional pathway teachers actually rated their teachers higher on the measure of Meaningfulness than the teachers themselves. Additionally, the results suggest that the use of personal work experience may not help teachers increase meaningfulness for their students.

*Appeal and Choice*

These two constructs also showed a statistically significant difference between students of traditional pathway teachers and students of career switcher teachers. The results indicated that this group of traditional pathway teachers, from the students’ perspective, made their classes more interesting and enjoyable (which are components of appeal). This group of teachers also gave their students more choices in many elements of the classroom such as daily assignments, readings, projects and assessments. According to Pintrich and colleagues, both of these constructs are associated to student motivation.
(Linnenbrink & Pintrich, 2002; Perry et al., 2001; Pintrich, 2003). If the students in traditional pathway teachers’ classrooms perceive that the class is more interesting and enjoyable, along with offering more choices, then these students theoretically should be more motivated to achieve when compared to the students of career switchers. It is important to note, however, that the effect sizes for these two constructs were small which indicates that the conclusions about the group differences are not as strong as for Challenge and Meaningfulness.

**Academic Self-efficacy**

This construct showed no statistically significant difference in the students’ perceptions of how their teachers fostered their sense of academic self-efficacy. In other words, students of traditional pathway teachers and career switchers were very similar in how they perceived their teacher’s classroom in relation to this construct. Therefore, the results indicated that pathway has little if any influence on students’ perception of how their teachers provide them with confidence in performing important classroom learning behaviors.

**Qualitative Data**

The teachers’ responses to the Teacher Interview Guide (TIG) provided insight into why the students perceive differences between the groups of teachers. The responses to interview questions 2 and 9 were particularly enlightening.

| Interview Question #2: When you plan your lessons, where do you get the material you intend to teach? Probe: Do you use materials not in the text? Thinking specifically of these materials, how do you decide what to use? |
|------------------|--------------------------------------------------|
| Interview Question #9: Have you had any professional development in the last three years that you feel has been relevant to your teaching? |
The traditional pathway teachers’ responses to interview question 2 indicated that they did not rely on the textbook as much as the career switchers did. This may be an important factor as to why the students perceived these classes as having more appeal, challenge, choice and meaningfulness. The group of traditional pathway teachers appeared to have developed a way of customizing their instruction with outside resources that influenced positively how their students perceived their instruction. This customized instruction could impact how students perceive appeal, challenge, choice and meaningfulness in their classroom.

These findings are at odds with the prevailing belief that due to their prior work experience, career switcher teachers should be more effective than traditional pathway teachers at including real world applications in their instruction (Haselkorn & Hammerness, 2008; Humphrey & Wechsler, 2007). Dewey (1916) was one of the earliest educators to suggest that real world applications of academic content would make instruction more relevant for students and that those examples may increase student motivation to learn. The findings in the present study suggest just the opposite: these career switcher teachers reported being more textbook bound than teachers who came through a traditional pathway into the field.

Some insight into how traditional pathway teachers approach their instruction may be gained by the relevance they placed on graduate programs. Three traditional pathway teachers mentioned their master’s level graduate program as being relevant to their teaching, as opposed to only one career switcher teacher. The content of these programs may help to shape how traditional pathway teachers design and present their
instruction. Teachers who complete the traditional pathways may gain a higher level of understanding as to how to plan and implement instruction than their peers who did not mention a master’s program as being relevant professional development.

In sum, the students of traditional pathway teachers perceived that their teachers’ classrooms incorporated more Appeal, Challenge, Choice and Meaningfulness than students of career switcher teachers perceived. The constructs of Challenge and Meaningfulness had medium effect sizes, while Appeal and Choice had small effect sizes. According to extant theory (Linnenbrink & Pintrich, 2002; Pintrich, 2003), the students of traditional pathway teachers may exhibit higher levels of motivation and learning than their peers in classes taught by career switchers because of the classroom environment issues.

Additionally, the qualitative data point to two factors that may account for some of the variation in student perceptions. Traditional pathway teachers were less likely to rely on the textbook and they were more likely to view their master’s program as relevant professional development. These factors may help to explain why their students perceive higher levels of Appeal, Challenge, Choice and Meaningfulness.

Finally, the differences suggested in the present study between career switchers and traditional pathway teachers are not consistent with the Boyd et al. (2006) study of New York City teacher pathways. Boyd et al. found that students of New York City Teaching Fellows first-year teachers (an alternate pathway that targets career-switchers) did not perform as well as students of first-year traditional pathway teachers in middle school math and English/language arts. By the third year, however, students of Teaching
Fellows teachers outperformed students of traditional pathway teachers. The present study suggests that the differences between career switchers and traditional pathway teachers may actually last longer than one year, as the teachers in the present study had at least 4 years of teaching experience.

Limitations

Classroom research studies are difficult to design without several limitations. This study is no exception. The first limitation is that the study relied solely on self-report data from the students and the teachers, even though the independent and dependent variables were objectively coded. There were no observation data that would lend further support to the findings resulting from the self-report data. Additionally, the qualitative data was only triangulated through member checks which will not provide as varied a check as is recommended in the literature (Creswell, 2002). Finally, this study was situated in one school. This limitation restricts the generalizability of the findings and must be taken into consideration when reviewing the results. The analyses and findings of this study are limited to the participants in this study.

Discussion

This study is situated within the current debate revolving around which pathway to teaching is the ‘best’ pathway. As mentioned earlier, the debate seems to be shifting its emphasis to the effects of teacher education programs rather than whether one pathway is better than another. This study investigated the effects of the career switcher pathway as compared to the traditional pathway in relation to what the students in the classroom perceive as classroom quality. The search of literature for the present study indicated a
lack of relevant research on student opinions, views, and perceptions as measures of the effects of teacher pathway.

Due to the small sample size and the fact that this study was situated in only one school division, the results are not generalizable to other settings. However, the results do help to provide another lens through which to examine effective teacher pathways. Investigating classroom quality based on student perceptions is a shift from much of the current research that looks primarily at student achievement when examining pathways by focusing more closely in the students’ perceptions of their teachers’ classrooms.

These quantitative data indicate that there were differences in students’ perceptions of classroom quality between career switchers and traditional pathway teachers. Students of traditional pathway teachers perceived higher degrees of appeal, challenge, choice and meaningfulness as measured by the SPOCQ. This study suggests that there are clearly perceivable differences in classroom environments that appear influenced by the teacher preparation pathway even though the effect sizes for these constructs do not indicate a great deal of practical significance.

The qualitative data collected from the TIG suggested that traditional pathway teachers were not as bound by their textbooks as career switcher teachers. Traditional pathway teachers were more likely to use a variety of instructional materials that vary from their textbooks. By customizing their instructional materials, traditional pathway teachers were customizing instruction in ways that may be discernible to their students. This type of instruction may result in higher student motivation, which is related to increased student achievement (e.g. Linenbrink and Pintrich, 2003). As Boyd et al.
(2006) pointed out, there seems to be a connection between pathway and student achievement. With the current study suggesting a link between pathway and student motivation, one may now be able to connect student motivation and achievement to type of teacher education pathway.

Additionally, the traditional pathway teachers placed a greater emphasis on their master’s degree as a form of professional development. These teachers may place a greater significance on what they learned in their graduate programs and are able to transfer this knowledge to their classroom. It seemed that there may be interactions among traditional pathway teachers, Master’s degrees and student perceptions of classroom quality that need to be explored further. It is reasonable to expect that the students of traditional pathway teachers who pursued a Master’s degree would exhibit higher levels of motivation as well as achievement. These findings suggest that the pathway does matter and that students can perceive clear differences in the classrooms led by teachers who followed a traditional pathway and those who pursued a pathway from another career.

**Implications**

The results of this study point to a number of implications for education. They include providing insight for teacher education pathway providers, informing principal practice, as well as informing teacher practice. One of the most important implications is that this study attempts to provide a non-politicized framework for investigating levels of classroom quality based upon teacher pathway that focuses on the teachers’ classroom
rather than the teacher. This is an area of research that has been somewhat neglected with the advent of high stakes testing.

While some studies have investigated this topic, they were often conducted for policy considerations (Floden, 2001). This creates a politically charged environment, as we have seen with the debate over teacher pathways, teacher effects, and student achievement (Ballou & Podgursky, 2000; Darling-Hammond, 2000; Darling-Hammond et al., 2005; Glazerman et al., 2006; Podgursky, 2005). This study tries to avoid these debates by focusing on improving all pathways rather than rating one as superior to others. Alternate pathways are here to stay, which means we need to build upon the strengths of all of them in order to provide our students with effective teachers. As these findings suggest, the pathway matters when it comes to classroom quality and the students can see it.

*Insight for Teacher Pathway Providers*

This study suggests that students of career switcher teachers did not perceive as much classroom quality, as measured by the SPOCQ, as did students of traditional pathway teachers. Because previous literature (Ames, 1992; Dewey, 1916; Linnenbrink & Pintrich, 2003; Pintrich & Schunk, 2002) has shown that these constructs correlate with learning, we must question the academic environment that career switcher teachers are providing their students, and begin to wonder about the learning that is occurring in those classrooms. This is additionally important as these results indicate that the differences between career switcher teachers and traditional pathway teachers last longer than the three years reported by Boyd et al. (2006).
Additionally, the teacher interview data revealed that career switcher teachers tended to be more tied to their textbook than traditional pathway teachers. One possible implication of this is that career switcher teachers may not have the ability to customize instruction in ways that traditional pathway teachers appear to be able. This reliance on the textbook, instead of utilizing their real world experience, may contribute to why students do not perceive higher levels of classroom quality. Instruction that is developed using a variety of sources and materials may elicit more favorable perceptions from students.

As such, we can speculate that career switcher teachers may not be providing classroom environments that are conducive to learning. This is a cause for concern as there are large numbers of career switchers that are accessing teaching jobs through alternate pathways. Teacher pathway providers must take note of this information and re-evaluate their programs for this group of teachers. Perhaps additional preparation in learning how to use their prior work experiences for planning and delivering instruction could be useful for career switchers.

*Informing Principals’ Practice*

Principals need to be aware of the differences in students’ perceptions of classroom quality for two main reasons. The first is that this is information that may be useful when making hiring decisions. It would appear that if all other things appear equal, and the decision is between hiring a traditional pathway teacher and a career switcher, then these findings suggest the choice should be the traditional pathway teacher. While more research is needed, from these data, it is argued that their students will perceive
higher levels of challenge and meaningfulness, which should positively affect their motivation and which should result in higher levels of achievement (e.g. Linnenbrink and Pintrich, 2003).

Furthermore, this information will give principals other indicators to look for when observing and evaluating all teachers. When observing teachers and reviewing lesson plans, principals should be cognizant of the quality indicators that comprise the SPOCQ. This is important because the constructs of the SPOCQ are related to various facets of student motivation. Increased levels of student motivation are related to increased levels of student achievement (e.g. Linnenbrink and Pintrich, 2003), which is the ultimate goal. In short, the pathway may matter to student achievement more than previously suspected.

Informing Teachers’ Practice

This study should help to remind teachers that quality instruction is more than test results. This is vital in two areas. First and foremost, teachers need to be aware that students’ perceptions are important to the students’ learning. Oftentimes we forget to ask students for their opinions and perceptions. The SPOCQ provides a simple format for polling students regarding classroom quality. This study indicates that this varies based on teacher preparation, but it is likely that it can vary in additional ways such as content, grade level and teacher experience level. More research is needed on the value of the kind of information supplied by the SPOCQ.

Also, it is important to remember that quality instruction will help students to reach quality results. Both groups of teachers reported that state standards have limited
what they teach and that they feel restricted by the standards. Perhaps we are becoming too preoccupied with multiple choice tests being our only measure of student achievement, and in turn, quality instruction. We need to refocus on what quality instruction is, using state standards as our guidelines, but not allow them to severely limit what and how teachers teach. While this study did not seek to examine the link between standards and teachers’ instructional practices, it is reasonable to speculate that career switchers let the standards limit their teaching more in comparison to their traditional pathway peers.

Suggestions for Future Research

There are several areas this study revealed that are in need of further study. The first suggestion is that this study should be replicated with a larger sample size that includes multiple school divisions. This will go beyond the limitations of the present study and speak more generally about pathways regardless of locale. It is important to know whether these findings are idiosyncratic to the school in which this study was conducted. With the increasing number of alternate pathway teachers being hired each year, it is reasonable for school districts and researchers to study the effects of these pathways on teaching and student outcomes.

Another of the shortcomings of the present study is that the interview questions were not tied closely enough to the constructs of the SPOCQ. Prior to this study being replicated, the Teacher Interview Guide (TIG) needs to be rewritten in order to coordinate its questions more closely with the constructs of the SPOCQ. This will add more depth to
the analysis of the student surveys by linking the students’ perceptions to the teachers’ explanations of instructional planning and organization.

In addition to administering the SPOCQ, a measure of student motivation would enhance the findings. Most of the constructs of the SPOCQ have theoretical links to student motivation. It would be enlightening to see if there are any correlations between the SPOCQ and students’ self-ratings of achievement motivation. Also, it may be beneficial to have teachers rate their students’ motivation to provide better triangulation, and even to add in a value-added analysis of student achievement on standards-based tests. In this way, the links between students’ perceptions, teachers’ planning and intentions, students’ motivation to learn and academic achievement would be linked (Galluzzo & Craig, 1990).

The interviews of teachers provided another avenue that is in need of further study. Both groups of teachers responded that the SOLs play a large role in their classrooms. These groups also felt that the SOLs were limiting in what they were able to teach. Now that the standards and their related tests have counted for school accreditation since the 1998-1999 school year, it would be very interesting to study what impact they have had on pedagogy.

Students of traditional pathway teachers perceived that their teachers provided higher levels of meaningfulness in their classrooms. Meaningfulness has been linked to real world applications (Linnenbrink & Pintrich, 2003), which makes this finding counter-intuitive. Because career switchers have real world experience, one would assume that they would be better at using real world examples to increase meaningfulness
for their students. This peculiarity should be examined to determine how to assist career switchers in transferring their practical experience to effective classroom instruction.

Additionally, more research is needed into how students perceive real world examples and their use in the classroom. Specifically, we need to know more about how the use of real world examples influences student motivation. The ability to incorporate personal, real world examples from their previous career is often given as a reason to hire career switcher teachers. Therefore, it is important to determine if students respond positively to their use in the classroom. Students may not want or need real world examples in order to be motivated which would affect how we view career switchers.

Perhaps the most important implications relate to future studies of teacher education pathways. This study indicates that students of traditional pathway teachers perceived higher levels of classroom quality as compared to the levels that students of career switcher teachers perceived. As there is a correlation between the constructs used in this study and student motivation, which in turn is correlated to student achievement, it is important to research these differences in order to determine how they relate to or affect student achievement. Future studies of teacher pathways need to explore the effects of the pathway on their graduates’ classroom quality in order to ensure that the teachers who are being placed in the classroom are perceived by their students as creating effective classroom environments. This information will help pathway providers to develop the best possible programs for their graduates, which will in turn place better prepared teachers in the classroom. Ultimately, this should be the goal of every teacher pathway.
Finally, studies that examine the instructional planning and delivery processes of teachers from different pathways may be able to further explain why students perceive different levels of classroom quality. These studies could help to further explore what traditional pathway teachers are doing that career switchers do not appear to be doing in relation to instruction. Taking what may be strengths that traditional pathways provide and applying them to career switchers will only help to increase their effectiveness. This will help to provide our students with the best possible teachers because we examine more closely the quality of their preparation as skilled practitioners.

Summary

The results of this study indicate that the students of traditional pathway teachers perceived differences in classroom quality as compared to students taught by career switcher teachers as measured by the SPOCQ. Differences were evident in the constructs of Appeal, Challenge, Choice and Meaningfulness. There were no statistically significant differences in Academic Self-efficacy.

These results, coupled with the data collected from the Teacher Interview Guide (TIG), provide new insights into how teacher education pathways affect the quality of classroom instruction. Students of traditional pathway teachers may exhibit higher levels of motivation and learning than students taught by career switchers because of classroom environment factors. The traditional pathway teachers reported that they were less likely to rely on the textbook and that they were more likely to view their master’s program as relevant professional development than their career switcher peers. These responses
begin to help determine what may be occurring differently in the classrooms of the two
groups of teachers.

This study provides a number of implications for education. These include
providing insight for teacher education pathway providers, informing principal practice
and informing teacher practice. The most important implication of this study is to provide
a non-politicized framework for investigating levels of classroom quality based on
teacher pathway. By focusing on classroom quality and improving all pathways rather
than debating which pathway is better, this study attempts to continue the trend in
moving away from past unproductive political arguments surrounding pathways. We
must find ways to prepare our teachers for the challenges of the classroom by
determining the strengths from all pathways and applying these lessons to the preparation
of all teachers.

Finally, as a result of this study, there are several areas that are in need of further
study. These include replicating the study with a larger and broader data set and including
an updated TIG that has questions directly tied to the SPOCQ. A student motivation
measure should also be included in a new study. Further research is also needed on the
affect state standards and high stakes testing has on pedagogy. The use of real world
examples needs to be investigated both to determine if students perceive them as
motivating, and to assist career switchers in transferring their practical experience to the
classroom if they are found to be beneficial. In order to provide the best possible
preparation in all pathways, further research is needed to explore the connection indicated
by this study between pathway and effective classroom environments. This includes investigating instructional planning and delivery processes.

Alternate pathways are here to stay. The goal of future research should be to provide the best teachers for our students. In order to be successful, we must continue to focus on improving all pathways by developing effective programs and continuing to move away from the partisan arguments that have occurred in the past. Our discussions must be framed by determining how we can best prepare all teachers. We owe our students effective, engaging and expert teachers.
Appendix A

Student Perceptions of Classroom Quality (SPOCQ)

We would like to know how you feel about your class activities. Read each statement and show how much you agree with it by filling in the circle. There are no right or wrong answers. Your answers will be kept confidential. Remember to mark an answer for each statement. In the example below, the person agreed that the class was enjoyable. Thank you for your help in this project!

Name/ID: ____________________________
Teacher: ____________________________
School: ______________________________

SUBJECT AREA
(true choose the answer that most closely describes the type of class in which you are completing this survey)
- Math
- Science
- Social Studies
- Language Arts
- Art
- Music
- Other

COMMUNITY
Which type of community best describes your school community?
- Rural
- Urban
- Suburban

GENDER
- Male
- Female

ETHNIC GROUP
- Asian-American
- African-American
- Caucasian
- Hispanic-American
- Native American
- Other

Do you receive any special services from your school district?
- Yes
- No
If yes, what services do you receive:
- Gifted/talented
- English as a second language
- Speech
- Hearing
- Special education-learning disability
- Special education-behavioral services
- Compensatory services
- Other

Example: My class is enjoyable.

1. I am given choices regarding how to show the teacher what I have learned.
2. I’m good at helping other kids understand concepts.
3. I find the contents of my class interesting.
4. I find my class time instruction appropriately challenges my intellectual abilities.
5. My teacher lets me choose the resources I use for projects.
6. When there are different ways to show what I have learned, I can usually pick a good way.
7. The teacher applies the lessons to practical experiences.
8. I find my class assignments a good challenge.
9. The assigned reading material for my class is interesting.
10. My teacher makes connections between the course material and society.

Please continue on the back

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Appendix A continued

<table>
<thead>
<tr>
<th>Side 2</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. I learn best when I am challenged.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>12. I am given lots of choices in my class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>13. In my class my teacher relates current issues to the material we are learning.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>14. I am good at connecting material from this class with the real world.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>15. This class content is an appropriate challenge for me.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>16. I feel responsible for my learning because I am allowed to make choices in my class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>17. The teacher uses a variety of instructional techniques that make this class enjoyable.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>18. I like the challenge of the projects in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>19. The material covered in my textbook is interesting.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>20. The textbook provides examples of how the material relates to society and daily living.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>21. I am good at answering questions in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>22. I am encouraged to pursue subjects that interest me in my class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>23. It is pretty easy for me to earn good grades.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>24. In my class I explore real issues that affect the world around me.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>25. I look forward to learning new things in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>26. I find the reading material for my class a pleasure to read.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>27. I use my critical thinking skills in my class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>28. I'm good at taking tests in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>29. I can relate the material discussed in my class to my daily life.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>30. I can easily understand reading assignments for this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>31. I like going to my class each day.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>32. I can usually discover interesting things to learn about in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>33. I like the way my teacher challenges me in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>34. I can express my opinions clearly in this class.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>35. Good grades are mainly the result of my hard work.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>36. Good grades are mainly the result of my ability.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>37. I can improve my intelligence by working hard.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>38. I plan to go to college.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Appendix B

Teacher Code: ________

TEACHER EXPERIENCE SURVEY

Use the back for additional space if necessary.

1. What is your gender? ___ Male ___ Female

2. How many years of paid K-12 Public Education Teaching Experience (including this school year) do you have?

_______ years

3. How many years of Other Teaching Experience (do not include student teaching experience) do you have? Please describe.

_______ years

4. Did you complete a student teaching or teaching internship experience? If yes, please answer #4a. If no, please skip to #5.
   4a. If yes, how long? ____ weeks

5. What was your major and minor (if any) in college?
   Major: __________________
   Minor: __________________

6. Prior to teaching, but after earning your first degree, did you hold any other jobs? If yes, please answer #7. If no, you are finished.
   _____ yes or no

7. Please describe your work experience. Include how many jobs you had prior to teaching, how long they lasted and the type of job.
Appendix C

TEACHER INTERVIEW GUIDE

1. Please describe your route to teacher licensure. Was it traditional (four or five year college degree) or did you seek an alternate route? If you came through an alternate route, please describe it.

2. When you plan your lessons, where do you get the material you intend to teach? Probe: Do you use materials not in the text? Thinking specifically of these materials, how do you decide what to use?

3. Do you allow students to have choices with assignments? Describe.

4. How do you incorporate examples into your lessons? Do you plan them or are they spontaneous?

5. Do you use “real world” examples with your students? Probe: Where do you get them? Describe some examples.

6. In your lessons, do you include how the concepts and skills you are teaching are used in the world of work?

7. What types of assessments do you use? Where do you get them? Can you estimate frequency/percentages of types?

8. Do you incorporate state standards in your instruction? Probe: How do they influence what you do in the classroom?
REFERENCES
REFERENCES


CURRICULUM VITAE

Eric G. Barna graduated from Medina Senior High School, Medina, New York, in 1983. He received his Bachelor of Arts from Hobart College in 1986 and his Master of Education from Virginia Commonwealth University in 1999. Currently he is employed as an assistant principal with Manassas City Public Schools in Manassas, Virginia.