EATING OUR YOUNG:

A STUDY OF SECONDARY EARLY TEACHER ATTRITION

A DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIRMENTS

FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

DEPARTMENT OF SOCIOLOGY

COLLEGE OF ARTS AND SCIENCES

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DENTON, TEXAS

MAY 2021

DEDICATION

To Sherry: Thank you for always beleiving in me and for encouraging my education early in life. I love you, Mom, and am grateful for your ongoing love, support, care, and encouragement.

To my family: Simply put, thank you for your love and support. You always listened, and believed in me and that was all the support I needed.

To my friends Jamie, John, Amanda, Tanner, Etienne, and Judy B.: Thank you for your support and ongoing willingness to listen and encouragement to finish strong.

ACKNOWLEDGEMENTS

Dr. Yang: Thank you for your continued support and encouragemnt. Without your constant support during hours-long phone discussions and effortful feedback to each submitted draft, I would not have been successful. Thank you for the growth you have provoked within me. I have learned tremendously from you. I wish you well as you continue to publish and shape sociological minds.

To Dr. Sadri: Thank you for your thought-provoking pedegogy and for cultivating my interest in sociological theory. I will continue to draw from my experiences in your courses as I embark on next steps in my own sociological work. Thank you for your feedback, as your input has made this a better study. I wish you the best in your current and future work.

To Dr. Wickstrom: You volunteered to put in extra time and effort to work with me and I am so grateful you remained willing. Your perspective has made this process and study better. I wish you all the best in your own academic pursuits.

ABSTRACT

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MAY 2021

Early teacher attrition has been a problem for American secondary schools for decades. With raising student enrollment and high fiscal costs to train new teachers, determining value-added approaches to secondary early teacher retention is critical for schools to ensure a quality workforce and enhance student achievement. This study examines the determinants of secondary, early teacher attrition in the United States. It develops a holistic, sociological framework termed constrcutivist community of professionalized praxis to explain secondary, early teacher attrition. Using data from the Begginning Teacher Longitudinal Study (BTLS) and event history analysis with Cox regression models, this study tests hypotheses related to the effects of teacher characteristics, teacher support and relations, teacher preparation and developemnt, percieved work environment, school contexts, and student variables on early teacher attrition. The results show that, overall, 10.1 percent of teachers left teaching, while about 90 percent remained. Covariates that significantly influence the likelihood of secondary early teachers' exit from the teaching profession include certifiacation type, teacher preparation, induction, content autonomy, and reduced enthusiasim. The findings have significant implications for research on early teacher attrition, theoretical framework on early teacher attrition, and practices.

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CHAPTER I

INTRODUCTION

Cronos, fearing for his future after learning of a prophecy that his children will overthrow and bring him to ruination, devours his offspring, caging them inside of him for perpetuity—or, rather, until the mechanisms of social evolution, and a bit of trickery, circumvented Cronos, the obstruction to mythical social development. Or perhaps one considers Dublin under English rule in the 18th century: with the number of Dubliners dying daily increasing exponentially as a result of famine, Swift ([1729] 2008) develops a satirical proposal that the government incorporate a policy of eating the children of the peasantry, the extraneous store of which should be 100,000 and will feed the famished families of Ireland fully. While the former case is mythology and the latter satire, the basic idea that those youngest among us are disproportionately vulnerable remains. While a literal interpretation of the infanticidal themes these pieces of literature remains repugnant to modern readers, the notion that the elder, well established, and secure devour, in a manner of speaking, those vulnerable in society remains a salient and cruel feature of American society in general. Ahorn (2008) develops this concept metaphorically as it pertains to the oft experienced "fate" of early teachers: early teachers are vulnerable and often professionally devoured by unsupportive, if not hostile working conditions. Indeed, one may conclude that early teachers are the sacrificial victims of industrial educational structures, leaving our students an insecure supply of adequate

teachers and our institutions bereft of the talent it needs to flourish in the decade(s) to come.

Early teacher attrition is a problem that has negative effects on federal, state, and local primary and secondary educational structures. In the United States, teacher attrition rates generally have increased over the past three decades from around 6 percent to 8.4 percent, which corresponds to an increase in the need for primary and secondary schools to replace 63,000 teachers annually by 2013—but was estimated to increase to 300,000 by 2020 and 316,000 by 2025 (Sutcher, Darling-Hammond, and Carver-Thomas 2016). Conservative estimates of early teacher attrition find that between 19 and 30 percent of teachers leave the field during their first five years of experience, whereas others estimate that early teachers who leave do so at a rate of between 30 and 50 percent (Sutcher et al. 2016). Meanwhile, U.S. schools' need for appropriately credentialed teachers is increasing as student enrollment numbers continue to grow (U.S. Department of Education 2019). A series of studies put the national price tag of replacing teachers leaving the workforce between $4.9 and $7.3 billion annually over the past two decades (Podolsky et al. 2016; Shen et al. 2012; Zhang and Zeller 2016). A second negative consequence of high rates of teacher attrition in general, and early teacher attrition in specifically, is the negative correlation between teacher turnover and student learning/achievement (Podolsky et al. 2016; Ronfeldt, Loeb, and Wyckoff 2013). Though there is a rich body of literature addressing the problem of early teacher attrition, from both national and local perspectives, much research remains too descriptive of the

problem, or treating the problem simply as a workforce supply and demand issue, without attempting a comprehensive sociological explanation for this societal issue.

THE RESEARCH PROBLEM

This research studies the determinants of secondary (grades 6-12), early (1-5 years of service) teacher attrition from the teaching profession in the United States. For the purposes of this study, the term "secondary" includes grades 6-12 because primary/elementary is cut off at fifth grade. There is an overlap between some schools when it is the case that an elementary school houses sixth-grade students, but most commonly, secondary schools begin with grade six in the United States. Similarly, as a practical definition, secondary schools include grades 6-12 because these are standard populations related to teaching certification classifications. Though terms such as "new," "beginning," and "novice" are sometimes used by researchers to describe teachers in their first five years of experience, the term "early teacher" emerges in the scholarly literature predominantly as the encompassing signifier for this variable. Though some scholarship defines "early teacher" as a teacher with 1-3 years of experience, this study defines "early teacher" as a teacher teaching with 1-5 years of experience because it more comprehensively reflects scholarly consideration (Schaefer, Long, and Clandinin 2012). Furthermore, Borman and Dowling (2008) find that teachers teaching in their first five years exhibit 1.57 greater odds of leaving teaching than at later, pre-retirement years of experience. In this study, "attrition" refers to teachers who leave teaching altogether, rather than those who simply change schools or school districts. Descriptively, early teacher attrition is a growing, demonstrable problem at primary and secondary school

levels, in urban, suburban, and rural school contexts, for both male and female, white and non-white teachers. Additionally, this research seeks to develop a theory with sufficient explanatory power to interpret the problem sociologically.

SIGNIFICANCE OF THE STUDY

This research is significant because it develops theoretical, methodological, and empirical contributions to explain secondary, early teacher attrition. Theoretically, this study develops a framework couched in constructivist sociology of knowledge that emphasizes proximate and mediate legitimating structures of knowledge, a latent theory of praxis, and aspects of collaborative professionalization termed "constructivist community of professionalized praxis" and explains the effect of determinants on secondary, early teacher attrition.

Methodologically, this study contributes to the literature by employing event history analysis with Cox regression, an uncommon method of analysis to study secondary, early teacher outcomes. The study uses sequential modeling to test the effect of teacher characteristics, support and relationality, preparation and development, perceived work environment, school context, and student characteristics to determine secondary, early teacher attrition.

The results of this analysis make several significant empirical contributions to the study of secondary, early teacher attrition. Testing the effect of covariates on teacher career status reveals that aspects of teacher characteristics, support and relationality, preparation, and perceived work environment significantly affect the likelihood that secondary, early teachers will leave teaching.

Understanding the field of experience relative to why and when early teachers leave will help concerned educational entities such as university or college education programs and other teacher certification entities to emphasize aspects of teacher preparation such as the ability to assess students, manage the classroom and disciplinary situations, content-area expertise, and instructional efficacy to promote early teacher capital and student success outcomes. Additionally, this study will help education professionals to conceive of the problem holistically, yielding practical policy implications related to campus relational structures, and work environment concerns, including teacher content-area autonomy and relative secondary, early teacher enthusiasm.

STRUCTURE OF THE DISSERTATION

After the current chapter, Chapter 2 proceeds with a literature review of prior studies of teacher attrition in general, and early teacher attrition specifically, identifying individual teacher-level characteristics, and school-level characteristics. Chapter 3 presents a theoretical framework termed "constructivist community of professionalized praxis" to explain the effect of determinants on early teacher likelihood to leave teaching and presents the study's hypotheses. Chapter 4 describes the data and variables and their measurements and discusses the method of analysis. Chapter 5 presents the findings of descriptive analysis, correlational analysis, and event history analysis with Cox regression. The final chapter summarizes key findings, discusses theoretical and practical implications of the empirical results, identifies limitations of the study, and makes recommendations for future research.

CHAPTER II

LITERATURE REVIEW

A review of the literature addressing early teacher attrition from teaching practice reveals two primary themes: school-level factors (e.g., school culture, school context, teaching assignment, ongoing professional development for early teachers, access to high quality curriculum and resources, relative levels of teacher pay, new teacher induction program, school processes, the nature of the administrator/teacher relationship, the presence/quality of early teacher mentoring, professional collegiality among teachers, and collaboration among teachers), and individual-level factors (e.g., teacher education, age, gender, race/ethnicity, certification type, and teacher practices). The method this literature review adopts was a Boolean search of academic databases including Educational Resource Information Center (ERIC), Education Source, JSTOR, and SocINDEX. Articles were chosen based on key word relevance and analysis of article abstracts to determine relevance. Secondly, this literature review is benefitted by a collection of documents and reports relevant to early teacher attrition from the NCES and independent institutes such as the Learning Policy Center, accessed via Google search. Keywords searched include “early teacher attrition,” “beginning teacher attrition,” “early teacher retention,” “teacher workforce,” “teacher supply,” and “early teacher satisfaction.”

SCHOOL-LEVEL FACTORS

School-level factors important to the problem of teacher attrition from the teaching workforce that emerge from the relevant literature include: school culture, school context, teaching assignment, ongoing professional development for early teachers, access to high quality curriculum and resources, relative levels of teacher pay, new teacher induction program, school processes, the nature of the administrator/teacher relationship, the presence/quality of early teacher mentoring, professional collegiality among teachers, and collaboration among teachers.

While classroom teachers who create and implement effective instruction have the most dramatic impact on student success levels, campus administers demonstrate the next most impactful effect on student success rates (Shen et al. 2012). Similarly, early teacher perceptions as to the efficaciousness of administration and perceived rapport between the two are critical to early teacher retention/attrition. Ingersoll and May (2012) found that teachers reporting greater satisfaction with school leadership support demonstrate 21 percent reduced odds of leaving teaching. Shen et al. (2012) and Kearney (2015) emphasized the role of the principal and assistant principal to give affirmation and critique as comprehensible input for early teachers. According to these studies, early teachers need and expect one-on-one communication and accountability with campus leadership. When these experiences are lacking, early teachers express a sense of alienation and ambiguity as to their performance (Avalos and Valenzuela 2016). According to Howes and Goodman-Delahunty's (2015) study, high workload and perceived lack of support from campus administrators were issues most frequently

reported by both former teachers and those considering leaving teaching at the time of the study. Minckler (2013) reported that the absence of meaningful professional dialogue between early teachers and campus leadership creates a deficit of social capital, which corresponds to a reduction of perceived early teacher agency. Conversely, Brown and Wynn (2009), in their study of campus administrative strategies to retain teachers, noted a positive impact on teacher retention resulting from regular informal conversation with teachers, support for teachers by providing meaningful professional development opportunities, or by providing campus funding for professional development beyond what is offered during teacher in-service activities, and an increased share in campus decision making with new teachers on substantive issues, cultivating shared goals between faculty and campus administration. Podolsky et al. (2016) found that teachers are retained at higher levels when they feel supported by the administrator(s). Factors that Podolsky et al. mentioned as they describe what it means for early teachers to "feel" supported include instances when school leadership communicates effectively with them at an individual level and the school's leadership style. When teachers describe their campus administrator's style as micro-managing or interpersonally harsh, they are more likely to report dissatisfaction, and conversely, when teachers describe their campus administrator's style as empowering and collaborative, while setting clear expectations, teachers are more likely to report satisfaction. School contexts in which the principal is described by teachers as visiting their classrooms often, communicates regularly with teachers, and is highly visible reveal higher teacher job satisfaction levels. Curtis and Wise (2012) went on to assert that of the factors relevant to a teacher's decision to stay or

leave primary or secondary education, lack of administrative support was the most important variable. According to another respondent in Curtis and Wise's (2012) study, ineffective administrators systematically undercut the professional effectiveness of teachers, making teachers powerless in a variety of ways.

School process and culture combine a variety of school-level factors that directly impact teacher satisfaction and agency. Howes and Goodman-Delahunty's (2015) study examined 133 current and former Australian teachers. Sixty-three percent of teachers at the time of the study were considering making a change from teaching, citing lack of enjoyment, negative interactions with staff, poor workplace conditions, poor student behavior, workload, and stress as reasons why one might leave teaching. Ingersoll and May (2012) found that 62 percent of science teachers in a nationally representative study left teaching, a major reason for which was desire to find a better job or dissatisfaction with teaching. Shen et al. (2012) examined the coefficients of the school process and found that school influence, classroom control, positive student behavior, and administrative support have statistically significant, positive effects on teacher job satisfaction. Ingersoll and May (2012) found that when teachers feel they have greater influence of school decision-making, the odds that teachers will leave decrease by 23 percent. Ingersoll and May (2012) also reported that teachers who feel a greater sense of autonomy in the classroom are 37 percent less likely to leave teaching compared to those who feel less school-structural agency. Podolsky et al. (2016), analyzing recent national educational statistics, concluded that teachers and students in educational contexts with relatively weak levels of school leadership, little time to collaborate with peers,

accountability mechanisms that are punitive, aging/dilapidated facilities, and limited instructional/curricular materials, learners struggle to learn and achieve, and teachers suffer a reduced sense of agency and report lower levels of professional success. Podolsky et al. (2016) also found that in a survey of more than 2,000 current and former California teachers about factors related to their decision to stay, leave, or return was the perceived opportunity to participate in school decision-making and the quality of relationships among the staff. Similarly, the analysis of the Schools and Staffing Survey showed that 13 percent of teachers who had chosen to leave teaching after the 2011-2012 school year cite lack of instructional/organizational influence as very or extremely important to their decision to leave (Podolsky et al. 2016). Kraft and Papay (2014) researched the effect of school professional environment on teacher effectiveness and student success rates. They reported a 1 standard deviation (SD) difference in the quality of professional environment correlates with an added 0.0026 SD increase in the yearly gains to teaching experience, 0.0052 after 2 years, 0.0078 after 3 years, and 0.60 difference after 10 years. After three years of teaching in school contexts at the 75th percentile of professional efficacy, teachers improve their effectiveness by .010 SD more than teachers working in school contexts at the 25th percentile of professional efficacy—a 12 percent improvement. The discrepancy grows to 0.017 SD after the 5th year—a 20 percent difference. By year 10, teachers working in school contexts with high a quality professional environment improve, on average, 0.035 SD more than those working in school contexts with relatively low professional environment—a 38 percent difference. These findings suggested that the relative professional quality of the school environment

is associated with increased teacher instructional efficacy and student achievement. Early teachers working in school contexts that are relatively higher in terms of professional environment grow in instructional efficacy at a predictably higher rate than those teaching in school contexts that demonstrate less professionalism (Kraft and Papay 2014).

School context emerges in the literature as a relevant determinant to teacher attrition (Kutsyuruba et al. 2017). Ingersoll and May (2012) reported that teachers teaching in higher-poverty contexts were much more likely to leave teaching than those working in lower-poverty schools—a 10 percent growth in attrition from higher-poverty schools compared to lower-poverty schools. Ingersoll and May (2012) found that teachers teaching in rural contexts were 20 percent less likely to leave teaching than those teaching in urban contexts. Shen et al. (2012) reported that at the school level, overall, teachers working in smaller schools showed higher levels of job satisfaction compared to teachers at larger schools. Shen et al. (2012) also found that schools with a larger percentage of free or reduced-price lunch student populations report a lower level of job satisfaction than schools in more affluent communities. Asserting that working conditions are often much worse in high-poverty areas than in low-poverty schools, Podolsky et al. (2016) revealed that teacher turnover in high-poverty schools is 50 percent higher than in low-poverty schools. Additionally, high attrition rates in high-poverty schools have been associated with poorer facilities, fewer instructional resources, reduced administrator support, and larger classes, all of which were negatively associated with teacher job satisfaction and retention rates (Podolsky et al. 2016). Examining teacher attrition in hard-to-staff (greater minority student populations and lower socio-economic student

populations) versus easier-to-staff schools (more affluent and less minority population students) in New York City, Ronfeldt (2012) found a statistically significant negative effect on teachers remaining at harder-to-staff schools; teachers working in easier-to-staff schools, on the other hand demonstrate a greater likelihood to stay at the school. Furthermore, teachers teaching in easier-to-staff schools demonstrated greater teaching efficacy during teachers' first five years based on standardized test scores, correlating with higher early teacher rates of teaching persistence. Conversely, Rondfeldt (2012) found that early teachers teaching in harder-to-staff schools is associated with lower student performance and higher rates of early teacher attrition. Attending to the professional environment of the school and its effects on teacher longevity and professional effectiveness measured by gains in student learning relative to teacher service during years 1 through 10, Kraft and Papay (2014) found that a 1 SD difference in the excellence of the professional environment of a school correlates with an added 0.0026 SD in the yearly gains to teaching experience, 0.0052 SD difference after 2 years, 0.0078 SD difference after 3 years, and a 0.0260 difference after 10 years. Furthermore, Kraft and Papay (2014) found that after 3 years, on average, instructors working in at schools in the 75th percentile of professional ratings improved their instructional efficacy by 0.010 SD that teachers working in schools at the 25th percentile. These findings illustrate the growth of early teachers' instructional effectiveness on a steady, upward trending scale from years 1 to 10.

Teaching assignment, similarly, had a strong effect on whether an early teacher chooses to stay or leave in his/her first five years (Feng 2010). Loeb, Kalogrides, and

Beteille (2012), analyzed staff and students of Miami-Dade County Public Schools from 2003-04 through 2009-10 to identify the relationship between more effective and less effective school hiring, teacher assignments, and teacher development and found that in the school district, novice teachers were assigned lower achieving student populations than their colleagues across all types of schools; however, the effect is weaker in more effective than less effective schools. These findings are important given the correlation between teachers teaching in more effective schools, where the disparity of teaching assignments for novice and more experienced teachers is more equitable to novice teachers, and these teachers reported more positive career trajectories. In their review of the relevant literature, Kutsyurba et al. (2017) reported that teachers working in classrooms with higher percentages of student behavior incidents were much less likely than other teachers to have good teaching experience, intend to continue teaching, or plan to remain in the same school. Ingersoll and May (2012) found that a 1-unit increase in average reported student discipline problems was correlated with a 32 percent increase in the odds that teachers would leave teaching. Fontaine et al. (2011) reported that early career teachers felt an overwhelming burden related to being assigned more difficult classes, with early teachers being assigned at greater frequency to classes that were leftover after more experienced teachers advocated for themselves teaching advanced coursework and less preparations. Mee and Haverback's (2014) qualitative study of middle school teachers working through university credentialing found that for their cohort of six prospective teachers, each reported feeling anxious about classroom management and that it was a daily concern. Mee and Haverback (2014) also found that

administrative paperwork, including student Individual Education Plan and Limited English Proficiency documentation and instructional differentiation, loomed largely as a burden to teachers and a barrier to their daily instructional efficacy. Latifoglu (2016) interviewed 41 beginning teachers to understand the effect of employment status—full-time fixed contract, full-time permanent, and causal relief—to determine the effect of employment type on early teacher attrition. With respect to mentoring, no causal relief teacher was provided formal induction, mentoring, or professional development, and most full-time fixed, and full-time permanent early teachers reported inadequate mentoring and induction due to mentors being largely absent. This dearth of professional on-site network was correlated with negative career trajectories and early teacher attrition. Latifoglu (2016) found that 58 percent of early teachers interviewed described their workload as an early teacher negatively, emphasizing increasing duties both in the classroom and extracurricular, which adds to the psychological burden teachers feel and early career teachers sense more acutely. Additionally, Latifoglu (2016) found that resources and supports are hierarchically distributed with casual relief teachers receiving the fewest supports, much to their professional peril.

A fourth subset in this domain pertains to early teacher access to efficacious professional development and access to high quality instructional/curricular resources (Dassa and Derose 2017; Kersaint et al. 2007). The first five years of a teacher's practice are important for the growth of the teacher's pedagogical efficacy. Loeb et al. (2012), citing prior research, reported that teacher performance and student success rates rose consistently throughout the teacher's first five years of teaching and leveled off after that.

This finding substantiates the impetus that schools have the greatest ability to effectively develop teachers' efficacy by providing appropriate training throughout their first five years, which corresponds to greater levels of student learning and achievement. Creating or providing effective professional development opportunities, specifically, though not exclusively, for early teachers can be a mitigating factor not only on early teachers' decision to stay or leave the teaching field, but also powerfully impact their sense of efficacy and promote greater levels of student achievement. Relatedly, an important component to teacher development is the school's ability to provide early teachers access to effective instructional or curricular resources. Podolsky et al. (2016), in their analysis of the 2011-12 School and Staffing Survey (SASS), a large nationally representative survey, found that smaller levels of expenditure for teaching materials were associated with higher levels of staff turnover. The lack of rich instructional materials on teacher satisfaction and perceived teacher-efficacy were also correlated with higher levels of teacher satisfaction, which was a disincentive for early teachers to return to teaching the following year. Mee and Haverback's (2014) qualitative study of prospective middle school teachers working through university credentialing demonstrated that of the six teachers who agreed to the interview, five expressed concerns about delivering curriculum to their pupils. Five of the six early teachers reported feeling overwhelmed as to the needs to administer curriculum at the pace prescribed by the team/school in which the teacher taught. One particular participant reported curriculum implementation concerns relative to district and/or campus curriculum disorganization and conveyed a compounding frustration of not knowing who to speak to about his concerns. Ingersoll

and May (2012) found that mathematics teachers receiving professional development for classroom management was associated with a 39 percent reduction of teacher attrition.

Manuel and Carter (2016) researched a sample population of teachers who had one to four years of experience at an Australian university. Participants had completed a two-year graduate-entry Master of Teaching degree during the year immediately prior to teaching. Each specialized in teaching English (Literature). The most consistent themes in response to the question of "greatest challenges" were time management and teacher wellbeing; concerns about the tension between the ideals of generating a love of literature and the subject and the constraints imposed by a content-heavy and assessment-driven curriculum; and challenges around differentiation in teaching, student engagement, motivation, and behavior. These challenges represent access to high-quality curriculum and resource variables that contribute to the early teachers' feelings of ineffectiveness, loneliness, and alienation from the profession, which correspond to higher levels of teacher job-dissatisfaction and subsequent attrition. Ninety percent of respondents indicated that dealing with constraints on time due to curricular demands and preparing students for high stakes standardized tests were major concerns. These teachers perceived that their approach to teaching English was more practically determined by the needs for students to excel on state-mandated assessments, which created a deteriorating tension with teachers' perceptions and beliefs as to the proper efficacy of teaching and student learning, which 90 percent of teachers stated is care for student socio-emotional growth and cognitive development for a life-long appreciation of literature. Of these teachers, only 40 percent agreed that they feel they were making a difference, while 58 percent

strongly agreed that his/her teaching experience had been more challenging than initially expected. Zero percent of teachers believed that they were able to maintain his/her ideals as a teacher. Most teachers conveyed a negative or ambivalent view of the overall quality of the teaching experience. Fontaine et al. (2011), in their mixed method study of first and second year Canadian secondary teachers, found that assessment of student learning was a key area of concern for early teachers—with over a third of all respondents reporting that they had not been instructed during their teacher preparation coursework to assess student learning competencies. Fontaine et al. (2011), found that early teachers who left teaching felt especially ill-prepared to integrate effective instructional approaches to support students with learning difficulties.

A fifth subset in this domain discusses the role of school induction for early teachers. Kearney (2014), and Gallant and Riley (2014), discussed the need for early teachers to be invited to campus culture through a comprehensive induction process that cultivates teacher campus knowledge regarding vision, mission, instructional norms, and recordkeeping technology and procedures. Kearney (2015), in a later study, discussed campus induction as a situated learning model during which the new teacher learns what it means to be a full member of the organization, without which, new teachers remain in a liminal state until they are either resilient enough to form a meaningful campus network on their own, or grow completely alienated and withdraw informally until they resign. In addition to Kearney (2014, 2015), Gallant and Riley (2014), and Castro et al. (2010) emphasized the role of new teacher mentor programs as a means to forming early teacher social capital, providing a mechanism for ongoing teacher development and providing

allies or buffers for new teachers to utilize when navigating difficult teacher or parent interactions. Castro et al. (2010) created added awareness to the importance of developing campus induction/socialization for new teachers in the way that these structures promote nurturing professional relationships for new teachers, breeding a sense of collegiality among early and tenured teachers alike.

Early teacher mentoring, like induction, contributes to the cultivation of early teacher efficacy and persistence. Guise (2013), quoting Darling-Hammond, wrote that efficacious mentoring partnerships increase retention rates by providing a mechanism for early teacher instructional improvement, early teacher self-efficacy, and professional attitude. Guise (2013) suggested that mentoring is typically, simply conceived of as an ongoing relational mechanism of support between a mentor; however, the darker side to these professional relationships is the inherent attitude that mentoring programs take on, which is that teachers will either swim or sink according to whether early teachers are expected to grow professionally and persist during the early season of their careers by pulling themselves up by their own bootstraps. Additionally, Guise (2013) stated that an inimical problem to mentoring as typically conceived of by early teachers' is that the mentor was less of a support mechanism for professional growth, and more of an evaluator, which inhibits trust and effectiveness. Simos (2013), in her qualitative study of early career teachers noted that respondents often reported supportive and sometimes antagonistic relationships with cooperating/mentoring teachers, which enhanced teacher dissatisfaction with the profession. In their review of relevant literature, Kutsyurba et al. (2017) discussed early teacher mentoring as a relationship that involves a more

experienced teacher working with an early teacher collaboratively and nonjudgmentally to study and reflect on classroom instruction and develop growth areas, while maximizing best practices the early teacher is already implementing. Mentors provide early teachers with coaching, guidance, advocacy, counseling, protection, feedback and information about informal process/procedures of the campus organization. The presence of a vibrant campus mentoring program can help develop a culture of learning, which conveys direct and indirect cues to the early teacher that instructional deficits are not disqualifying, and that teacher learning is part and parcel to growing as a professional educator (Kutsyurba et al. 2017). Furthermore, effective mentoring practices provide a professional relationship that is a mechanism for teachers' instructional efficacy and emotional well-being (Kutsyurba et al. 2017). In context of diverse student learners, mentoring structures help novice teachers come to understand better where students are coming from in terms of socio-economic status, race/ethnicity, et cetera, helping the novice teacher meet the needs of students in diverse environments (Kutsyurba et al. 2017).

Studying the potential benefit of reciprocal mentoring structures on early teacher development and sustainability, Paris (2013) found that half of the early teachers she studied expressed the inability to engage in meaningful onsite induction program to help develop early teacher familiarization with school policies and protocols. Paris (2013) found that early teachers who engaged in reciprocal mentoring felt supported by a staff member who they could ask challenging questions and serve as a confidant for meaningful professional and personal discussions, thereby improving early teachers'

initial professional experiences and likelihood for persistence. Paris (2013) also found that mentoring structures that provide pastoral care, emotional support, and guidance positively impacted early career teachers' sense of resiliency by providing a mechanism of encouragement and a softening of feelings of doubt and professional inadequacy.

Guise (2013) advocated university partnerships with schools and early teachers as way to mitigate often problematic, if not toxic, onsite mentoring relationships. Although, not arguing for the demise of all onsite mentoring programs, Guise (2013) suggested that it is the proper role of university education structures to extend their programs as a bridge to support early teachers through mentoring. One suggestion that Guise (2013) provided was to create digital platforms that are cost-neutral, which can serve as a communicative mechanism that fosters dialogue through coaching between the early teacher and university education faculty. Secondly, Guise (2013) recognized the opportunity for support seminars, led by university faculty, to serve as a mechanism of growth for early teachers.

Again, noticing the importance of relational structures for early teacher longevity and professional efficacy, the role of collegiality and collaboration among teaching peers emerges in the literature as a powerful factor (Ingersoll and Strong 2011; Kent et al 2009). Castro et al.(2010) interviewed 15 first-year teachers in various high-needs areas—rural, culturally diverse, and low-socioeconomic students, as well as large, urban contexts, and suburban special education teachers. They found that early career teachers were often left to their own methods for finding ad hoc mentors and informal conversation partners to find solutions to difficult problems related to curriculum

implementation and parent/student conflict management, which increases early teacher stress and isolation and negatively effects career longevity. The professional learning community (PLC) approach has gained favor in schools in the United States. Discussing the benefits of campus PLCs broadly, Battersby and Verdi (2015) commented on the benefits of ongoing, teacher-centered professional development that also breed a sense of common purpose and shared workload. Thusly conceived, in the literature PLCs, serve as a mechanism that, while being important in its own right, creates a synthesis between teacher collegiality and instructional development. Similarly, Avalos and Valenzuela (2016) correlated the presence of campus PLCs with reduced emotional fatigue and teacher burnout as a result of transformed new teacher conception of themselves as a part of a community and not isolated, in addition to the benefits of sharing instructional workloads among content areas. Shen et al. (2012), researching the impact of collegiality among teachers in general, found that staff collegiality had significantly positive, moderate, and large effects on teacher job satisfaction, thereby making early teacher longevity more likely. Podolsky et al. (2016) cited a study of Michigan and Indiana teachers in their first three years of experience, as well as a study of teachers in a Midwest urban context and noted the strong, positive effect of collaborative environments on teacher job satisfaction and choice to stay for the following year. A longitudinal study of the Chicago Public School District found that between 2003-2007, 75 percent of the variation among schools' teacher retention rate was explained by teachers' report of the climate and organization of work at their school—again,

demonstrating the significant, positive impact on the relative collegial/collaborative nature of a campus as a learning community (Podolsky et al. 2016).

Teacher pay/compensation, as one may expect, is a frequently examined determinant of early teachers' decision to stay or leave teaching. Teaching, while a profession that requires, typically, at least a bachelor's degree, if not additional credentialing besides, is among the poorer compensated professions. Nationally, beginning teachers earn about 20 percent less than individuals with college degrees in other fields—a gap that expands to 30 percent by mid-career (Podolsky et al. 2016). Podolsky et al. (2016) reported that while in the 1990s public school teachers earned a similar compensation rate as other college educated workers, by 2015 teachers earned 11 percent less than similarly college educated workers in other fields. Podolsky et al. (2016) found that of teachers who had left teaching in 2012, 67 percent described an increase in teacher pay as extremely important to their future decision to return to teaching. Considering college graduates, an 11 percent increase in the salary of teachers correlates to a 26 percent increase in undergraduates' willingness to major in education and work as teachers (Podolsky et al. 2016). Citing prior research, Podolsky et al. (2016) reported that a national analysis found that a 1 percent increase in teacher salaries in large urban settings would increase the graduation rate of teachers from a selective college by 1.5 percent. Addressing teacher attrition in high-poverty schools, Podolsky et al. (2016) found that although relatively higher poverty schools tend to create a more demanding teaching assignment, teachers in these contexts are more likely to leave the profession because of relatively lower pay than because of the demanding nature of these positions.

Generally, teachers are more likely to quit teaching when they work for school districts that compensate teachers at lower levels. Citing National Center for Education Statistics, a 10-percentage point gap in attrition rates occurs for teachers when they start out making $40,000 or more compared with early teachers who start out making less than $40,000 (Podolsky et al. 2016). This problem is compounded by the inequities teachers' experience in terms of pay across different school districts. Ingersoll and May (2012) reported that with a $10,000 difference between the highest and lowest earning science teachers in their study, teachers at the lower end of the income spectrum report 17 percent greater odds of leaving teaching than those at the higher end of the income spectrum. Howes and Goodman-Delahunty (2015) found that of teachers who had left or were actively considering leaving teaching, 39 percent cited higher pay and better working conditions as determinative aspects to leaving teaching. Results from the Schools and Staffing Survey reported that the best paid teachers in low-poverty schools earned 35 percent more than their peers in high-poverty schools, which makes the problem of staffing often needy schools in high-poverty communities that much more intractable.

INDIVIDUAL-LEVEL FACTORS

Teacher education level and certification type can have strong effects on teacher efficacy, which impacts teacher job satisfaction and motivation to stay or leave. As one may presume, recent, growing evidence suggests that early teachers have a higher attrition rate when they enter the profession with a lack of preservice preparation/training (Cochran-Smith et al. 2012). Podolsky et al. (2016), citing National Center for Education Statistics, reported that 30 percent of uncertified early teachers leave the profession prior

to their sixth year of experience, whereas that percentage drops to 15 percent for certified early teachers, and 21 percent of all first-year teachers in 2012 were not fully credentialed before starting teaching. Analysis of the Schools and Staffing Survey 2011-2012 reveals that new teachers who had a semester or more of practice teaching before formally taking on the role were more than three times less likely to leave when compared to teachers without any teaching practice (Podolsky et al. 2016). Furthermore, analyzing other aspects of new teacher preparation revealed that novice teachers who had received comprehensive teacher preparation (i.e., observing other teachers, student teaching a full semester, receiving feedback, taking course in instructional methods, educational theory, and selecting and implementing instructional resources) were two-and-a-half times less likely to leave teaching after a year than teachers exhibiting a dearth of training—the latter being the case for about 15 percent of all new teachers nationally (Podolsky et al. 2016). Attending specifically to the type of certification—traditional versus alternative/emergency certification program—a teacher received, revealed a compounding negative effect on early teacher attrition. Podolsky et al. (2016) cited the growth in percentage of teachers receiving alternative certification from 13 percent in 1999-2000 to 24 percent in 2011-12. Following the 2007-08 school year, alternatively certified teachers were two-and-a-half times as likely as traditionally certified teachers to leave teaching (Podolsky et al. 2016). Carver-Thomas and Darling-Hammond (2017) found that teachers entering the field with an alternative certification were 25 percent more likely to leave their schools than those holding a traditional teaching certificate. Zhang and Zeller's (2016) mixed methods study of 60 North Carolina teachers found that

traditionally certified teachers remain teaching in year 2, 3 and 7 at 86.3 percent; lateral alternative certification entry teachers remain in year 2 at 59.8 percent, year 3 at 45 percent, and year 7 at 35 percent; special alternative certification entry teachers remain in year 2 at 84.4 percent, year 3 teachers at 77.6 percent, and year 7 teachers remain at 65.5 percent.

The literature reveals that age has a non-linear significant effect on attrition rates for younger teachers and the oldest teachers (the latter, predictably, as a result of aging out and retirement). Ingersoll and May (2012) found that of demographic variables, younger (less than 30) and older (greater than 50) teachers were more likely to leave teaching than middle-age teachers (30-50 years). Borman and Dowling (2008) found that a simple continuous measure of teacher's age shows that older teachers were less likely to leave teaching than were younger teachers. Similar, while analyzing studies that sought the attrition rate relative to ages older and younger than 26 and older and younger than 39, revealed the same trends—younger teachers demonstrate greater odds of attrition from the teaching profession (Borman and Dowling 2008). Considering early teachers in specific, Borman and Dowling found that the odds of attrition for early teachers are 5.32 greater than for those with more experience.

According to a 2008 meta-analysis of 34 studies of teacher attrition and retention, gender is the most determinative variable (Borman and Dowling 2008). Borman and Dowling found that over 19 studies, conducting logistic regression, the odds of men leaving the teaching profession are approximately three-fourths greater than the odds of women leaving. Ingersoll et al. (2018), analyzing School and Staffing Survey data, found

that over the past four decades, the proportion of female teachers has steadily increased—from 67 percent in the 1980-81 school year, to 76 percent in 2015-2016. Furthermore, the number of male teachers has also increased over that time, but at a rate only half of that of female teachers (Ingersoll et al. 2018).

As a determinant, race/ethnicity emerges as a significant factor revealing the race/ethnicity-based disparities in teacher attrition, but these effects are compounded by the greater disparity of proportions of white versus non-white teachers in the workforce. Borman and Dowling (2008) found that white teachers are 1.36 times more likely to leave teaching than non-white teachers. According to Sutcher, Darling-Hammond, and Carver-Thomas (2016), non-white teachers make up less than 18 percent of public-school teachers in 2012. Though the percentage of teachers of color in the public-school teacher workforce has increased 6-percentage points since 1987, the disparity remains given that the overall population of students of color in the United States has grown in the same time span from 28 percent to 49 percent (Sutcher et al. 2016). Retaining teachers of color is particularly important given their predilection to serve, at higher rates than their white counterparts, in difficult to staff positions in low-income communities comprised of people of color (Sutcher et al. 2016). Achinstein et al. (2010), examining research on teacher attrition or retention, cited that according to 2004-2005 TFS (Teacher Follow-Up Survey of the Schools and Staffing Survey published by the National Center for Education Statistics) teachers of color demonstrate higher rates of turnover than their white peers. However, citing this same research, Sutcher et al (2016) found that the

teacher turnover rate for teachers of color was about 3 percentage-points and black teachers was about 4.3 percentage-points higher than that of their white peers.

A review of the literature addressing early teacher attrition reveals important gaps. First, while several researchers have conducted exhaustive literature reviews to compile the most salient factors associated with early teacher attrition, the body of literature is lacking a comprehensive consideration of the salient variables in a single study. Second, the dominant orientation of the literature is to explain the contributions of atomized determinants on teacher attrition, which is helpful to establish the correlational and causal mechanisms that contribute to the problem, but these studies may be limited in the way the address prescribed response to the problem. Third, the studies that do present a theoretical framework, often focus on psychological concepts of agency, or notions of human capital. Fourth, no study reviewed examined the Beginning Teacher Longitudinal Study (BTLS) 2007-2012 to study teacher attrition in a comprehensive way, and since it is the most recent national longitudinal study of early career teachers, the data is potentially rich for findings.

CHAPTER III

THEORETICAL FRAMEWORK AND HYPOTHESES

This chapter begins with a discussion of the historical antecedents to professional teaching conceived of as "women's work." The chapter then proceeds to discuss a model for the sociological construction of knowledge, and explanatory framework for knowledge construction and human formation, developed by Berger and Luckmann. Next, the chapter presents Bourdieu's notion of habitus as a model for praxis. Then, the chapter synthesizes recent literature on professionalization, specifically emphasizing the importance of collaboration, with the prior theoretical building blocks to manifest a theory called "community of professionalized praxis." The chapter concludes with a prestation of hypotheses addressing specific aspects of the larger research question.

THEORETICAL FRAMEWORK

Among the fundamental problems contributing to early teacher attrition are: (1) the relatively low socio-economic capital afforded teachers societally, and (2) low levels of human capital, and by extension professional agency, early teachers experience in the ecological structure of the local school campus organization. A global sociological theory of early teacher attrition must explain structures, mechanisms, and normative values that contribute to early teachers leaving the teaching workforce. Therefore, the theoretical framework presented for this study relies on constructivist sociology of knowledge, a latent theory of praxis, and aspects of professionalization termed "constructivist community of professionalized praxis," as a framework to understand and begin to

combat secondary, early teacher attrition. However, prior to theory construction, it is important to delineate the hermeneutic that has dominated teacher-workforce theory and the historical factors that situate teaching as a low-skilled, working class vocation, professionally bereft of mechanisms for capital construction.

Historically, the economic labor market theory of supply and demand has been the prevailing model for staffing schools. According to this theory,

> Individuals will become or remain teachers if teaching represents the most attractive activity to pursue among all activities available to them. By attractive, we mean desirable in terms of ease of entry and overall compensation (salary, benefits, working conditions, and personal satisfaction). These elements of attractiveness are the policy levers to bring supply in line with demand. The demand for teachers is driven by student enrollments, class-size targets, teaching-load norms, and budgetary constraints. (Guarino et al. 2006:175)

Problematically, this model emphasizes a rational philosophy that is suitable to explain, albeit in generic form, the aggregate market effects of school staffing, but it fails to address the socializing dynamics necessary for early teacher formation as meaningful agential subjects in the school organizational unit. Similarly, embedded in the economic model of supply and demand is the assumption that teachers will make a career "calculation" and simply accept the relatively low symbolic capital afforded to teachers (in terms of compensation and occupation prestige), and non-monetary compensation in the form of affirming sentiments of teachers "felling" like they are making a difference as a part of the rational exchange, while ignoring the oft career making, or breaking, professional networks and knowledge construction that is developmentally important during the first few years of professional teaching. Furthermore, the rational exchange

theory simply reinforces and concretizes the historical inequalities that have contributed to the social construction of teaching as it stereotypically appears today.

Historically, in the United States, teaching has been conceived of as "woman's work" with women accounting for 89.5 percent of the teaching workforce by 1930 (Apple 2015). Teaching as woman's work, historically, reinforced the notion of female domesticity—so teaching children in schools became a logical extension of the stay-at-home work of women (Apple 2015). However, market factors also have an important historical contribution to defining teaching as women's work. As local economies in the United States moved away from agricultural work, and men began to take on work that is proximally disassociated with the familial home and education became compulsory for children, the cost of schooling all children was a burden on local communities. Making about two-thirds of what men in similar teaching positions made hiring women to teach a cost-effective strategy for staffing schools (Apple 2015). As Apple (2015) stated, "thus, patriarchal familial forms in concert with changes in the social division of labor of capitalism combine… to create some of the conditions out of which a market for a particular kind of teacher emerges" (2015:473) Though most women did not enter teaching for love of teaching, "teaching offered numerous attractions. It was genteel, paid reasonably well, and required little special skill or equipment," but the societal perception that teaching was an extension of childcare and created a "training ground" for perspective mothers subsequently created the expectation that teaching was a "transient occupation," whereby one would leave to raise a family after marriage, which reinforces the comparatively low wages associated with teaching (Apple 2015:474). The historical

factors that contribute to the gendering of teaching as "women's work" emerge because women could be paid less and staffed schools at higher levels than males, required limited skill and resources, and that it was a transient practice ground for future mothering, reinforce three of the key deficits that contribute to the institutional plight of early teachers in contemporary American contexts. These three factors coalesced making teaching a low-class occupation—historically most suited to young, unmarried women. However, the presented theoretical model seeks to recast the teaching profession without gendered, unskilled, or lower-class hermeneutical stigmatisms. If the mission of the United States Department of Education is "…to promote student achievement and preparation for global competitiveness by fostering excellence and ensuring equal access," then the historically relevant associations as to who becomes teachers and why—young, low-skilled, single women working in a transient profession that serves as a training ground for later, matrimonial childcare, which can be compensated as a sentimentalized vocation—is reflective of a laissez faire approach to school staffing and educational outcomes that fall far short of the beliefs and practices of a robust and highly effective education system (U.S. Department of Education 2020). Rather, what is needed in order to realize the robust mission of the U.S. Department of Education is for local educational contexts to realize the need for durable relational structures among faculty members and for symbolic capital to emerge in the form of professional unionization through voluntary professional organization membership for increased political capital and lobbying to promote the monetary and political dimensions of teacher symbolic capital. Theorizing early teacher socialization as a constructivist community of

professionalized praxis addresses the ongoing, developmental, interdependent, and expert-based facets imperative to early teacher development for professional effectiveness and longevity. Contrary to working from a deficit-minded model of deprofessionalization (de Saxe, Bucknovitz, and Mahoney-Mosedale 2020), this model is constructivist and prescriptive, advocating for a dynamic process for the development of effective professionals working under the umbrella of a profession.

Theorizing early teacher socialization into the profession as a constructivist community of professionalized praxis requires much definitional and conceptual work. Rather than casting early teacher socialization as a latent process that either occurs or does not manifest based on the individual giftedness and resilience of any particular early teacher is a lazy, haphazard conception. Rather, schools, like any large, complex organization, are a kind of ecology wherein there is a reflexive relationship among the strata of personnel. The institution is affected and reshaped by individuals, and individual agential subjects are reshaped, in terms of values, beliefs, and practices by the larger school institution. Berger and Luckmann (1966), developing a constructivist theory of the sociology of knowledge, described this dialectical process as externalization, objectivation, and internalization (see fig. 3.1).

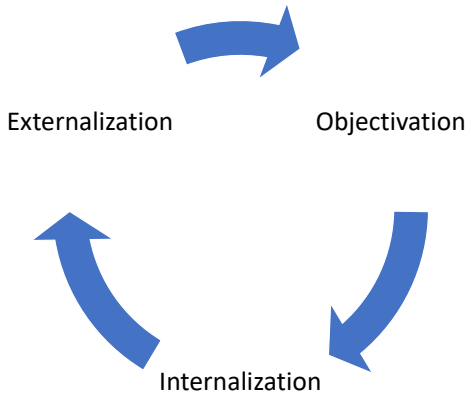

Fig. 3.1: Social Constructivist Dialectic of Institutionalization

Berger and Luckmann posited that "reality is socially constructed" and that language is the mechanism of objectivation (1966:1). Institutionalization is a result of ongoing externalization—habitual actions that become taken for granted, by typifications, or actors taking on specific roles relative to others. Habitualized actions become the "status quo" behavior in an organization and is "meaningful as a taken for granted general stock of knowledge" (Berger and Luckmann 1966:53; see figure 3.2).

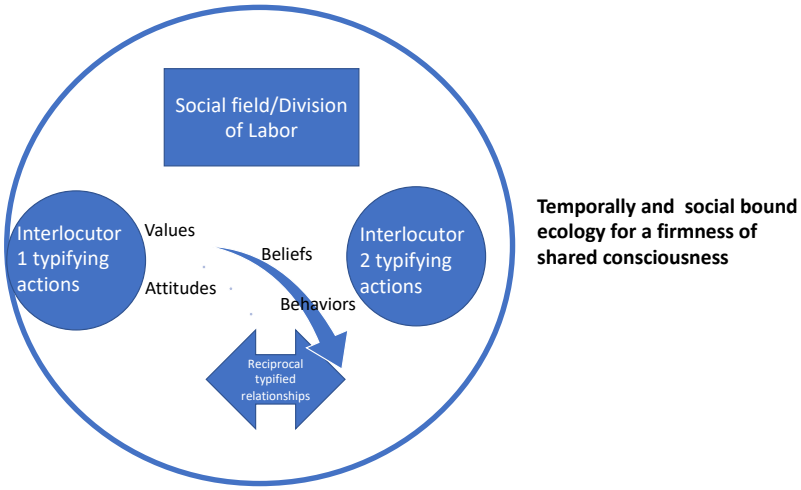

Fig. 3.2: Objectivation via Habitualization

Institutionalization occurs as externalization is concretized by habitualized actions that become differentiated by reciprocal typifications of habitualized actions. More simply put, institutionalization occurs as individuals perform typical functions that perform different roles while maintaining a reciprocal affect, allowing for a more expansive division of labor. Externalized institutions, furthermore, imply historicity and control by establishing predefined patterns of conduct—a norming effect. The norming effect of institutions creates objectivation. Objectivation is the crystallization of institutions, giving "institutions a reality of their own… [and] confronting individuals as an external and coercive fact… promoting socially shared firmness of consciousness" (Berger and Luckmann 1966:58-59). The distillation of these mechanisms and processes is the creation of a linguistically transmitted and bound durability structure of

consciousness, sedimented between individuals and groups (see fig. 3.3)

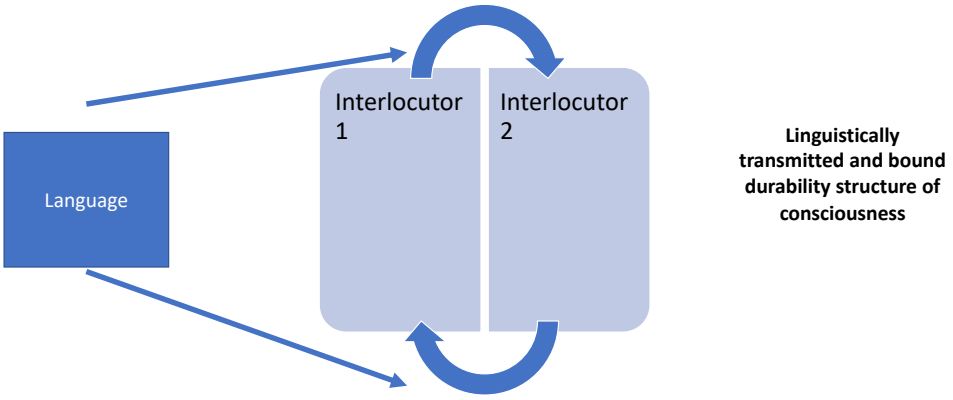

Fig. 3.3: Objectivation via Individual Linguistic Distillation

Individuals contribute to group function and maintenance through role development and are governed by relevance structures (temporal or spatial bounds that make certain shared knowledge more inimical to individuals than other knowledge; Berger and Luckmann 1966:80). Berger and Luckmann identified differing scope and modes of institutionalization based on the relevance structures: a narrower scope of institutionalization is the result of narrower relevance structures, whereas a wider scope of institutionalization is the result of wider relevance structure (1966:80). This exegesis of Berger and Luckmann demonstrates the mechanisms and processes of institutionalization, which account for, in microcosm, the historical reality of school organizations. The transmission process is the problem of legitimation (see fig. 3.4).

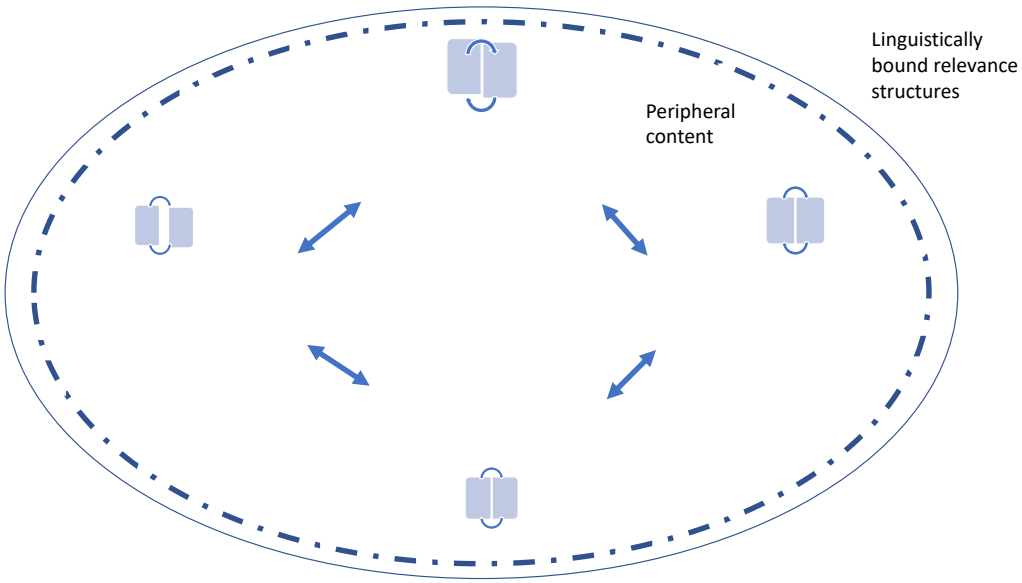

Fig. 3.4: Objectivation via Inter-group Linguistic Distillation

According to Berger and Luckmann, legitimation is a kind of "second order objectivation of meaning" (1966:92). There are four levels of legitimation: incipient legitimation (language development and early childhood socialization), theoretical objectivated meanings (value structures learned in secondary school/adolescents), institutional legitimation (one's place in the division of labor via differentiated body of knowledge), and the symbolic universe. Addressing local secondary schools as a microcosm of the larger social phenomenon, the symbolic universe is the most all-encompassing level of legitimation, whereby nomic structures are created that put all values, beliefs, and practices in their "right place" (Berger and Luckmann 1966:98). Like other objectivated realities, the symbolic universe is coercive in that it forms boundaries of appropriate values, beliefs, and practices. The symbolic universe is maintained by the presence of conceptual explanatory and exhortatory schemes (Berger and Luckmann 1966:109). In the school organization, prophylactic and prescriptive measures such as

collaborative teacher groups (in the case of the former) and teacher growth plans (in the case of the latter) serve as therapeutic and nihilation mechanisms. Social organization is also construed for symbolic universe maintenance. The social organization fosters levels of pure theory, secondary levels of the strengthening of traditionalism and both ideology and embodied practice contributing to the dialectical development and maintenance of the symbolic universe (see fig. 3.5).

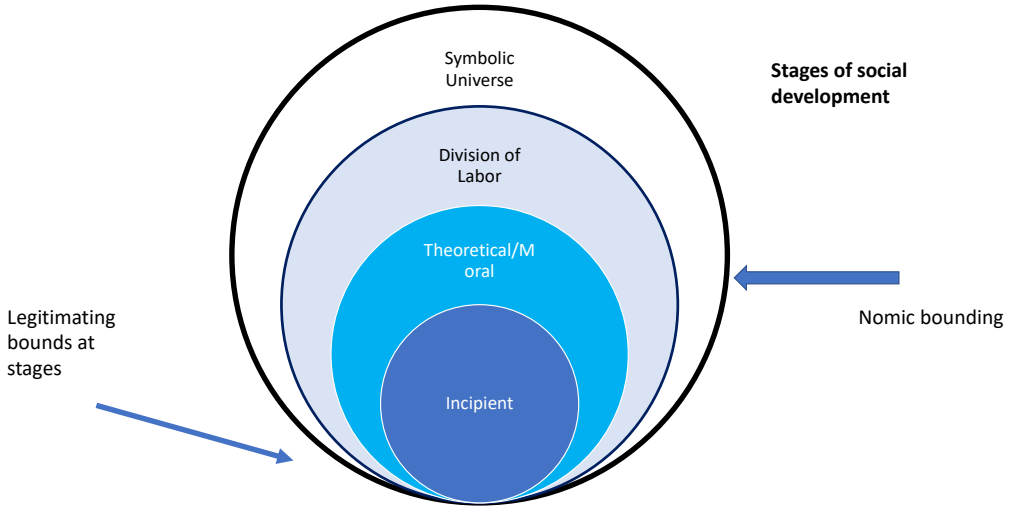

Fig. 3.5: Legitimating Structure as Symbolic Universe

The third facet of the three-fold dialectical process of reality construction is internalization and the development of subjective reality. Berger and Luckmann presented two stages of internalization: primary socialization refers to the reflected reality developed during the earliest stages of child development, typically in the family group, whereas secondary socialization refers to the internalization of institutional "sub-worlds… [and] the acquisition of role-specific knowledge" (Berger and Luckmann

1966:137-138). The latter socialization occurs first in secondary and tertiary education and on into adulthood in different spheres. Subjective reality is mediated by primary and periphery relationships, but the most important mechanism for subjective reality development (i.e., internalization) is conversation, which actualizes the apprehending and producing of reality (Berger and Luckmann 1966). Furthermore, conversation must be continual and consistent to achieve these mediating functions of subjective reality construction (Berger and Luckmann 1966). Individual identity is the socially situated sum total of externalization and objectivation mediated by internalization/subjectivation, dialectically (Berger and Luckmann 1966; see fig. 3.6).

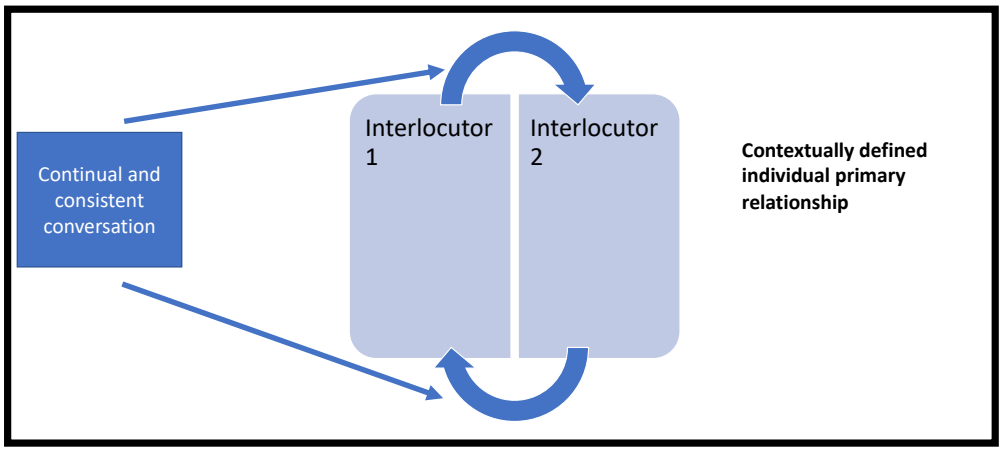

Fig. 3.6: Subjectivation

Foundationally, Berger and Luckmann (1966) proposed a theoretical framework for the social construction of knowledge that hinges upon meaning-making through interpersonal conversation because language provides the nomic and coercive ordering of

meaning for individuals and groups. Similarly, habitualized practices provide the embodied mechanism that promote historicity, making externalization and objectivation possible as a result of the historicity associated with objectivation and the creation of a shared stock of knowledge—be that societally wide or that of a sub-group. The core mechanism that forms the bond between objectivation and internalization in dialectical movement is what Giddens calls "structuration," with both proximate and mediate mechanisms of praxis.

Giddens defines mediate structuration as "factors that intervene between the existence of certain given… capacities and the formation [of] identifiable groupings, that is to say which operate as 'overall' connecting links between the market on the one hand and structured systems… on the other" (1982:158). Proximate structuration, on the other hand, refers to "…localized factors which condition or shape class formation" (Giddens 1982). The most salient feature of proximate structuration is the technique—interpersonal conversation, in the case of this synthesis with the social construction of knowledge of Berger and Luckmann. Figure 3.7 demonstrates mediate and proximate mechanisms of structuration. At this point, Adler et al. (2008) theory of professionalization becomes focal.

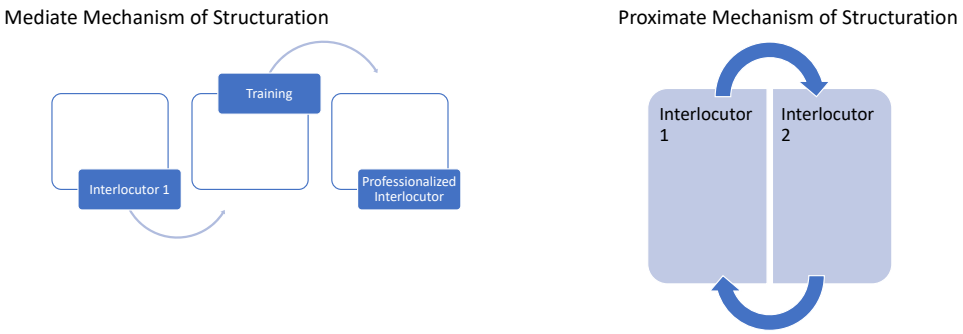

Fig. 3.7: Structuration

Adler et al. (2008) developed a theory of professionalization that centers on a notion of collaborative community. Historically, the concept of professionalization emphasized three qualities: non-routine expertise, jurisdictional monopoly and autonomy, and legal/ethical responsibility to clients—qualities most associated with doctors, lawyers, and the clergy (Adler et al. 2008). Whereas taxonomic approaches to professionalization emphasize the presence, or lack thereof, of these three qualities, Adler et al. (2008) proposed a hybridized notion of Gemeinschaft (mechanical solidarity based on interpersonal similarity) and Gesellschaft (organic solidarity based on interpersonal individuality and diversified roles) to emphasize the notion of community as an intricate quality to contemporary professionalization, because, as they write, "the Gemeinschaft bond is too insular and traditionalistic, and the Gesellschaft bond is too narrowly self-interested" (Adler et al. 2008:365). Adler et al. (2008) perceived professional

collaboration as the conceptual middle way: “Professionals rely on a collegial community structure to mobilize power in asserting their jurisdiction over… tasks and governing themselves in the performance of these tasks” (Adler et al. 2008:361). Adler et al. (2008) explicitly asserted the importance of community, saying that “Capitalist development is increasingly knowledge intensive, and… effective knowledge-work needs community. Knowledge-workers need community within which to learn the craft elements of their skill sets and within which they can continually advance and share knowledge, both theoretical and practical” (Adler et al. 2008:363). Adler et al. saw the contemporary teaching vocation in such a light:

> … teaching once relied on craft-type community. Beginning in the 1960’s, teaching moved into the age of the autonomous professional. Although this brought greater status, more technical knowledge, and higher salaries, it also inhibited innovation by impeding the diffusion of superior practices. By the 1990’s, a new age had begun, that of the collegial professional. In the current period, the sphere of collaboration is broadening, drawing teachers into more active civic engagement with the wider community. (2008:370)

The characteristics that Adler et al. (2008) argued are indicative of collaborative community include: “growth in organic division of labor by conscious collaboration; collaborative interdependence, both horizontal and vertical; more global, open ties, as well as stronger local ties”; the values of “contribution, concern, honesty, collegiality, [and] value-rationality; simultaneously high collectivism and individualism; simultaneously high particularism and universalism, and interdependent self-construal” (366). Figure 3.8 demonstrates the relational mechanisms of a community of professionalized practice.

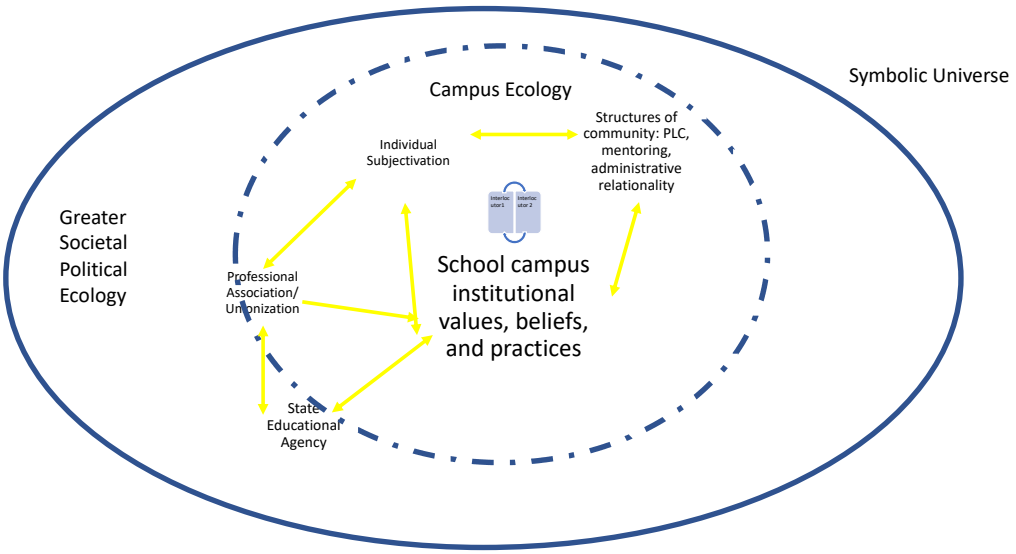

Fig. 3.8: Model of a Constructivist Community of Professionalized Praxis

The larger exterior oval represents our ultimate symbolic reality—the bounded realm of the U.S. societal political ecology that includes private and public interest organizations such as economic entities (specific businesses and business collectives such as the chamber of commerce), overt political entities (such as governmental structures), and various special interest representations (such as state professional associations/unions). The interior, dotted line represents the proximate symbolic universe—a given school campus ecology, denoting the relational mechanisms and structures of individual subjectivation, structures of personal/interpersonal praxis, and the larger school institutional values, beliefs, and practice, which combine to create what Berger and Luckmann (1966) called "relevance structures" within the symbolic universe (98) The small communicative loop represents mechanisms of praxis as habitus, most meaningfully constructed at the interpersonal level. Because, as Berger and Luckmann

(1966) made clear, language is the fundamental mechanism of praxis and objectivation, interpersonal communicative relationality is a helpful starting point for the theory.

The agential subject is formed in relationship with other individuals and group associations, along with the larger institutional norms in a reflexive way—an ongoing dialectic according to which the individual and groups are reflexively formative of the other and the institution, while groups and institutions are likewise reflexively formative of the individual. At the proximate level, the relative staying power of early teachers will be reflective of the ongoing quantity and quality of linguistically mediated relational structures (such as the development of PLCs, mentoring, administrative/teacher collaboration, etc., as well as the virtue practices of honesty and concern) at the campus level. Similarly, the mediate mechanism for professionalization involves developing the knowledge-base and skill set demanded by a given profession. This theory emphasizes teacher preparation and professional development as mechanisms whereby a professional identity and ability is cultivated for meaningful subjective agency during practice.

Moving outward, individuals are also empowered, symbolically, by professional unionization/association, which creates greater, collective advocacy by lobbying among the larger societal political ecology for increased teacher social capital—in terms of occupational prestige, which is often determined by the symbolic capital of income and the relative socio-economic value of a profession relative to that of others. A second value to teacher unionization/professional membership and the symbolic/political capital afforded through effective lobbying of political structures is the potential for funding growth. Growing educational funding at the state and federal level will promote greater

early teacher efficacy in the form of enhanced curricular and instructional materials, which promotes early teacher agency and, as a corollary, perception of professional value. Therefore, the greater the level of individual or collective professional unionization/association membership will promote greater early teacher retention as a result of increased symbolic capital.

HYPOTHESES

Teacher Characteristic Variables

1) Younger, secondary, early teachers will be more likely to leave teaching than older early teachers.

2) White, secondary, early teachers will be more likely to leave teaching than non-white early teachers.

3) Female secondary, early teachers will be less likely to leaving teaching than male early teachers.

4) The greater educational attainment secondary, early teachers report (bachelor's, master's, etc.) the less likely a teacher will be to leave teaching.

5) Secondary, early teachers with an alternative certification will be less likely to leave teaching than teachers without completing an alternative certification.

6) Secondary, early teachers who report holding a state certification or those who will attain a state certification after the completion of some prerequisites will be more likely to stay in teaching than those holding no certification.

7) Secondary, early teachers who are nationally board certified will be less likely to leave teaching than those who do not have a national board certification.

8) Secondary, early teachers who are members is a teachers' union or similar professional organization will be less likely to leave teaching than teachers who do not have similar membership.

9) Secondary, early teachers who convey a higher salary satisfaction will be less likely to leave teaching than those who convey lower salary satisfaction.

10) Secondary, early teachers who report a higher base teaching salary will be less likely to leave teaching than those who make less.

11) Secondary, early teachers who work, on average, more hours a week will be more likely to leave teaching than those who report working less hours.

These teacher baseline hypotheses are appropriate for this study because they are reflective of standard variables for a human study. Teacher compensation is a needed variable because income/compensation levels reflect both real-world buying power, potentially contributing to the overall comfort of one's fiscal life, as well as being an important measure of professional capital and value relative to other professions in a given society.

Teacher Support and Relational Variables

12) Secondary, early teachers who perceive higher levels of parental support will be less likely to leave teaching than those who perceive less support.

13) Secondary, early teachers who perceive a higher level of administrative support will be less likely to leave teaching than those who perceive a lower level of administrative support.

14) Secondary, early teachers who perceive a higher level of communication from administration/individual administrators will be less likely to leave teaching than those who perceive a lower level of communication from the administration.

15) Secondary, early teachers who perceive that the staff are recognized for their work will be less likely to leave teaching than those who perceive less recognition.

16) Secondary, early teachers who are assigned a mentor teacher will be less likely to leave teaching than those who are not assigned a mentor.

17) Secondary, early teachers who participate in a campus induction program will be less likely to leave teaching than those who do not participate in teacher induction.

18) Secondary, early teachers who have a common PLC or similar regularly scheduled time for professional collaboration will be less likely to leave teaching than those who do not.

These early teacher support variables are important because they address a range of mechanisms/resources through which teachers are either formed as competent and confident professional educators, or as early teachers' sense of professional identity is pre-empted or eroded, which should correlate if not reflect causality in terms of a teacher's anticipated resilience to remain teaching or to leave teaching.

Teacher Preparation and Development Variables

19) Secondary, early teachers who report a higher level of preparation will be less likely to leave teaching than those who report a lower level of preparation.

20) Secondary, early teachers who took undergraduate or graduate coursework in pedagogy will be less likely to leave teaching than those who do not.

21) Secondary, early teachers who participate in a variety of professional development activities during their first year of teaching will be less likely to leave teaching than those who did not.

These teacher preparation and development variables are important because early teacher preparation/professional development and the correlating sense of self-efficacy early teachers demonstrate are important to measuring early teacher self-perceptions as professionals as they begin their career and continue to develop during their first five years of service. Given that most teachers will have undergone some sort of education directed towards both professional credentialing/licensure and practical implementation, this variable will help determine the sense of professional identity with which early teachers begin their professional practice.

Teacher Work Environment Variables

22) Secondary, early teachers who convey greater satisfaction with the work environment are less likely to leave teaching than teachers who convey greater satisfaction.

23) Secondary, early teachers who perceive greater teacher autonomy will be less likely to leave teaching than those who perceive less teacher autonomy.

24) Secondary, early teachers who convey reduced enthusiasm are more likely to leave teaching than those who perceive the same level of enthusiasm as when they started teaching.

These teacher work environment, autonomy, and burnout variables are important because they reflect important considerations that emerge in the literature related to early teacher attrition (Ingersoll and May 2012; Kelly and Northrop 2015).

School Context and Student-Level Variables

25) Secondary, early teachers teaching in urban, suburban, or town contexts are more likely to leave teaching than those working in rural schools.

These school context variables are needed because they are focal covariate measures of teacher attrition in the literature, revealing a statistically significant correlation in specific studies (Ingersoll and May 2012; Shen et al. 2012; Podolsky et al. 2016).

26) Secondary, early teachers who perceive student poverty to be more of a problem on campus will be more likely to leave teaching than those who perceive student poverty to be less of a problem.

27) Secondary, early teachers who perceive student misbehavior to be more of a problem on campus will be more likely to leave teaching than those who perceive student misbehavior to be less of a problem.

These student population variables are needed because they address aspects of teaching that contribute substantively to the professional workload in terms of additional tasking (e.g., individualized educational needs of students and ongoing student behavioral interventions), both of which have the possibility to add to or erode an early teacher's sense of professional empowerment and efficacy.

CHAPTER IV

DATA AND METHODS

This study analyzes and evaluates the career status of secondary, early teachers and whether teachers chose to stay in the teaching profession or leave the profession for some alternative. The temporal frame for this study is the 2007-08 school year through the 2008-09 school year. Specifically, this study analyzes and evaluates the factors that predict teachers' exodus from the teaching career during this temporal window. The present chapter discusses the data and sample designs of the BTLS, developed by the NCES and is a sub-study of the SASS the primary data collection method from the NCES from 1987-2011. The chapter then describes each variable and measurement and closes by describing event history analysis with Cox regression, the method of analysis.

DATA

Data for this study was collected by the BTLS beginning during the 2007-08 school year (Gray and Taie 2015). The data presents both personal characteristics (e.g., age, gender) and attitudes that factor in the choices that teachers make to either stay in the field of teaching, transfer to a new school or district, or to leave the profession entirely (Gray and Taie 2015). The BTLS was developed, implemented, and processed by the United States Census Bureau between 2007-08 and 2011-12, with five waves of panel data collection in total (Gray and Taie 2015). The SASS and BTLS employ complex sample designs—stratifying the school sample, oversampling new teachers, and sampling with differential probabilities (Gray and Taie 2015). Data for Wave 1 was collected by the 2007-08 SASS beginning in August and ending in June of each respective year (Gray

and Taie 2015). The BTLS is a nationally representative data collection with the cohort of beginning teachers (sample size) of approximately 1,990 first-year public school teachers (Gray and Taie 2015). Data for the second wave was gathered in 2008-09 by the Teacher follow-up Survey (TFS) from February 2009 to August 2009 (Gray and Taie 2015). Data for the following three years were collected from January through June of each respective year. The initial wave of data collection was conducted by a mailed paper questionnaire with field interview follow-ups as needed. Waves 2-5 data was collected via a web instrument, but a telephone follow-up interview was implemented for each year to subsidize data collection, though not the primary means of data collection during any year (Gray and Taie 2015). The response rate for the BTLS 2007-08 wave was 73 percent, 84 percent for the second wave, 86 percent for the third wave, 84 percent for the fourth wave, and 78 percent for the fifth wave (Gray and Taie 2015).

As the data source for this study, the BTLS presents a number of advantages. The sample is stratified and weighted for national representation, which warrants generalized conclusions about the U.S. secondary, early teaching workforce. The BTLS is an expansive study, eliciting a range of responses such as individuals' demographics, to an extensive range of professional teaching considerations that coalesce, forming a sufficiently complex presentation of predictors as to whether given teachers stayed or left the teaching profession and why they made that choice. Because the BTLS is nationally representative and provides such an expansive set of predictors/measurements, it is an appropriate data set for answering the research question(s) of this dissertation.

SAMPLE

The focal population for this study was teachers in the United States beginning their first year of teaching during the 2007-08 school year, working in secondary schools (grades 6-12) in the United States. The overall N was 1,990 participants and included teachers working in grades PK-12; however, the data were first restricted to only include secondary teachers who taught grades 6-12 and provided a valid answer to the question on exiting the teaching profession. The restricted sample size was 1,042.

VARIABLES AND MEASUREMENTS

Dependent Variable

Because this dissertation studies early, secondary teacher attrition from the teaching profession, the dependent variable for this study is the status variable administered during Wave 2 of data collection. The dependent variable determines if a given participant has remained a teacher or has exited the teaching profession. The variable is nominal, based on the following question: "Which of the following three choices best describes your status?" The response categories include "1" for "leaver," "2" for "stayer," "3" for "mover," "-4" for "nonrespondent," and "-9" for "system missing." This variable was recoded as "1" for "leaver," "0" for "stayer/mover" and "system missing" for "all else."

Independent Variables

Independent variables are organized conceptually and are sequentially ordered to cultivate better model fit. Teacher characteristic variables include: age, race/ethnicity, gender, educational attainment, certification type, union or other similar professional membership, salary satisfaction, actual salary per $1,000, and average hours worked per week. Teacher support and relational variables include parental support, administrator

support, communicative administration, staff recognition, mentor, induction, and professional collaboration. Teacher preparation and development variables include a teacher preparation index computed by summing a variety of preparation categories, undergraduate/graduate pedagogy preparation, and special education, English-language learning, content area, and classroom management professional development. Teacher work environment variables include an index computed by summing a variety of teacher perceptions of the work environment, content autonomy, assessment autonomy, and reduced enthusiasm. School context and student-level variables include urbanicity of the school, student poverty, and student misbehavior a problem.

Teacher characteristic variables. **Age**. Age is an interval/ratio variable asking, "What is your year of birth?"

White. White is nominal a variable. This variable was created by dummy coding "1" for "white" and "0" for "all else."

Female. Female is a nominal variable, dummy coded as "1" for "female" and "0" equals "male."

Educational attainment. Educational attainment measures the highest degree attained by respondents and is a nominal variable, dummy coded as "1" for "master's degree, education specialist, or certificate of advance graduate studies" and "0" for "associates degree or no college degree and bachelor's degree."

Alternative certification. Alternative certification measures whether a teacher entered the teaching profession through a credentialing service outside of a university/college. The variable is dichotomous, dummy coded as "1" for "yes" and "0" for "no."

State certification 1. State certification includes four created dummy variables of a question about standard certification type/qualifications until full credentialing is awarded. The reference category for each dummy variable is "no certification." State certification 1 indicates that the respondent holds a "regular" or "standard" state certification, dummy coded as "1" for "regular or standard state certificate or advanced professional certification" and "0" for "else," where the reference is, "no certification."

State certification 2. State certification 2 indicates that a respondent currently holds a provisional certification but will receive a full certification after completing some additional requirements, dummy coded as "1" for "certificate issued after satisfying all requirements except the completion of a probationary period" and "0" for "else," where the reference is, "no certification."

State certification 3. State certification 3 indicates that a respondent holds a provisional certification but will receive certification after completion of additional coursework, student teaching, or passage of an exam before standard certification is granted, dummy coded as "1" for "certificate requires some additional coursework, student teaching, or passage of a test before regular certification can be obtained," where the reference is "no certification."

State certification 4. State certification 4 indicates that a respondent holds a provisional certification but will receive certification after completion of a certification program, dummy coded as "1" for "certificate issued to persons who must complete a certification program in order to continue teaching," where the reference is "no certification."

National board certification. National board certification measures whether a given respondent has achieved nationally board certification status. The measurement is dummy coded with "1" for "yes" and "0" for "no."

Union membership. Union membership measures whether a given respondent is a member of a union or similar professional association. The measurement is dummy coded as "1" for "yes" and "0" for "no."

Salary satisfaction. Salary satisfaction measures the perceived satisfaction respondents demonstrates regarding their salary. This is an ordinal variable asking, "To what extent do you agree or disagree with each of the following statements: "I am satisfied with my teaching salary," reverse recoded as "1" for "strongly disagree," "2" for "somewhat agree," "3" for "somewhat agree," and "4" for "strongly agree."

Actual salary per $1000. Actual salary per $1,000 measures the base pay of teachers for the school year. This variable is rounded to the nearest "$1,000" dollar.

Hours worked per week. This is an interval/ratio variable asking, "Including hours spent during the school day, before and after school and on weekends, how many hours do you spend on all teaching and other school-related activities during a typical FULL WEEK at this school?"

Teacher support and relational variables. **Parental support.** Parental support is an ordinal variable measuring to what extent respondents agree that they are supported by parents. This variable is reverse recoded as "1" for "strongly disagree," "2" for "somewhat disagree,' "3" for somewhat agree" and "4" for "strongly agree," and "system missing" for "all else."

Administrator support. Administrator support asks if teachers received support in the form of "regular supportive communication with your principal, other administrators, or department chair." It is a nominal variable, dummy coded as "1" for "yes" and "0" for "no" and "system missing" for "else."

Communicative admin. Communicative admin. measures the degree to which respondents agree that campus administration is clear about the direction of the school and effectively communicates this vision/mission with teachers. Communicative admin. is an ordinal variable, reverse recoded as "1" for "strongly disagree," "2" for "somewhat disagree," "3" for "somewhat agree," "4" for "strongly agree," and "system missing" for "else."

Staff recognition. Staff recognition measures the degree to which respondents agree that staff members are recognized for their work. The variable is ordinal, reverse recoded as "1" for "strongly disagree," "2" for "somewhat disagree," "3" for "somewhat agree," "4" for "strongly agree," and "system missing" for "else."

Mentor. Mentor provided measures whether teachers were provided a mentor during the school year. The variable is dichotomous, dummy coded as "1" for "yes" and "0" for "no."

Induction. Induction measures whether teachers were provided access to or required to attend an ongoing orientation to working in the school/district and professional development. Induction is dichotomous variable, dummy coded as "1" for "yes" and "0" for "no."

Professional collaboration. Professional collaboration measures whether teachers were provided time to regularly meet during the work week with a group of

teachers who teach the same content area or grade. Professional collaboration is a dichotomous variable, dummy coded as "1" for "yes" and "0" for "no."

Teacher preparation and development variables. **Preparation index.** Preparation index is a composite of four ordinal questions that measure teacher self-perception of preparation in focal areas of instruction. The measurement asks, "In your first year of teaching, how well prepared were you to: (1) handle a range of classroom management or discipline situations; (2) use a variety of instructional methods, (3) teach your subject matter; and (4) assess students?" The response categories include "1" for "not at all prepared," "2" for "somewhat prepared," "3" for "well prepared," "4" for "very well prepared", and "system missing" for "all else." The four indicators were summed to create a new scale, as the creation of this scale is justified because the four initial indicators demonstrate a Cronbach's Alpha of .760.

Under/grad pedagogy prep. Under/grad pedagogy prep. measures whether respondents received either undergraduate or graduate courses in pedagogy. The measurement is a dichotomous variable, dummy coded as "1" for "yes" and "0" for "no."

Special education professional development. Special Ed PD is a nominal variable asking, "In the past 12 months, have you participated in any professional development on how to teach students with disabilities?" The response categories include "1" for "yes" and "2" for "no." The variable was dummy coded as "1" for "yes" and "0" for "all else."

English language learner (ELL) professional development. ELL PD is a nominal variable asking, "In the past 12 months, have you participated in any professional development on how to teach limited-English proficient students?". The

response categories include “1” for “yes” and “2” for “no.” The variable was dummy coded as “1” for “yes” and “0” for “all else.”

Content area professional development. Content area PD is a nominal variable asking, “In the past 12 months, have you participated in any professional development activities specific to and concentrating on the content of the subject(s) you teach?” The response categories include “1” for “yes” and “2” for “no.” The variable was dummy coded as “1” for “yes” and “0” for “all else.”

Classroom management professional development. Classroom management PD. is a nominal variable asking, “In the past 12 months, have you participated in any professional development activities that focused on student discipline and management in the classroom?” The response categories include “1” for “yes” and “2” for “no.” The variable was dummy coded as “1” for “yes” and “0” for “all else.”

Teacher work environment variables. **Work environment index.** Work environment index is a composite of three ordinal questions that measure the degree to which a given respondent is satisfied with aspects of the school/work environment. The three indicators are each ordinal variables asking, “To what extent do you agree or disagree with each of the following statements: (1) the teachers at the school like being here; (2) I would describe us as a satisfied group; and, (3) I like the way things are run at this school?” The indicators were reverse coded with “1” for “strongly disagree,” “2” for “somewhat disagree,” “3” for “somewhat agree,” and “4” for “strongly agree.” The index was created by adding these variables together. The index is justified because the reliability test showed a Cronbach’s Alpha of .816 for the three indicators.

Content area autonomy. Content area autonomy is an ordinal variable asking, "How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of your planning and teaching: Selecting content, topics, and skills to be taught?" with "1" for "no control," "2" for "minor control," "3" for "moderate control," and "4" for "a great deal of control."

Assessment autonomy. Assessment autonomy is an ordinal variable asking, "How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of your planning and teaching: Evaluating and grading students?" with "1" for "no control," "2" for "minor control," "3" for "moderate control," and "4" for "a great deal of control."

Reduced enthusiasm. Reduced enthusiasm is an ordinal variable measuring, "To what extent do you agree or disagree with each of the following statements: I don't seem to have as much enthusiasm now as I did when I began teaching." with "1" for "strongly agree," "2" for "somewhat agree," "3" for "somewhat disagree," and "4" for "strongly disagree." This variable was reverse recoded as "1" for "strongly disagree," "2" for "somewhat disagree," "3" for "somewhat agree," and "4" for "strongly agree."

School context and student-level variables. **Urbanicity.** Urbanicity measures the relative location of school that respondents worked in with "1" for "urban," "2" for "suburban," "3" for "town," and "4" for rural. This variable was dummy coded as "1" for "urban," "suburban," and "town," and "0" for "rural."

Student poverty problem. Student poverty problem measures a given respondent's perception of the extent that student poverty is a problem in the school. The measurement is an ordinal variable, reverse recoded as "1" for "not a problem," "2" for

"minor problem," "3" for "moderate problem," and "4" for "serious problem," and "system missing" for "all else."

Student misbehavior problem. Student misbehavior a problem measures a given respondent's perception of the extent that student misbehavior is a problem in the school. The measurement is an ordinal variable, reverse recoded as "1" for strongly disagree," "2" for "somewhat agree," "3" for "somewhat agree," and "4" for "strongly agree," and "system missing" for "all else."

LIMITATION OF DATA

The dataset is primarily limited because only data for Waves 1 and 2 are included on the disc the researcher received—both times requested. As a result of this limitation, only two years of data are considered instead of the full five years of the study. Five years of data collection would have benefitted this study because it would have enabled a temporal contour to the analysis, permitting identification of different determinants effect on secondary, early attrition at different points in a five-year span. This would have allowed for a more nuanced discussion of salient variables that is still lacking in the scholarly literature. Secondly, the dataset is limited because the specific questions/measurements were not conceived of by this researcher, which implicitly inhibits the theoretical targeting that this research presumes. More granular measurements of relational variables and a more comprehensive set of questions measuring perceptions of school-level variables may have provided additional texture and nuance to the results. Similarly, the BTLS reports 10 percent attrition for the 2007-08 school year, and only 12 percent attrition for the 2008-09 school year, far below the

reported rates of attrition from generally contemporaneous research findings of local, state, and national studies (Ingersoll and May 2012, Podolsky et. al. 2016).

METHODS OF DATA ANALYSIS

The method of analysis employed in this study of early teacher attrition is event history analysis. Event history analysis is a statistical technique for analyzing the temporal duration of an event from non-occurrence to occurrence (Allison 2014; Tabachnick and Fiddell 2013). The event presently studied is the time it takes for a teacher to leave/stay in the teaching profession. This technique is appropriate because the BTLS is a longitudinal collection of panel data. The particular event history analysis technique used in this research is the semiparametric method, which addresses causal relationships—the relationship between covariate(s), independent variable(s), and the dependent variable. Cox Proportional-Hazards model of analysis was used to model event (early teacher attrition from teaching) "rates as log-linear function of predictors, called covariates" (Tabachnick and Fidell 2013:531). Analysis was conducted using the statistical program IBM SPSS COXREG. The equation used for Cox Proportional-Hazards model is:

$$Ln\ h(t)/h_o = \Sigma B_i X_i$$

where $Ln\ h(t)/h_o(t)$ represents logged relative hazards that event will occur, X_i is a covariate, B is the regression coefficient for covariate X_i, and Σ is the sum of $B_i X_i$.

There are both theoretical and practical limitations to event history analysis, helpfully conveyed by Tabachnick and Fidell (2013). Given that event history analysis tries to determine when an event occurs relative to different covariates that effect when an event occurs, determining causality "cannot be attributed to the treatment unless

assignment to levels of treatment and implementation of those levels, with control, are properly experimental" (Tabachnick and Fidell 2013:513). One practical issue is that while descriptive use of event history analysis is not required, "regression forms of survival analysis in which covariates are assessed, multivariate normality, linearity, and homoscedasticity among covariates… often enhance the power of the analysis to form a useful linear equation of predictors" (Tabachnick and Fidell 2013:513).

CHAPTER V

FINDINGS

This chapter conveys the results of data analysis to examine the determinants of secondary early teacher attrition. The chapter presents the findings of descriptive analysis, correlation analysis, and event history analysis with Cox regression proportional hazards model.

DESCRIPTIVE ANALYSIS

Table 5.1 presents the means and standard deviations for all variables used in the analysis.

Early Teacher Attrition

The dependent variable is status, which measures whether secondary, early teachers stayed in the teaching workforce or existed. “Status” is dummy coded. Table 5.1 demonstrates that 10.1 percent (=.10 x 100) of early teachers exited the teaching profession overall during the first two years of data collection (which are the only two years of data to which this study had access), but nearly 90 percent of secondary early teachers remained in the teaching profession.

Teacher Characteristic Variables

Early teachers’ age is computed by subtracting the year respondents were born from 2007, which results in the age in years of respondents. The average age for early teachers was about 30 years. Eighty-four percent of early teachers were non-Hispanic white. Twenty-four percent of early teachers had a master’s degree, educational specialist

credential, or certificate of advanced graduate studies, whereas 76 percent of early teachers' highest level of education was the completion of a bachelor's degree, associate degree, or no college degree. Thirty-one percent of early teachers entered the teaching field through an alternative certification program. Of early teachers with a teaching certification, 44 percent of them entered teaching with a standard teaching certification or advanced professional certification. Nearly 19 percent of early teachers entered the teaching field with a provisional certification that still required the completion of a probationary period. About 17 percent of early teachers entered the teaching profession with provisional credentialing that required the completion of additional coursework, student teaching, or the passage of an exam before standard certification is granted. About 12 percent of early teachers entered the teaching profession with credentialing that requires the completion of a certification program to receive standard certification, where 9 percent of early teachers entered teaching with no teaching certification of any kind (no certification is the reference group). Nineteen percent of early teachers indicated that they entered teaching with a national board certification. Nearly 59 percent of early teachers reported membership in a teacher's union or similar professional organization. On average, early teachers somewhat agreed that they received a satisfactory salary (mean = 2.394). On average, early teachers reported making about $34,000 a year in base salary. On average, early teachers worked about 52 hours a week.

Table 5.1: Descriptive Statistics for Dependent Variable and Covariates

Variable Name	N	Mean	Standard Deviation
Status	1,106	0.101	0.302
Age	1,106	1977.5	8.487
White	1,106	0.84	0.367
Female	1,106	0.609	0.488
Educational Attainment	1,079	0.238	0.426
Alternative Certification	1,106	0.312	0.463
State Certification 1	1,106	0.443	0.497
State Certification 2	1,106	0.197	0.398
State Certification 3	1,106	0.166	0.373
State Certification 4	1,106	0.122	0.327
National Board Certification	1,087	0.19	0.393
Union Membership	1,091	0.588	0.492
Salary Satisfaction	1,099	2.394	0.964
Actual Salary Per/$1000	1,106	33.93	7.204
Hours Worked Per Week	1,106	52.38	16.364
Parental Support	1,101	2.437	0.853
Administrator Support	1,074	0.868	0.339
Communicative Admin.	1,100	1.509	0.721
Staff Recognition	1,099	1.8	0.766
Mentor	1,074	0.819	0.385
Induction	1,060	0.728	0.445
Professional Collaboration	1,075	0.468	0.499
Preparation Index	1,070	11.967	2.32
Under/Grad Pedagogy Prep.	1,102	0.819	0.386
Special Ed. PD	1,097	0.301	0.459
ELL PD	1,099	0.17	0.376
Content Area PD	1,100	0.658	0.474

Table 5.1: Descriptive Statistics for Dependent Variable and Covariates			
Classroom Management PD	1,097	0.505	0.5
Work Environment Index	1,001	6.247	1.485
Content Autonomy	1,094	2.868	1.035
Assessment Autonomy	1,096	0.372	0.533
Reduced Enthusiasm	1,092	1.775	0.931
Urbanicity	1,106	0.65	0.477
Student Poverty Problem	1,101	2.334	0.977
Student Misbehavior Problem	1,101	2.611	0.988

Teacher Support and Relationality Variables

On average, early teachers somewhat disagreed (Mean = 2.437) that they were supported by parents. Early teachers, on average, strongly disagreed (Mean = .0868) that the administration enforced campus behavior policies or supported individual secondary, early teachers when needed. Similarly, secondary, early teachers, on average, strongly to somewhat disagreed that the administration communicated effectively (Mean = 1.509). Early teachers, on average, strongly to somewhat disagreed (Mean = 1.800) that staff were recognized for their contribution. About 82 percent of early teachers worked with a mentor teacher. About 73 percent of early teachers participated in an induction program and about 47 percent of early teachers had an assigned collaboration period to work with content-area or a grade-level team of educators.

Teacher Preparation and Development Variables

On average, early teachers (Mean = 11.967) felt somewhat to well prepared to handle a range of classroom or discipline situations, use a variety of instructional methods, teach the subject matter, and assess students when they started teaching. About 17 percent of early teachers received professional development for teaching ELL students. Nearly 66 percent of early teachers received professional development for teaching their content area subject matter. Just over 50 percent of early teachers received professional development for classroom management.

Teacher Work Environment Variables

Early teachers, on average, somewhat disagreed to somewhat agreed (Mean = 6.247) that they would describe their teaching group as satisfied, that they liked being at the school, and that they liked the way things were run at the school. On average, early teachers felt they had minor to moderate control (Mean = 2.868) over what was taught in their classroom. Early teachers, on average, felt they had no to very little control (Mean = .372) over assessing their students. Similarly, early teachers, on average, strongly to somewhat disagreed (Mean = 1.775) that they had as much enthusiasm as they did when they began teaching.

School Context and Student-Level Variables

On average, about 65 percent of early teachers taught in either an urban/suburban/town context and about 35 percent of early teachers taught in a rural context. Early, teachers, typically, felt that student poverty was a minor to moderate problem (Mean = 2.334) and that student misbehavior was a minor to moderate problem (Mean = 2.611).

CORRELATIONAL ANALYSIS

Table 5.2 presents a correlational matrix for all covariates and the dependent variable "status." Correlational analysis was run using IBM SPSS to establish the degree of association among any two variables.

Teacher Characteristic Variables

The result of correlational analysis reveal that age has a statistically significant (.05), negative, weak association with the status of leaving teaching, indicating that older early teachers were less likely to leave teaching than younger ones. The white dummy variable is not significantly correlated with the status of leaving teaching at the .05 level, despite a negative, weak association. The female dummy variable has a weak, negative association with leaving teaching, but is not statistically significant at the .05 level. The educational attainment dummy variable has a positive, weak association with leaving teaching, but is not statistically significant at the .05 level. Alternative certification has a positive, weak association with leaving teaching. State Certification 1 has a negative, weak association with leaving teaching and the correlation coefficient is statistically significant at the .01 level, which means that early teachers who entered the profession with a standard certification were slightly less likely to leave teaching than early teachers without a standard certification. While none of the three state certification variables have a statistically significant correlation with the dependent variable, State Certification 2 has a negative, weak association with leaving teaching, while State Certification 3 and 4 have positive, weak associations with leaving teaching. National board certification has a negative, weak association with leaving teaching, but is not statistically significant. Union membership is statistically significant at the .01 level and has a negative, weak association with leaving teaching. So, early teachers who were members of a teachers'

union or similar professional organization were slightly less likely to leave teaching than those who were not members. Salary satisfaction does not have a statistically significant correlation with leaving teaching. Actual salary per $1,000 has a statistically significant negative, weak association with leaving teaching at the .01 level, suggesting that early teachers with a higher salary were less likely to leave teaching than those who made less. Hours worked per week does not have a statistically significant association with leaving teaching.

Teacher Support and Relational Variables

Parental support does not have a statistically significant association with leaving teaching. Administrator support has a statistically significant association with leaving teaching at the .05 level. Similarly, communicative administration has a statistically significant positive, weak association with leaving teaching at the .01 level. Staff recognition has a statistically significant positive, weak association with leaving teaching at the .01 level. Having a mentor is statistically significant at the .01 level and has a negative, weak association with leaving teaching. So, teachers who worked with a mentor were less likely to leave teaching than those who were not assigned a mentor. Induction is statistically significant at the .01 level, revealing a negative, weak association with leaving teaching. Professional collaboration does not have a statistically significant association with leaving teaching.

Teacher Preparation and Development Variables

The teacher preparation index is significant at the .01 level and has a negative, weak association with leaving teaching, indicating that better prepared teachers were less likely to leave teaching. Under/graduate pedagogy prep. has a statistically significant

negative, weak association with leaving teaching at the .01 level. Special education PD is not statistically significant, though it has a negative, weak association with leaving teaching. ELLs' PD does not have a statistically significant effect on leaving teaching, though it has a positive, weak association. Content area PD does not have a statistically significant association with leaving teaching. Classroom management PD has a negative, weak association with leaving teaching, but is not statistically significant.

Teacher Work Environment Variables

The work environment index has a statistically significant, negative, weak association with leaving teaching at the .01 level, meaning that early teachers who were more satisfied with the work environment were less likely to leave teaching than those who were less satisfied with the work environment. Content autonomy does not have a statistically significant correlation with leaving teaching. Assessment autonomy does not have a statistically significant correlation with leaving teaching. Reduced enthusiasm has a statistically significant positive, weak association with leaving teaching at the .01 level.

School Context and Student-Level Variables

Urbanicity does not have a statistically significant correlation with leaving teaching and neither does student poverty as a problem. Student misbehavior as a problem has a statistically significant negative, weak association with leaving teaching at the .05 level.

Initial correlational analysis revealed high correlations among some variables, which were used to create the indexes for teacher preparation and work environment. The coefficients among all covariates reveal no correlation that has a magnitude more than a moderate association, so multicollinearity does not appear to be a problem.

Table 5.2 Correlation Matrix of Covariates

	Status	Age	White	Female	Educational Attainment	Alternative Certification
Status	1					
Age	-.072*	1				
White	-.041	.060*	1			
Female	-.014	.098**	-.024	1		
Educational Attainment	.048	-.232**	-.066*	-.006	1	
Alternative Certification	.020	-.206**	-.083**	-.043	.074	1
State Certification 1	-.088**	.137**	-.059*	.067*	-.050	-.349**
State Certification 2	-.016	.019	.084**	-.047	.025	-.112**
State Certification 3	.027	-.780**	-.042	-.016	.039	.201**
State Certification 4	.030	-.087**	.061*	-.034	-.022	.363
National Board Certification	-.009	.098**	.002	-.022	-.046	-.150**
Union Membership	-.088**	.063*	.061*	.056	.011	-.119**
Salary Satisfaction	.045	-.046	-.061*	-.030	.026	.008
Actual Salary Per/$1000	-.060**	-.033	.122	-.040	.292**	.054
Hours Worked Per Week	-.042	.017	.075**	-.003	-.035	-.020
Parental Support	-.005	.009	-.045	.019	.044	.038
Administrator Support	-.068*	.003	-.033	.006	-.053	-.033
Communicative Admin.	.082**	.028	.003	.017	.042	-.013
Staff Recognition	.088**	.012	.026	.003	.060*	-.025

*p ≤ .05, **p ≤. 01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	Status	Age	White	Female	Educational Attainment	Alternative Certification
Mentor	-.129**	.054	.019	.001	-.035	-.009
Induction	-.142**	.045	.064*	-.053	-.006	.003
Professional Collaboration	-.015	.036	-.108**	.021	.050	.057
Preparation Index	-.109**	.090**	.009	.023	.070*	-.211**
Under/Grad Pedagogy Prep.	-.091**	.114**	.120**	.053	.045	-.239**
Special Ed. PD	-.015	-.047	-.053	.001	-.022	.054
ELL PD	.011	.003	-.049	.029	.055	.046
Content Area PD	-.038	-.006	-.028	.050	.007	.017
Classroom Management PD	-.031	-.019	-.066*	.004	-.064*	.041
Work Environment Index	-.102**	.002	.091**	-.030	-.030	-.070*
Content Autonomy	-.042	.015	.033	-.064	.002	-.115**
Assessment Autonomy	.028	-.019	.012	.022	-.042	-.025
Reduced Enthusiasm	.181**	.074*	.024	.025	.032	.054
Urbanicity	-.040	-.003	-.062*	-.012	.104**	.042
Student Poverty Problem	.026	.039	.068*	.000	.009	-.085**
Student Misbehavior Problem	-.076*	-.088**	.046	.017	-.001	-.046

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	State Certification 1	State Certification 2	State Certification 3	State Certification 4	National Board Certification	Union Membership
Status						
Age						
White						
Female						
Educational Attainment						
Alternative Certification						
State Certification 1	1					
State Certification 2	-.435**	1				
State Certification 3	-.399**	-.217**	1			
State Certification 4	-.341**	-.185**	-.270**	1		
National Board Certification	.207**	.048	-.122**	-.140**	1	
Union Membership	.100**	.084**	-.049	-.094**	.092**	1
Salary Satisfaction	-.042	.042	-.003	-.002	-.026	-.027
Actual Salary Per/$1000	-.082**	.018	.055	.032	-.045	.113**
Hours Worked Per Week	.000	.049	-.045	.022	-.002	.020
Parental Support	-.031	.026	.010	.036	-.053	-.031
Administrator Support	.050	-.065*	-.031	.013	.031	-.041
Communicative Admin.	-.039	.103**	-.019	-.013	-.031	.006
Staff Recognition	-.049	.084**	.022	-.026	-.007	.031

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	State Certification 1	State Certification 2	State Certification 3	State Certification 4	National Board Certification	Union Membership
Mentor	-.012	.033	.011	.037	.035	.082**
Induction	.018	.061*	-.009	.013	.006	.115**
Professional Collaboration	-.011	-.046	.032	.027	-.046	-.026
Preparation Index	.137**	.060*	-.030	-.166**	.072*	.049
Under/Grad Pedagogy Prep.	.166**	.087**	-.027	-.178**	.008	.075**
Special Ed. PD	-.038	-.043	.073*	.051	.010	-.007
ELL PD	-.016	.012	.059*	-.012	.023	-.064*
Content Area PD	.044	-.006	.019	-.048	-.017	.066*
Classroom Management PD	.007	-.073*	.027	.092**	.015	-.038
Work Environment Index	.083**	-.055	-.012	-.025	.023	.024
Content Autonomy	.046	.029	-.023	-.110**	.090**	.015
Assessment Autonomy	.050	-.035	.007	-.025	.038	.053
Reduced Enthusiasm	-.062*	.034	.027	.011	.004	-.062*
Urbanicity	-.042	.046	-.019	-.003	-.007	.066*
Student Poverty Problem	.073*	-.018	-.034	-.072*	.018	-.003
Student Misbehavior Problem	.031	.030	-.057*	-.021	.012	-.021

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	Salary Satisfaction	Actual Salary Per/$1,000	Hours Worked Per Week	Parental Support	Administrator Support	Communicative Admin.
Status						
Age						
White						
Female						
Educational Attainment						
Alternative Certification						
State Certification 1						
State Certification 2						
State Certification 3						
State Certification 4						
National Board Certification						
Union Membership						
Salary Satisfaction	1					
Actual Salary Per/$1000	-.152**	1				
Hours Worked Per Week	.066*	.040	1			
Parental Support	.036**	.210**	.038	1		
Administrator Support	-.129**	-.061	.028	-.209**	1	
Communicative Admin.	.040	.130**	.002	.212**	-.268**	1
Staff Recognition	.040	.236**	.036	.295**	-.333**	.548**

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	Staff Recognition	Mentor	Induction	Professional Collaboration	Preparation Variables Index	Under/Grad Pedagogy Prep.
Mentor	-.200**	1				
Induction	-.083**	.331**	1			
Professional Collaboration	-.152**	.163**	.094**	1		
Preparation Index	-.091**	.084**	.083**	.026	1	
Under/Grad Pedagogy Prep.	.004	.054	.080**	.153**	.180**	1
Special Ed. PD	-.074*	.144**	.070*	.063*	.053	.011
ELL PD	.008	.017	.075*	.061*	.038	.013
Content Area PD	-.092**	.082**	.094**	.074*	.145**	.070*
Classroom Management PD	-.115**	.145**	.129**	.062*	.015	-.004
Work Environment Index	-.523**	.171**	.072*	.102**	.156**	.062*
Content Autonomy	-.062*	-.001	-.103**	-.113**	.071*	.021
Assessment Autonomy	-.051	-.023	-.040	-.044	.065*	-.032
Reduced Enthusiasm	.227**	-.063*	-.011	-.103**	-.246**	-.048
Urbanicity	.025	.050	.125**	.152**	.009	.005
Student Poverty Problem	-.229*	.018	-.033	-.019	.052	.004
Student Misbehavior Problem	-.225**	.013	.048	.059*	.149**	.034

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	Special Ed. PD	ELL PD	Content Area PD	Classroom Management PD	Teacher Work Environment index	Content Autonomy
Mentor						
Induction						
Professional Collaboration						
Preparation Index						
Under/Grad Pedagogy Prep.						
Special Ed. PD	1					
ELL PD	.257**	1				
Content Area PD	.185**	.116**	1			
Classroom Management PD	.263**	.181**	.107**	1		
Work Environment Index	-.002	-.013	.028	-.011	1	
Content Autonomy	.010	-.032	.012	-.007	.112**	1
Assessment Autonomy	-.014	-.064*	-.074*	-.033	.094**	.287**
Reduced Enthusiasm	-.012	.054	-.038	.022	-.383**	-.104**
Urbanicity	.010	.026	.140**	.028	-.025	-.135**
Student Poverty Problem	-.094**	-.086**	-.020	.287**	.287**	.059*
Student Misbehavior Problem	.010	-.023	-.004	-.039	.383**	.082**

*p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 5.2 Correlation Matrix of Covariates (Cont.)

	Assessment Autonomy	Reduced Enthusiasm	Urbanicity	Student Poverty Problem	Student Misbehavior Poverty
Mentor					
Induction					
Professional Collaboration					
Preparation Index					
Under/Grad Pedagogy Prep.					
Special Ed. PD					
ELL PD					
Content Area PD					
Classroom Management PD					
Work Environment Index					
Content Autonomy					
Assessment Autonomy	1				
Reduced Enthusiasm	-.114**	1			
Urbanicity	-.087**	.015	1		
Student Poverty Problem	.063*	-.129**	-.080**	1	
Student Misbehavior Problem	.041	-.267**	-.046	.328**	1

*p ≤ .05, **p ≤ .01, ***p ≤ .001

EVENT HISTORY ANALYSIS WITH COX REGRESSION

The focus of this study is to determine whether respondents exit the teaching profession or not. Hence, event history analysis with Cox Regression is used to analyze the BTLS 2007-09 waves of data to assess the effect of the covariates on secondary, early teacher attrition or leaving the teaching profession. This study presumes that the effect of covariates on the relative hazard of leaving the teaching profession is constant or proportional over time, so Cox regression with proportional hazards model is used in this analysis. Because event history analysis studies an event from non-occurrence to occurrence, the cases that have not experienced the event are referred to as "censored" cases (Allison 2014; Tabachnick and Fidell 2013). To analyze the data, this study uses sequential modeling, beginning with the baseline teacher characteristics, and adding conceptually related groups of variables in subsequent models. Model 1 only includes teacher characteristic variables; Model 2 adds teachers support and relationality variables to Model 1; Model 3 adds teacher preparation, development, and work environment variables to Model 2; Model 4 adds teacher autonomy and burnout variables to Model 3; and Model 5 adds school context, and student-level variables to Model 4. Sequential modeling is an appropriate technique because it enables the researcher to assess how the effects of variables in simpler models change after adding new covariates and how the overall χ^2 values change after adding additional covariates.

Table 5.3 shows five sequential Cox regression proportional hazards models predicting secondary early teacher attrition. The overall chi square (χ^2) of Model 1 is 25.111, with 14 degrees of freedom. The overall χ^2 of Model 2 is 48.957 ($p \leq .05$), with

21 degrees of freedom. The overall χ^2 of Model 3 is 58.479 ($p \leq .01$), with 31 degrees of freedom. The overall χ^2 of Model 4 is 80.361 ($p \leq .001$), with 31 degrees of freedom. For Model 5, the overall χ^2 is 93.457 ($p \leq .001$), with 34 degrees of freedom. Model 5, the full model including all predictors has the highest overall χ^2 value by adding three predictors to Model 4. The increase in overall model χ^2 from Model 4 to Model 5 is 13.096 (93.457 – 80.361 = 13.096) and is significant at the .01 level for the difference of 3 degrees of freedom between Model 5 and Model 4. Hence, Model 5 is the best fitting model and therefore the focus of interpretations.

Teacher Characteristic Variables

This study's first hypothesis that younger early teachers are more likely to leave teaching than older teachers, controlling for all other variables, is not supported by the findings, despite the expected negative coefficient of age, because the coefficient of age is not statistically significant in any of the five models at the .05 level. Similarly, holding all other variables constant, the coefficient for white is not statistically significant in any of the five models; thus, the results do not support this study's second hypothesis. Controlling for all other variables, the coefficient for the female dummy variable is not statistically significant in any of the five models, and the sign of the coefficient moves from positive in Model 1 to negative in the subsequent four models, though the negative association was predicted. These findings do not support the third hypothesis. Educational attainment, holding all other variables constant, does not have a statistically significant effect on the likelihood early teachers will exit the teaching profession, contradicting the study's fourth hypothesis.

The fifth hypothesis that early teachers who enter teaching with an alternative certification are less likely to leave teaching than early teachers who do not, controlling for all other variables, is supported by the findings. The coefficient of this variable is negative in each of the five models, but the results are only significant in Models 4 and 5. The odds ratio (.595) means that early teachers who entered teaching with an alternative certification were about 40 percent less likely to leave teaching than early teachers who did not. Similarly, as hypothesized sixth, early teachers who entered teaching with a standard certification were less likely to leave than teachers with no certification, holding all other variables constant. In Model 5, early teachers who entered teaching with a standard certification were about 65 percent less likely to leave teaching than those who entered with no certification ($p \leq .01$). The coefficients for State Certification 1 are statistically significant in all five models and the direction is consistently negative. Early teachers who entered teaching with a certification that hinges on the completion of some additional requirements, controlling for all other variables, is statistically significant in the first, fourth, and fifth models, and the direction of the effect is consistently negative, which agrees with the hypothesis. In Model 5, early teachers who entered teaching with this kind of certification were 55 percent less likely to leave teaching than those with no certification, but this coefficient is only marginally significant at the .061 level and requires further testing. State certification 3 and 4, on the other hand, are not statistically significant, and do not support the sixth hypothesis, despite the expected negative direction of the effect. The coefficient for the variable national board certification is not statistically significant, so it does not support the seventh hypothesis.

This study's eighth hypothesis that early teachers who belong to a union or similar professional organization are less likely to leave teaching than those who do not, controlling for all other variables, is not supported by these findings as the results are not statistically significant, in spite of the expected negative coefficient. Moreover, the nineth hypothesis that early teachers who are more satisfied with their salary are less likely to leave teaching than those who are less satisfied, controlling for all other variables, is not supported by the findings because the coefficients are not statistically significant in any of the models. The tenth hypothesis that early teachers who make a higher base salary will be less likely to leave teaching than those who make less, controlling for all other variables, is not supported by these findings because the coefficients are not statistically significant, though the negative direction of the effect was anticipated.

Table 5.3: Cox Regression Proportional Hazards Model Predicting Early Secondary Teacher Attrition

	Model 1		**Model 2**		**Model 3**		**Model 4**		**Model 5**	
Predictor	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)	B	Exp(B)
Age	-.012 (.295)	0.988	-.014 (.237)	0.986	.013 (.281)	0.987	-.023 (.064)	0.977	0.024***** (.052)	0.976
Race/Ethnicity	.009 (.974)	1.009	-.090 (.742)	0.914	-.062 (.824)	0.94	-.025 (.930)	0.975	'-.032 (.910)	.968
Gender	-.023 (.912)	0.978	.086 (.680)	1.090	-.052 (.805)	0.949	-.136 (.528)	0.977	-.123 (.572)	0.884
Educational Attainment	.270 (.253)	1.309	.278 (.245)	1.320	.376 (.127)	1.456	.235 (.355)	0.975	0.194 (.451)	1.214
Alternative Certification	-.267 (.765)	0.765	-.229 (.348)	0.795	-.453 (.080)	0.636	-.538***** (.044)	0.873	-.530***** (.046)	0.588
State Certification 1	-1.077**.002)	0.341	-.953**(.008)	0.385	-.808***** (.029)	0.446	-.792***** (.037)	1.265	-.826***** (.033)	0.438
State Certification 2	-.832***** (.026)	0.435	-.702 (.496)	0.496	-.494 (.224)	0.610	-.546 (.196)	0.584	-.557 (.192)	0.573
State Certification 3	.444 (.202)	0.642	-.355 (.332)	0.701	-.243 (.531)	0.791	-.242 (.536)	0.453	-.274 (.491)	0.76
State Certification 4	-.642 (.113)	0.526	-.505 (.231)	0.603	-.434 (.301)	0.648	-.383 (.789)	0.58	-.348 (.429)	0.706
National Certification	.241 (.358)	1.273	.274 (.301)	1.132	.231 (.393)	1.26	.260 (.334)	0.785	0.270 (.316)	1.310
Unionization	-.322 (.120)	0.725	-.223 (.297)	0.8	-.244 (.783)	0.783	-.223 (.310)	0.681	-.226 (.309)	0.798
Salary Satisfaction	.101 (.329)	1.106	.056 (.615)	1.058	.075 (.503)	1.078	.025 (.827)	1.025	0.031 (.791)	1.031
Actual Salary per/1000	-.017 (.224)	0.983	-.016 (.292)	0.984	-.018 (.248)	0.982	-.012 (.444)	0.988	-.011 (.487)	0.989
Average Hours Worked/Week	-.002 (.792)	0.998	-.002 (.805)	0.998	-.003 (.608)	0.997	-.005 (.427)	0.995	-.004 (.485)	0.996
Parent Support			-.111 (.390)	0.895	-.122 (.356)	0.885	-210 (.128)	.810	-.173 (.227)	0.841
Administrator Support			-.219 (.459)	0.804	-.259 (.388)	0.772	-.177 (.565)	0.838	-.206 (.509)	0.814
Communicative Administration			.228 (.123)	1.256	.218 (.144)	1.244	.164 (.276)	1.178	0.174 (.274)	1.190
Staff Recognition			.132 (.410)	1.141	.089 (.583)	1.093	-.009 (.955)	0.991	0.031 (.856)	1.032
Mentor			-.343 (.177)	0.71	-.360 (.163)	0.698	-.333 (.207)	0.717	-.323 (.222)	0.724
Induction			-.499***** (.025)	0.607	-.392 (.090)	0.676	-.442***** (.061)	0.643	-.426 (.076)	0.653

Table 5.3: Cox Regression Proportional Hazards Model Predicting Early Secondary Teacher Attrition

Professional Collaboration		.252 (.251)	1.287	.283 (.201)	1.327	.354 (.118)	1,424	0.348 (.128)	0.128
Teacher Preparation Index				-.138** (.003)	0.871	-.076 (.120)	0.927	-.077 (.117)	0.925
Under/Grad Pedagogy Courses				.226 (.375)	0.798	-.224 (.394)	0.799	-.197 (.458)	0.822
Teacher Development Index				.001 (.989)	0.999	-.021 (.809)	0.979	-.015 (.861)	0.985
Teacher Autonomy Index						.-036 (.308)	0.965	-.037 (.307)	0.964
Teacher Burnout Index						.264***(.000)	1.302	0.257***(.000)	1.293
Teacher Work Environment Index								0.050 (.627)	1.051
Urban Context								.006 (.983)	1.006
Suburban Context								.108 (.681)	1.114
Poverty a Problem								.152 (.217)	1.164
Student Misbehavior a Problem								-.132 (.285)	.876
-2 Loglikelihood	1381.198		1324.583		1284.807		1238.271		1235.483
Overall $\chi 2$	25.111		48.957		57.376		78.159		81.843
Degrees of Freedom	14		21		24		26		31
N	1204		1204		1204		1204		1204

Lastly, this study's eleventh hypothesis that early teachers who work more hours a week, on average, compared to those who work less will be more likely to leave teaching, controlling for all other variables, is not supported by the findings because the coefficient is not statistically significant, nor was the direction of the effect predicted.

Teacher Support and Relational Variables

The twelfth hypothesis that secondary, early teachers who feel supported by parents to a greater degree will be less likely to leave teaching than teachers who feel less support from parents, controlling for all variables, is not supported because the coefficient is not statistically significant, though the direction of the effect is consistent with the prediction. Early teachers who feel supported by their administrators will be less likely to leave teaching, holding all other variables constant, is not supported by the finding, although the direction of the effect is consistent with the prediction. Similarly, secondary, early teachers who feel like administrators are clear about the direction of the school and effectively communicate the vision/mission with teachers will be less likely to leave teaching, controlling for all other variables, is not supported by the findings. The coefficient for the variable staff recognition is not statistically significant on teacher leaving, controlling for all other variables, so the fifteenth hypothesis is not supported by the finding.

The sixteenth hypothesis that secondary, early teachers who work with a more experienced mentor teacher will be less likely to leave teaching than those who did not, holding all other variables constant, is not supported by the findings, because the coefficients in Models 2 through 5 do not have a statistically significant effect on teacher attrition. The seventeenth hypothesis that secondary, early teachers who participated in an

induction program will be less likely to leave teaching than those who do not, controlling for all other variables, is supported by the finding. In Model 5, secondary, early teachers who participated in an induction program to orient themselves to campus and district, policies, mechanics, and instructional priorities are about 36 percent less likely to leave teaching compared to those who did not participate in an induction program. Induction is a salient variable because it is consistently statistically significant across several models. The eighteenth hypothesis that secondary, early teachers who feel a more durable sense of professional collaboration, including time each week to plan with a content-area or grade-level team will be less likely to leave teaching than those who do not, holding all other variables constant, is not supported by the findings because the coefficient is not statistically significant on leaving and the direction of the effect is not expected.

Teacher Preparation and Development Variables

The nineteenth hypothesis that secondary, early teachers who feel more prepared will be less likely to leave teaching than those who feel less prepared, controlling for all other variables, is supported by the finding. The coefficient is statistically significant at the .05 level. On average, secondary, early teachers who felt prepared to manage a classroom, implement a variety of instructional techniques, teach the subject matter, and assess students were less likely to leaving teaching in Models 3 through 5. In Model 5, for each degree increase in teacher preparation, the likelihood that early teachers will remain in teaching increases by about 9 percent. The twentieth hypothesis that secondary, early teachers who received undergraduate or graduate coursework in pedagogy, controlling for all other variables, will be less likely to leave teaching is not supported by

the finding because the coefficient does not have a statistically significant effect on teacher attrition.

The result is not consistent with the twenty-first hypothesis that secondary, early teachers who receive PD associated with teaching students with disabilities will be less likely to leave teaching than those who do not, holding all other variables constant, because the coefficients are not statistically significant, though the direction of the effect is expected. Likewise, the results do not support the hypothesis that secondary, early teachers who receive PD for teaching ELL students will be less likely to leave teaching than those who do not, controlling for all other variables. The twenty-first hypothesis that secondary, early teachers who receive PD associated with teaching the content area will be less likely to leave teaching is not supported by the finding because the coefficient does not have statistical significance. That secondary, early teachers who receive PD associated with classroom management are less likely to leave teaching than those who are not supported by the finding because the coefficient does not have a statistically significant effect on leaving, though the direction of the effect is expected.

Teacher Work Environment Variables

This study's twenty-second hypothesis that secondary, early teachers who are more satisfied with the quality of the work environment are less likely to leave teaching than those who are less satisfied, controlling for all other variables, is not supported by the finding because the coefficient is not statistically significant on leaving. That secondary, early teachers who feel more control over choosing what to teach will be less likely to leave teaching than those who feel less control, controlling for all other variables, is supported by the finding and the coefficients in both Models 4 and 5 are

statistically significant and negative at the .01 level. In Model 5, for each degree increase of control, early teachers are about 25 percent less likely to leave teaching than teachers who feel less control. The prediction that secondary, early teachers who feel more control over student assessment will be less likely to leave teaching than those who feel less control, holding all other variables constant, is not supported by the findings because the coefficient does not have a statistically significant effect on the dependent variable. The twenty-fourth hypothesis that secondary, early teachers who feel less enthusiasm now than when they started teaching will be more likely to leave teaching than early teachers who feel at least as enthusiastic now as when they started teaching is supported by the finding and the coefficient is statistically significant in Models 4 and 5 at the .01 level. The odds ratio for reduced enthusiasm in Model 5 is 1.608, which means that for each level increase in teacher loss of enthusiasm, secondary, early teachers were about 61 percent more likely to leave teaching.

School Context and Student-Level Variables

This study's twenty-fifth hypothesis asserted that secondary, early teachers working in urban, suburban, or town contexts are more likely to leave teaching than those who teach in rural school contexts, controlling for all other variables, is not supported by the finding because the coefficient does not have a statistically significant effect on leaving, despite the expected negative association. The twenty-sixth hypothesis that early teachers who perceive student poverty is a problem are more likely to leave teaching compared to those who do not feel that it is less of a problem is not supported by the findings because the results are do not have a statistically significant effect on leaving. Similarly, the coefficient for "student misbehavior a problem" does not have a

statistically significant effect on teacher exit, so the hypothesis that early teachers who feel that student misbehavior is a greater problem on campus will be more likely to leave teaching than those who feel that it is less of a problem is not supported by the findings.

SUMMARY

About 10 percent of these secondary, early teachers left teaching, while roughly 90 percent remained. The significant determinants influencing early teacher attrition from teaching include: alternative certification, State Certification 1, to a lesser extent State Certification 2, induction, teacher preparation index, content autonomy, and reduced enthusiasm. All other covariates are not statistically significant at the .05 level.

CHAPTER VI

DISCUSSION AND CONCLUSION

This study examined the determinants of secondary, early teacher attrition from the teaching profession. Analysis of the focal literature and a theoretical framework were presented. This study used panel data from the BTLS 2007-08, and event history analysis with Cox regression to evaluate covariates' effect on secondary, early teacher attrition. This chapter begins with a summary of key findings, then discusses the implications of the findings for research, the proposed theoretical framework, and practices, and finally considers the limitations of the study and recommendations for further research on secondary early teacher attrition.

SUMMARY OF KEY FINDINGS

This dissertation studied the problem of secondary, early teacher attrition from teaching in the United States. As presented in Chapter 5, the findings of this study reveal that 10.1 percent of secondary early teachers who responded to the BTLS 2007-09 waves of data collection left teaching, whereas about 90 percent of teachers remained. The focus of this study is the determinants of secondary, early teacher attrition. As discussed in Chapter 5, Model 5 demonstrates the greatest efficacy, with a model fit of 93.457, so key findings are presented from this model.

The fifth hypothesis that early teachers who entered teaching with an alternative certification will be less likely to leave teaching than those who do not, is supported by the findings, as is the sixth hypothesis that early teachers who enter teaching having

fulfilled the requirements for a standard/state certification will be less likely to leave teaching. Similarly, secondary, early teachers who entered teaching with a provisional certification that only requires the completion of a probationary teaching period are less likely to leave teaching than early teachers who enter teaching without a certification of any kind. The seventeenth hypothesis that secondary, early teachers who participated in an induction program are less likely to leave teaching is supported by the results. The nineteenth hypothesis that more prepared secondary, early teachers will be less likely to leave than less prepared early teachers is supported by the findings; for each level increase in preparation, early teachers are 10 percent less likely to exit teaching. The twenty-third hypothesis that early teachers who feel more control over their teaching content, including which content/skills to teach are less likely to leave teaching than early teachers who feel less control; for each level increase in perceived content autonomy, early teachers are about 25 percent less likely to leave teaching than those who feel less control. The last, and perhaps most salient variable, is reduced enthusiasm, which agrees with the twenty-fourth hypothesis. A lower level of enthusiasm is associated with a higher likelihood of leaving the teaching profession. No other hypotheses are supported by the findings, because all other variables do not have a statistically significant effect on the odds that early teachers will exit teaching. Insignificant covariates include: Age, race, gender, educational attainment, State Certifications 3 and 4, national board certification, union or similar professional membership, salary satisfaction, actual salary per $1,000, average hours worked per week, perceived parental support, administrator support, communicative administration, staff recognition, mentor, professional collaboration,

under/graduate pedagogy courses, Special Ed PD, ELL PD, content area PD, classroom management PD, teacher work environment index, assessment autonomy, urbanicity, perception of student poverty as a problem, and perception of student misbehavior as a problem.

IMPLICATIONS OF THE FINDINGS

Implications for Research

Teacher characteristic variables. Prior studies found a U-shaped effect of age on teacher attrition, according to which, the youngest and oldest teachers are more likely to leave teaching than middle-age teachers (Guarino et al. 2006; Ingersoll and May 2012). Another study found that younger teachers were much more likely to leave than older teachers (Borman and Dowling 2008). The coefficient in this study did not have a statistically significant effect on leaving teaching, contradicting the literature. In their meta-analytic study, Borman and Dowling (2008) found that assuming a linear relationship between age and attrition, "the odds of attrition for a teacher 5 years younger would be 5.32 times greater than those for the older teachers (385). Similarly, they found that teachers who began teaching at 31 years of age or older were more likely to leave teaching than teachers who started teaching at 30 years of age or younger (Borman and Dowling 2008). However, teachers who are 51 years old or older were nearly 2.5 times as likely to leave teaching than those 50 years old or younger. Ultimately, the effect of age on attrition is not a settled issue and requires further testing.

A meta-analysis of 19 different studies of teacher attrition found that male teachers were much more likely to leave teaching than female teachers, but these studies

address teachers in general and not early teachers exclusively (Borman and Dowling 2008). The finding of this study is consistent with the direction of the gender difference indicated by the prior research, but reveals no statistically significant effect of gender on secondary, early teacher exit, so this finding suggests that the issue is not settled. Interestingly, Ingersoll et al. (2018) found that the overall proportion of female teachers has grown from 67 percent to about 76 percent for the 2015-16 school year, which has an exacerbating effect on the gendered composition of teaching.

The prior research on the effect of race/ethnicity on early teachers leaving provides mixed results. Some research suggests that white teachers make up a greater percentage of the teaching workforce and are more likely to leave than non-white teachers, generally, while others found that non-black teachers of color and black teachers were more likely to leave than white teachers (Achinstein et al 2010; Sutcher et al. 2016). However, this study found that race/ethnicity did not have a statistically significant effect on leaving, which may cast doubt on the effect of race/ethnicity on secondary, early teacher attrition and suggests that further research is needed to further verify the effect.

Educational attainment is seldom used as a predictor in the prior studies, perhaps because holding a bachelor's degree is a basic requirement to entering teaching in the first place, while graduate degrees do not serve as an incentive in school contexts, beyond the requirements for teaching dual credit or for-college-credit courses via College Board. Similarly, school/district staffing positions that mandate a graduate degree are often administrative or curricular specialist positions that imply ongoing participation in

education generally. Alternatively, measures of early teacher qualification are construed in the scholarly literature in terms of SAT/ACT scores, college selectivity, or some combination thereof, and do not compare the respective relative effects of holding a bachelor's or master's degree on the likelihood of exiting teaching (Guarino et al. 2006; Kelly and Northrop 2015). This study found that educational attainment does not have a statistically significant effect on leaving teaching, while the association is positive.

Most commonly, the literature as to the effect of certification type on the likelihood that teachers will leave teaching juxtaposes two types of credentials: alternative certification versus standard/state certification. Generally, teachers with a state/standard certification are less likely to leave teaching than teachers entering the profession through an alternative certification program (Carver-Thomas and Darling-Hammond 2017; Podolsky et al. 2016; Zhang and Zeller 2016). However, this comparison cannot be made in this study because the question measuring if an early teacher entered through an alternative certification is distinct from the question measuring if an early teacher entered teaching with a standard/state certification, but a couple of observations can be made. As expected, this study confirms that early teachers entering teaching holding a standard/state certification are less likely to leave teaching than those with no certification, and early teachers who enter teaching via an alternative certification are also less likely to leave teaching than those with no certification. The result suggests that prior education and professional certification have a value-added effect on early teachers' experience initially (Podolsky et al. 2016). Yet, it may also be true that early teachers who do not have a teaching certification of any kind tend to leave

teaching at much higher rates than those who do, because holding some sort of teaching certification is compulsory and teachers cannot persist for long as a teacher without meeting this minimal requirement.

The effect of union membership or similar professional membership on the likelihood of leaving teaching does not emerge in the literature as often studied. For example, neither Macdonald (1999) nor Guarino et al. (2006) include this factor in their reviews of the literature on teacher attrition in general. The dearth of prior research on this question may stem from the perception that union/professional membership is disassociated from more typical concerns such as demographic factors, teacher preparation and development factors, et cetera, and that perhaps seem to have a more direct effect on early teacher efficacy and likelihood to leave teaching. Ultimately, the results from this study suggest that union/professional membership may not be important for secondary, early teacher attrition.

This study found that neither salary satisfaction, nor actual salary per $1,000 have a statistically significant effect on exiting teaching, contradicting both the nineth and tenth hypotheses. This result may cast doubt on the importance of teacher compensation for early teacher attrition. One possible explanation for the difference may be measurement error. The degree to which early teachers were satisfied with their salary was measured using a scale from “strongly disagree” to “strongly agree.” This question may be too limiting, inviting teachers to compare their relative salary to that of other teachers they may personally know who work in another district, or be based on teachers’ generalized awareness of school districts that typically pay relatively more or less than

the district in which respondents teach. This question may not cognitively register as an opportunity for respondents to compare their salary satisfaction as teachers with comparably credentialed professionals working in other contexts. A second possible explanation for the difference is that for teachers working in districts that implement a graduated pay scale (the more years one works, the more one makes incrementally and predictably) the effect would be predictably negative, because greater time served is incentivized by higher levels of pay and lower levels of attrition. However, more and more, school districts are moving to a mid-point, algorithmic determination of salary that flattens income stratification among teachers, raising early teacher salaries, while lowering the income ceiling for late-career earnings. Further research that measures early teacher salary satisfaction and actual salary compared to that of other similarly credentialed professions, may benefit the scholarly literature.

Ironically, the effect of the average number of hours worked per week on the likelihood early teachers will exit teaching is not commonly studied in reference to early teacher attrition. Neither Guarino (2006) nor Macdonald (1999) include this factor in their respective literature reviews. Several studies convey that teacher work environment and workload can have a negative impact on the likelihood of teacher attrition, but this determination cannot be challenged or confirmed based on the findings because these studies do not specifically evaluate the effect of relative hours worked per week on the likelihood of leaving (Howes and Goodman-Delahunty 2015; Latifoglu 2016; Manuel and Carter 2016). Furthermore, this study's eleventh hypothesis that early teachers who work more hours a week, on average, will be more likely to leave teaching than early

teachers who work less per week is not supported by the findings as the coefficient does not have a statistically significant effect on leaving. While one might assume that a longer work week would have a negative impact on persistence, working longer hours as an early teacher may indicate greater career commitment and resilience, characteristics that promote persistence. Perhaps further research would benefit from analysis that does not presume a linear relationship between the covariate and dependent variable.

Teacher support and relational variables. In the context of teacher attrition generally, and early teacher attrition specifically, parental support is not a variable included in the literature. This omission may stem from a presumption that parent support for teachers does not matter, whereas parent support may be taken to imply support of their student as opposed to teachers. In this case, the coefficient does not have a statistically significant effect on early teacher persistence, which suggests that this covariate is not important for early teachers' longevity.

The results of this study do not confirm much of the scholarly literature as this study did not find a statistically significant effect on either administrator support or communication on the likelihood early teachers will leave, though the direction of the effect does agree with findings in the scholarly literature. The crucial role of school administrators/administration on early teacher retention/attrition is well documented in the scholarly literature. Existing research on the effect of the school administration or specific administrators on early teacher attrition demonstrates the importance of administrator clarity of vision/mission, supportive behaviors, interpersonal and institutional communication, and staff empowerment have a positive effect on teacher

retention, generally (Brown and Wynn 2009; Curtis and Wise 2012; Howes and Goodman-Delahunty 2015; Podolsky et al. 2016; Shen et al. 2012). Yet, the results of this study suggest that administrator/administration communication and support may not be an important factor on early teacher attrition. Further research is needed to verify.

This study did not find a statistically significant effect of staff recognition on early teacher attrition. These results do not agree with what the relevant literature reveals. Podolsky et al. (2016), for instance, found that teachers who felt recognized were less likely to leave teaching. This study finds that staff recognition may not have an important impact on teacher attrition. Further research is needed to confirm it.

This study did not find a statistically significant effect of early teachers being provided/working with a mentor on the likelihood of attrition. While the direction of the effect coheres with the literature, this study suggests that mentor may not be an important determinant to early teacher attrition (Castro et al. 2010; Gallant and Riley 2014; Guise 2013; Kearny 2014, 2015; Simos 2013).

Kearney (2015) describes induction as a process whereby new teachers learn what it means to be a full member of the school organization, without which, new teachers remain in a liminal state until they either persist towards a sturdy professional identity, by their bootstraps as it were, or exit teaching. This study demonstrates that induction has a statistically significant, negative effect on the likelihood secondary, early teachers will leave teaching. These results confirm findings in the scholarly literature (Kutsyurba et al. 2017; Podolsky et al. 2016). Induction, as an early career intervention, is a value-added mechanism whereby early teachers develop their professional capital in a given

school/district context by learning mechanical skills related to documentation, et cetera, instructional strategies emphasized by a given campus/district, and begin to develop meaningful relationships with other educational practitioners (Guise 2013; Kearney 2015).

This study finds that professional collaboration did not have a statistically significant effect on the likelihood that early teachers will exit teaching. This result is not expected and disagrees with findings of the relevant literature. Several studies found a positive association between teacher collaborative structures such as PLCs, breed a sense of collaboration and common purpose that cultivates teachers' sense of professional community, and reduced burnout increased job satisfaction, all of which positively impact the likelihood that early teachers will persist in their careers. Perhaps this difference is due to measurement limitations of the BTLS. The professional collaboration variable used here is dichotomous, while more questions that ask about granular experiences of early teachers such as regularity of meeting, relative efficaciousness of meetings, and the relative importance of this relational structure to campus accountability mechanisms, may provide more significant results. Conversely, content area autonomy, discussed later in this chapter, has a statistically significant, negative effect on early teachers' likelihood to leave teaching. It may be the case that regular professional collaboration under the present framework seems over-bearing to early teachers. If it is the case that early teachers are working in a PLC that does not value working together for instructionally purposeful outcomes, and are, rather, interested in simply gossiping or

passing the time together, then it may create a negative perception of this activity for early teachers who may feel overwhelmed as it is.

Teacher preparation and development variables. Focal aspects of teacher preparation are presented because these variables emphasize teacher's self-perception of preparedness to handle a range of classroom management or discipline situations, use a variety of instructional methods, teach the subject matter, and assess students. This study finds that the teacher preparation index has a statistically significant, negative effect at the .05 level on the odds that early teachers will leave. These results agree with prior literature on the subject that found that early teacher preparation has positive effects on early teacher subjective agency across a range of teacher-specific professional behaviors (Fontaine et al. 2011; Manuel and Carter 2016; Mee and Haverback 2014) However, problematically, the literature does not demonstrate granular analysis of aspects of teacher preparedness beyond that which is associated with certification type and educational attainment, so this study's finding begins to fill in a gap in the literature, demonstrating the negative statistical significance of early teacher preparedness on the likelihood they will leave teaching (i.e., the more prepared early teachers feel they are to manage the classroom, implement instruction, assess students, and teach the subject matter, the less likely they are to leave teaching).

Ongoing early teacher development opportunities during the first few years of teaching are important for continued early teacher growth (Loeb et al. 2012). Prior research indicates that when early teachers engage in specifically targeted PD activities, they demonstrate reduced odds of leaving teaching, while other research found that a lack

of meaningful PD left teachers feeling stuck in “arrested development” and were more likely to leave (Gallant and Riley 2014). But the results of this study do not agree with the cited prior scholarship. This study found no statistically significant effect for any of the four PD variables, so the hypotheses are not confirmed at this time.

Teacher work environment variables. Work environment index measures the degree to which teachers like being at/working for the school, satisfaction as a staff, and appreciation for the ways in which things are run at the school. The coefficient of this determinant does not have a statistically significant effect on the likelihood that early teachers will leave teaching. The scholarly literature reveals that negative perceptions of the school environment, including lack of enjoyment and negative staff interactions as reasons why early teachers leave teaching (Howes and Goodman-Delahunty 2015). One possible explanation for this difference is measurement error. Similarly, the cited literature focuses on other aspects of work environment, such as which classes teachers taught, the range of which would include honors/advanced, on-level (which may include some percentage of special populations), or courses with a majority of special populations such as special education students or English-language learners—each of which may imply a meaningful distinction and implication for teacher work environment satisfaction.

Two studies emphasized that lack of control over what is taught in the classroom negatively affected teachers odds to stay in teaching, but teacher control over what is taught in the classroom, specifically which skills and content, does not emerge in the scholarly literature as a focal point when evaluating the determinants of early teacher

attrition (Ingersoll and May 2012; Shen et al. 2012). Perhaps this stems from the in-breaking reality that states, such as Texas, mandate via state boards of education a prescribed list of skills that teachers are required to teach and assess. Even so, different school districts vary as to the instructional autonomy they allow teachers—some districts provide a day-by-day instructional/content plan that teachers are required to present, whereas, other districts only prescribe state-mandated knowledge and skills, while granting teachers instructional autonomy as to how they teach and assess mandated material. Because content area autonomy is not presented as a focal determinant at a granular level in much of the scholarly literature, this study helps to fill in the gap by demonstrating that content autonomy has statistically significant, negative effect on early teacher attrition.

Student assessment may be taken to imply high-stakes, standardized assessments, district benchmark assessments, or regular formative and summative assessment designed and implemented at the campus-level by individual teachers or groups of teachers. This study did not find a statistically significant effect of assessment autonomy on the odds early teachers will exit. This finding does not agree with some prior research. The scholarly literature focuses on high-stakes, standardized assessments and reveals negative associations between this assessment type and reduced efficacy and job satisfaction (Manuel and Carter 2016). It must be recognized that the primary point of concern regarding assessment autonomy in the scholarly literature attends to standardized assessment from a deficit perspective—emphasizing or arguing to establish the problematic nature of high-stakes, compulsory standardized assessments on student

achievement and teacher efficacy, whereas formative and summative assessment that occurs during the lesson cycle is not emphasized, which seems to miss an important pedagogical consideration for early teacher development and practice. This study, however, emphasizes teacher autonomy over formative and summative assessment that occurs during class implementation. The difference may result from measurement error—the question does not measure teacher perceptions of their own assessment efficacy, nor does it address standardized assessments, so further research is needed to further explore the relationship between different forms of assessment and the odds that early teachers will remain.

The result of this study indicates that early teachers are more likely to leave teaching as their enthusiasm drops. This result somewhat agrees with Kelly and Northrop's (2015) findings, yet they measure this aspect with a composite measurement, whereas this dissertation uses a single variable. This finding helps to fill in a gap in the literature because it presents significant results that are otherwise unaccounted in the literature. Still, more research to evaluate more granular, mediating variables that effectuate reduced enthusiasm for early teachers will help to better understand this effect, which will help researchers to make more specific policy recommendations to promote teacher enthusiasm.

School context and student-level variables. As a predictor of early teacher attrition, this study finds that relative school context does not have a statistically significant effect on early teacher attrition. While the effect is small, the direction of the effect agrees with the literature that found that teaching in rural areas has a negative

effect on career longevity but disagrees with literature that finds that teachers practicing in rural contexts are 20 percent less likely to leave teaching than those teaching in urban contexts (Ingersoll and May 2012; Shen et al. 2012). While this dissertation's findings do not agree with the literature because the effect is not statistically significant, further research is needed to provide clarity as to the relative effects of school context on early teacher attrition.

The scholarly literature on student poverty and teacher attrition consistently reveals a positive effect of greater relative student poverty levels on the odds of secondary, early teachers will exit, as a result of intersecting detriments such as larger class sizes, lower salaries, more stressful teaching conditions, poorer facilities, and fewer textbooks and supplies (Castro et al. 2010; Ingersoll and May 2012; Podolsky et al. 2016; Ronfeldt 2012). But the result of this study does not agree with the scholarly literature because the coefficient for the determinant is not statistically significant, though the direction of the effect was predicted and agrees with prior research.

Similar to the discussion of urbanicity and student poverty, student misbehavior is a problem often framed in the academic literature as a secondary or tertiary determinant, stemming from intersecting covariates. For instance, one study found that perceptions of school problems such as student misbehavior alone did not have a significant effect on leaving, so the researchers built an index to combine this factor with perceptions of student poverty and found that these problems, when coupled with lack of support, increased the likelihood that early teachers felt burnt out (Kelly and Northrop 2015). The present study, however, did not find that student behavior had a statistically significant

effect on the likelihood that early teachers will leave teaching. Perhaps these contradictory results stem from the question measuring teacher perceptions of student misbehavior, rather than an actual count of behavioral interventions, provided that instances of student conflict do not typically rise to levels that completely disrupt instruction and student learning. Secondary teachers work frenetically, attending to classroom management while instructing and focusing on planning and student assessment/feedback when students are not present. It is reasonable to infer from this that most teachers do not experience student misbehavior to the point that it creates some kind of trauma for the early teacher that would motivate a career change.

Theoretical Implications

As a theoretical/explanatory framework, constructivist community of professionalized praxis emphasizes structures of relationality and professionalization in the form of teacher expertise and teacher social capital. This theory is founded on Berger and Luckmann's (1966) dialectic of social constructivism: internalization, externalization, and objectivation and Giddens' theory of structuration, emphasizing both mediate and proximate mechanisms of formation. Adler et al. (2008) demonstrate that these organizational structures are no longer antithetical to a theory of professionalization. Professionalization theory has evolved from a taxonomical approach to emphasize a communal, collaborative orientation to professionalization, writing that "professions rely on a collegial community structure to mobilize power in asserting their jurisdiction over… tasks and governing themselves in the performance of these tasks" (Adler et al. 2008:361). They go on to argue that these community structures are key to

effective knowledge-work (Adler et al. 2008). At the campus level, Bourdieu's latent theory of praxis, habitus, implies that structures exist not as hierarchical, punitive mechanisms of control, rather, more properly as "relevance" structures that promote an educational ecology that invites and empowers the social constructivist dialectic of knowledge formation (Berger and Luckmann 1966).

This study includes relational factors such as parent support, administrator/administration support and communication, staff recognition, mentoring, induction, and professional collaboration, testing the effect of these variables on the likelihood that early teachers will leave teaching. Though not all of these relational variables have statistical power to explain why teachers leave, there is some evidence for the efficacy of this explanatory framework. Induction, for instance, has a significant effect on early teacher career trajectory. Induction is typically a highly relational process in which early teachers are invited into a process to become aware of campus processes and procedures, vision and mission, instructional norms and standardized procedures for documentation (Gallant and Riley 2014). Without these structures, writes Kearney (2015), early teachers are left in a liminal state that tends to establish a career trajectory towards exiting teaching. As a mechanism of structuration, induction provides proximate and mediating structures that promote early teachers' conceptual orientation to school culture and processes, the relative effectiveness of which promotes internalization thereof, reflexively promoting externalization and concretizing institutionalization, synchronously. However, while the scholarly literature, in general, emphasizes the significance of the durability and consistency of proximate relational structures, the

results of this study lack that statistical significance to demonstrate a robust role of relationality as a theoretical/explanatory framework to sufficiently explain early teacher attrition. Further research is needed to more fully explain the effect of relationality on early teacher career trajectory than the results of this study can provide.

A second emphasis of a theory of community of professionalized praxis is the professionally mediating role of teacher professional capacities stemming from teacher preparation and development. Domain expertise is a key consideration to theories of professionalization. Teacher development and preparation mediate the development of this expertise in an ongoing way. This study includes a teacher preparation index, a variety of professional development foci, and professionally synchronous and asynchronous teacher development in the form of educational attainment and certification credentialing as determinants of early teacher attrition. This study found that early teacher content autonomy and preparation to develop classroom management, instructional, and student assessment skills, along with relative content-area expertise have a value-added effect on the likelihood that early teachers will not exit teaching in their first five years of practice. Furthermore, this study found that teacher certification type has a statistically significant negative effect on the likelihood that early teachers will leave teaching. These results suggest that measures of early teacher professionalization in the form of increased human capital (i.e., skills and cognitive aptitude related to developing and executing effective aspects of pedagogy are at least partially explained by a theory of community of professionalized praxis). Factors that contribute to early teacher human capital, emerge as mediating relevance structures promote early teacher subjective

agency. As a result, one may speculate that the greater investment that administration invests toward the development of human capital mediating relevance structures with campus personnel, the more these practices will enhance the overall educational efficacy of schools on student learning, but this study is unable to make such determinations because the focus is simply on early teachers' experience in persisting or exiting teaching, but further research is needed to establish these correlational or causal connections.

A third aspect of a professionalized community of praxis is symbolic power/capital. A review of the scholarly literature reveals debate as to the status of teaching as a profession, in part, because of the historical assumptions of teaching as simply "women's work," taxonomically dissimilar to professions that are more firmly socially considered as such (e.g., lawyers, accountants, engineers, et cetera; Apple 2015). Constructivist community of professionalized praxis implies the need for greater collective advocacy than the campus relevance structure and interpersonal communication alone can sustain. By collectively lobbying the larger societal political structures for increased teacher symbolic capital, education professionals can enhance teacher occupational prestige and material compensation—the two are reflexively related. The mediating factor of teacher symbolic capital included in this study is teacher union or professional membership of a similar sort. Union/professional membership mediates social capital through collective political advocacy to prioritize funding and public policies that tangibly invest public resources in public education generally, and secondary, early teachers, specifically. Yet the results of Cox regression with

proportional hazards did not demonstrate a statistically significant effect on the odds of leaving teaching. About 59 percent of secondary, early teachers possessed union/professional membership, suggesting that, as a mechanism of political influence for the promotion of teacher social capital, professional teachers' unions/associations operate with only about 60 percent of the resources they might have if all early teachers participated, negatively impacting the political agency of these organizations to affect policy decisions at the highest levels of state and federal government. What is more, "right to work" states such as Texas dramatically inhibit the collective political power of professional associations and local educational structures, having banned unions outright and disallowing individual districts to lobby the legislature. While these systemic factors may partially explain the dynamic, it may also be true that teachers simply see professional membership as a safety net that offers legal counsel and professional insurance. As a corollary, it is reasonable to conclude that the lack of effective collective political representation similarly diminishes teacher symbolic capital in the form of lower pay.

A review of the scholarly literature reveals the detrimental association between teacher attrition and low pay (Kelly and Northrop 2015; Podolsky 2016). Prior research indicates that increased teacher pay would result in greater willingness of undergraduate students to major in education, while teachers who are currently practicing are less likely to leave the higher their income is (Podolsky et al. 2016). In order to affect state and federal budgetary allocation, teachers rely not simply on individual voting, but also on collectivizing resources into a professional organization/union to promote the interests of

educators and cultivate more favorable public opinion toward the value of teaching in society. True to the constructivist dialectic of internalization, externalization, and institutionalization, by cultivating appropriate resources and putting those resources to work to influence public opinion and lobby state legislatures, early teachers cultivate enhanced symbolic/social capital, which creates a permission structure for raising education funding in general, and teacher base salary and benefits specifically. As this dialectic progresses it transforms the symbolic universe to create social and professional conditions more conducive to retaining a highly qualified and effective teaching workforce.

Practical Implications

This study found evidence that pre-service early teacher preparation has a value-added effect on the likelihood secondary early teachers persist in the practice. The result suggests that even the basic requirement to persisting—having some sort of teaching certificate and pre-service preparation—has an important contribution to early teacher persistence. This finding suggests that teacher certification programs should be constructed to maximize rigor for early teacher preparation since this pre-service preparation demonstrates a significant effect on early teacher career persistence. Additionally, given that early teacher instructional growth flattens out after the first five years, school districts could recast early teacher professional practice during the first year at least, modeling this more along the lines of a traditional student-teaching experience, so that early teachers have consistent, proximal support and the mediating support of a consistent discussion partner with whom to share reflection and discourse to grow early

teacher capacity in supportive ways (Loeb et al. 2012). Similarly, though PD factors did not demonstrate a statistically significant effect on early teacher exit, as a corollary, school districts should invest in PD structures that are substantive and ongoing—at least throughout the first year of instruction. While this study did not find a statistically significant effect of development variables on leaving, school districts that provide meaningful PD opportunities for each of these areas of PD will likely see measurable gains in early teacher persistence. As a latent effect, developing early teachers through collaborative processes further enhances the socio-political capital of education by promoting greater individual and collective competence and expertise, which enhances the locally and more broad social relevance structure of teachers as a result of increased student success outcomes that may result from a professionalized teacher workforce. Additionally, by investing in early teacher preparation and development, school districts can develop a professionalized faculty that does not require professional and pedagogical micromanagement with ready-made, compulsory daily curriculum, freeing teachers to cast a professional vision for their courses that instills a greater sense of subjective agency and professional capital—both of which correlate with decreased odds of leaving teaching (Podolsky et al. 2016).

This study emphasizes the importance of early teacher affective wellbeing because teaches who felt less enthusiastic about teaching after practicing for a while than they did when they started teaching, demonstrate significantly greater odds of leaving teaching. Ironically, though the result is not significant in this study, the scholarly literature emphasizes the importance of durable and regular relational structures such as

PLCs for ongoing teacher wellbeing. So, local school district may be served by implementing and nurturing effective PLC structures to ensure connectivity among staff (Battersby and Verdi 2015). Building durable and regular structures of interpersonal connection among staff infuses the collective organization with an enhanced relevance structure—raising the relative efficacy of the campus status quo implicitly.

LIMITATIONS

One limitation of this study is that the survey only includes general aspects of teaching assignment such as subject, grade, and whether respondents teach special needs students or English-language learner students, while omitting more granular details such as if respondents teach advanced courses, standard/on-level courses, or inclusion classes with relatively larger populations of special needs students. As a result, this study is unable to evaluate more granular aspects of student populations respondents teach, preventing analysis of student-level characteristics that can factor in teacher concern or reduced enthusiasm, while implying targeted professional development. Providing targeted professional development based on teacher concerns relative to teaching specific student populations may enhance early teacher pedagogical efficacy and encourage professional persistence.

A second limitation of this dissertation is that only the first two years of data were accessible. The BTLS collected data each school year from 2007-08 to 2011-12, so this study initially planned to evaluate the temporal ramifications of determinants of early teacher attrition, adding a time-contingent texture to the results. Further research will benefit from creating a more expansive longitudinal study so that researchers and

educational professionals can measure the relative impact of different covariates on leaving at different points during the liminal era of teacher professionalization that occurs during the first five years. This information would benefit educational policy by creating a permission structure to expand allocated resources to not only first year interventions/development, but also by expanding early teacher professionalizing practices/development and relationality for the first several years teachers practice, perhaps with a gradual release approach that supports growth and growth-mindedness as opposed to the "sink or swim" approach all too common to educational policy and school practices currently.

Similarly, having the full five years of data collection, along with providing added contours of analysis and results, may have added to the explanatory power of analysis because some variables may become important subsequent to the first year or two of secondary, early teachers' experience. For instance, as with other early career experiences, early teachers may feel over-burdened by the daily and weekly planning workload. This becomes important as one considers potential expectations of early teacher collaboration with other content-area professionals. Rather than easing the burden, to an early teacher collaboration may seem like an added burden. While the result of professional collaboration did not have a statistically significant effect in this analysis, this variable may gain in statistical significance the longer early teachers' practice, thereby becoming an asset.

Additionally, while professional development variables did not have statistical significance in this analysis, this may stem from the inundating nature of the first year or

two of teaching. Perhaps professional development variables during years three through five would have yielded greater significance as early teachers work to expand their ability to conceptualize and differentiate instruction for Special Education and ELL populations when they are more settled in a base on knowledge and may begin developing more advanced pedagogical skills of differentiation.

Perhaps the limitation with the greatest magnitude is the lack of statistical significance for many predictors of early secondary teacher attrition. The theoretical framework cannot be fully verified because so many important variables are not statistically significant. Despite the strong model fit of Model 5, findings pertinent to many predictors may not be conclusive because their coefficients are not statistically significant at the .05 level. Since this study restricts the data to include only secondary, early teachers, the reduced sample size may contribute to the lack of statistical significance of a variety of variables simply because less responses were included. Kelly and Northrop (2015) for instance found that age had a statistical significance on early career outcomes, while this study did not. However, Kelly and Northrop do not restrict the data to only analyze secondary, early teachers. But, by restricting data to specifically address secondary, early teachers, this study contributes to the body of literature added specificity of population analyzed, which is uncommon in the scholarly literature.

Finally, it is important to consider the historical context of the BTLS. Since the BTLS data this study examines only includes Wave 1 and 2 results, the BTLS data does not reflect the rippling impact of the post-2008 American recession and the present COVID-19 crises on educational structures in general, or the experience of early teachers

relative to their choice to stay or leave teaching in specific. The temporal limitations of this data suggest that ever-evolving social conditions require up-to-date data collection as conditions on the ground have changed in important ways.

RECOMMENDATIONS FOR FURTURE RESEARCH

Further research into the effect of reduced enthusiasm on early teacher attrition is needed. Reduced enthusiasm had a statistically significant effect on the likelihood that early teachers will exit. However, this variable does not elicit the contributing factors to reduced teaching enthusiasm. Future path analysis research that examines endogenous variables that contribute to reduced enthusiasm will benefit scholarship by potentially identifying predictors of reduced enthusiasm so that local, state, and federal educational entities can proactively create policy that promotes teacher enthusiasm.

The research on professional collaboration, specifically focusing on PLC structures in schools demonstrates that this is an important covariate effecting early teacher persistence; however, the result of this dissertation was not statistically significant. Future research can verify the effect of professional collaboration by studying PLC model, or recognized schools. Researching the effect of collaborative structures in schools recognized as exemplary at this practice will benefit research because it presumes that professional collaboration is done well in the case of all respondents, whereas many schools may not have an effective professional collaboration mechanism. While it may reduce the sample size, researching the effect of professional collaboration on the odds that early teachers will leave can confirm the effect this determinant has on early teacher attrition.

As a third recommendation for further research, studying the effect of compensation on early teacher attrition will help verify the efficacy of this factor. This dissertation included measurements of actual salary per $1,000 and teacher perceptions of salary satisfaction, which may not frame the issue helpfully. Salary stratification in schools is diminishing as school districts move from a graduated pay scale to an algorithmic mid-point pay schedule. As a result, in-group teacher income evaluation may lose efficacy because pay differences across school districts of similar sizes are diminished. Rather, future research should invite teachers to discuss their relative salary satisfaction compared to other similarly educated professions, while bracketing discipline specific bachelor's degrees for which any bachelor's degree is not an appropriate credentialing. Bringing teaching into discussion with similarly credentialed professions in the marketplace will enable researchers to determine the larger market effects of salary satisfaction and actual income on early teachers' choice to stay or leave.

As a fourth area of recommended further research, future studies should examine the effect of the sort of classes (advanced/honors, on-level, majority special populations) one teaches on the likelihood that early teachers will leave teaching. The BTLS does not provide information on this potentially important variable, while prior research indicates that early teachers are more likely to be assigned courses that are typically seen as less desirable (Howes and Goodman-Delahunty 2015). Future research that examines early teachers teaching a variety of courses, or simply by comparing teachers who taught single course types and the effect these experiences create on the odds early teachers will leave

will benefit school staffing policy decisions that not only emphasize student learning gains, but also early teacher longevity.

Finally, to refine a wholistic approach to early teacher attrition, which this dissertation attempts, a new, mixed methods study to collect more granular data of early teacher experiences and perceptions/associations early teachers make to stay or leave teaching is recommended. Educational research, as indicated in Chapter 3, badly needs to recast its orientation to school staffing. Understanding the rational/utilitarian calculus individual teachers conduct to relative to stay or leave teaching does not embrace the constructivist implications of social formation and knowledge sedimentation. We control our destinies. We create the structures and patterns of behaviors we are synchronously formed by, so studying early teacher and the corresponding educational structures to enhance our reflexively formative processes and relevant structures can promote a more synthetic and efficacious model of early teacher professionalization and praxis. The recommended research design is a two-stage research process with an initial quantitative questionnaire, and a second stage face-to-face interview during which the research can draw out intersectional implications and ask follow-up questions to elicit verbal responses that add connotative shading to more fully represent early teacher experiences that lead to persistence or attrition. For instance, the quantitative measurements for teacher perception only allow for ordinal responses on a scale of one to four, which does not provide much information about the early teacher experience. Future research that invites a substantive quantitative response, intermission for analysis, then a qualitative

interview follow-up focusing on targeted results specific to each respondent will yield a more fruitful dataset.

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