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Teachers as leaders: Pre-service teachers' aspirations and motivations

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HIGHLIGHTS

- Examined pre-service teacher aspirations for early-/mid-career leadership roles.
- Investigated relationships between teaching motivations and leadership aspirations.
- Even at pre-service stage, many teachers expected to take on leadership roles.
- Especially common career aspirations included "hybrid" teacher-leader roles.
- Implications for practice to address teacher attrition and satisfaction discussed.

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ABSTRACT

Teacher attrition is among the most salient problems facing education systems worldwide. Recent research has attempted to understand this phenomenon in light of teacher generational characteristics, finding that today's teachers often view teaching as a short-term endeavor, and desire influence beyond the classroom. This exploratory study attends to this issue in relation to US pre-service teachers. Findings indicate that, even before officially entering the classroom, many teachers expect to take on leadership roles—especially "hybrid" roles that keep them partly in the classroom. Based on findings presented here, we consider implications for teacher preparation and teacher career paths.

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1. Introduction

In the current era of public school reform, classroom teacher retention remains one of the most elusive problems in education systems across the globe, garnering the attention of policymakers, scholars, and practitioners alike (Hochbein & Carpenter, 2012; McKenzie, Santiago, Sliwka, & Hiroyuki, 2005; Peske, Liu, Johnson, Kauffman, & Kardos, 2001). Teacher attrition hinders the development of human capital, a key resource for school improvement (Curtis & Wurtzel, 2010; Odden, 2011). Teacher turnover creates a constant need to recruit, hire, and train new teachers to fill vacated positions. Arguably attrition also undermines the functioning, effectiveness, and efficiency of educational institutions (e.g., Murnane, Singer, Willett, Kemple, & Olsen, 2009; National Commission on Teaching and America's Future, 2007; Ronfeldt, Loeb, & Wyckoff, 2013). The exit of more experienced teachers from the classroom is particularly troubling given that teacher effectiveness typically grows over time (e.g., Ingersoll & Smith, 2003; Murnane & Phillips, 1981; Rockoff, 2003).[1] Given organizational capacity issues associated with teacher turnover, as well as resultant teacher shortages in some locales, efforts to improve teacher retention remain a critical area of focus for education research and policy (e.g., Borman & Dowling, 2008; National Commission on Teaching for America's Future, 2003).

This paper contributes to a growing body of work that has begun to explore teacher retention issues in light of the generational

[1] While earlier evidence suggested that teacher experience effects are limited to the first five or so years of teaching, more recent work suggests teachers do continue to grow (e.g., Kraft & Papay, 2014); thus, teachers exiting the classroom throughout their careers may be problematic from a teacher quality perspective, assuming such teachers are replaced by those with less experience.

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characteristics of teachers. Teachers entering the workforce today differ in many ways from their predecessors. For example, today's newly minted teachers are more likely to have had a prior career or other career options (McKenzie et al., 2005; Peske et al., 2001). In addition, today's new teachers more often view teaching as a short-term career and are more likely to leave the education profession altogether (Ingersoll & Smith, 2003; Marvel et al., 2007; Rinke, 2011). Some research also suggests that teachers increasingly desire leadership roles, advancement, and influence beyond the classroom (Donaldson et al., 2008; Johnson, Berg, & Donaldson, 2005).

At present, there is a need for further research on how pre-service teachers, the future of the teaching force, view both their careers prospectively and opportunities for role differentiation within the field of education (York-Barr & Duke, 2004). In particular, little is known about how long pre-service teachers expect to remain in the classroom, and to what extent pre-service teachers enter the field with an eye toward leadership roles (e.g., instructional coach, administrator). We contribute to this area of research through an exploratory study of pre-service teachers' aspirations to hold leadership roles (including "hybrid" leadership roles which keep teachers in the classroom). The present study also probed pre-service teachers' leadership aspirations in light of their motivations for entering teaching in the first place, since initial teaching motivations have been linked previously to teacher career paths (Olsen, 2008). Specifically, we sought to answer the following research questions:

1. What are pre-service teachers' aspirations for leadership roles 5 and 10 years into their careers?
2. To what extent are pre-service teachers' aspirations for leadership roles related to their motivations for entering the teaching profession?

Our study seeks to address the question of whether, for current generations of teachers, a perceived lack of vertical mobility in the profession might partly explain its attrition problems; and correspondingly whether pre-service teacher education is a potential mechanism by which to mitigate such perceptions. If pre-service teachers aspire to lead in education, for example, offering training opportunities to support their leadership development prior to career entry might support retention in the field. Understanding how pre-service teachers' initial motivations are related to their career aspirations might also explain *why* pre-service teachers aspire to lead. Knowledge of such relationships might be particularly useful in work with early-stage pre-service teachers who may be able to articulate their reasons for entering teaching, but lack an awareness of what leadership opportunities will later be available to them; in turn, teacher educators might be able to identify potential leadership roles that would be appropriate for particularly motivated students and alert them to those roles. We posit that these may be fruitful areas to focus pre-service efforts to address issues of teacher attrition.

2. Theoretical framework and literature review

A robust literature on teacher career paths has identified various categories of teachers, for example "stayers," "movers," "changers," and "leavers" (Cochran-Smith et al., 2012; Hart & Murphy, 1990; Johnson & Birkeland, 2003). These categories reflect various vertical (role) and horizontal (place of employment) career transitions, as well as decisions to leave the profession altogether. Career path scholarship posits that teachers' career decisions, including decisions to leave the field, are dynamic and should be understood as a complex interaction of many factors, including the labor market, career structure, and individual-level variables. While our study examines individual-level factors (i.e., aspirations and motivations for field entry), it is important to note that a sizable body of literature has also shown that educators' career decisions depend on organizational (school and school district) characteristics (e.g., Cochran-Smith et al., 2012; Donaldson et al., 2008; Johnson et al., 2005; McKenzie et al., 2005; Peske et al., 2001; Quartz, Anderson, Masyn, Lyons, & Olsen, 2008; Steffy & Wolfe, 2001).

2.1. From teacher to leader

A vertical career decision made by some teachers ("changers") is to take on leadership roles within education (Silva, Gimbert, & Nolan, 2000). A prominent and especially relevant theoretical framework for understanding teacher leadership is distributed leadership (Spillane, Halverson, & Diamond, 2004). Distributed leadership theory emphasizes leadership as a series of complex interactions among multiple leaders, followers, and practices (Spillane et al., 2004). This perspective on leadership is particularly useful for understanding school leadership because it accommodates multiple players (notably including teachers) working collaboratively across a system rather than positioning leadership as a central, administrative responsibility (Harris, 2003).

For the most part, research discussing the school leadership pipeline has focused on moving from traditional teaching to administrative roles, such as the principalship (Lortie, 2009; Papa, Lankford, & Wyckoff, 2002). However, the proliferation of alternative leadership roles has led to a range of teacher leadership opportunities in education, both within and outside of the formal school context. While teacher leadership has received considerable attention in the U.S., recent work has come from European and Oceanian countries as well (Hulpia & Devos, 2010; Muijs & Harris, 2006; Snoek & Volman, 2014; Taylor, Yates, Meyer, & Kinsella, 2011).

2.1.1. Defining teacher leadership

Given the evolution of teacher leadership over the past few decades, the construct has been conceptualized in various ways (Harris, 2003; Leithwood & Jantzi, 2000; York-Barr & Duke, 2004). Teacher leadership emerged with the development of roles such as department head, head/master teacher, and union representative, which entailed *administrative* (organizational and managerial) responsibilities. Over time the construct has expanded to include *instructional* leadership, with teachers participating more in staff and curriculum development and decision-making, and collaborating informally around practice (Smylie, Conley, & Marks, 2002; Smylie & Denny, 1990). Historically under the purview of the principal but increasingly including teachers, instructional leadership expressly targets curricular and instructional quality (Hallinger & Murphy, 1985; Murphy, 1988). For instance, teachers might engage in instructional leadership through instructional coaching (Harrison & Killion; Margolis; Smylie & Denny), leading professional learning communities, developing curricula and instruction (Smylie & Denny), or providing professional development (Harrison & Killion, 2007; Katzenmeyer & Moller, 2001; York-Barr & Duke, 2004).

Teacher leadership can also support organizational processes (Smylie & Denny, 1990). For example, teachers can assist with district-level organizational decision making (e.g., curriculum planning, policy development) and work to develop partnerships with external stakeholders such as higher education institutions, industry, and community members (Katzenmeyer & Moller, 2001; Smylie & Denny; York-Barr & Duke, 2004). At the school level, teachers can lead through nurturing relationships, collegiality, and trust among colleagues (Silva et al., 2000; Smylie & Denny, 1990).

Other crucial organizational roles for teacher leaders include mediating classroom implementation of reforms in practice (Margolis, 2012; Smylie & Denny) and supporting and evaluating other teachers (Silva et al., 2000; Smylie & Denny, 1990).

Teacher leadership can be either formal, for which one holds a particular position or designation, or informal (Ash & Persall, 2000; Harrison & Killion, 2007). Formally, classroom teachers can take on either instructional leadership roles, such as mentor teacher, instructional coach/specialist, and grade-level leader, or administrative leadership roles such as department head or principal (York-Barr & Duke, 2004). Informal roles, on the other hand, might involve self-initiated collaborative development of instructional materials, mentoring another teacher who has sought help, or reviewing other teachers' classroom-based assessments (Harrison & Killion, 2007).

Importantly, there has also been an emergence of "hybrid" roles, with teachers serving in *both* teaching and leadership capacities (Margolis, 2012; Harris International, 2013). Additionally, a new "hybrid" category of teacher leaders has emerged—so-called teacherpreneurs—"classroom experts who teach students regularly, but also have time, space, and reward to spread their ideas and practices to colleagues as well as administrators, policymakers, parents, and community leaders" (Berry, 2013, p. 310). Through work in new roles such as online coaches, edugame developers, community organizers, and policy analysts, these teachers challenge persistent education system problems from the classroom up.

2.1.2. Effects of teacher leadership

In theory, teacher leaders exert influence to improve curriculum and instruction, and consequently improve student achievement (Robinson, Lloyd, & Rowe, 2008; York-Barr & Duke, 2004). Teacher leadership can also offer a variety of other education systemic benefits (Grubb & Tredway, 2010; Jackson, Burrus, Bassett, & Roberts, 2010; Olsen & Anderson, 2007; Timperley, 2005). For example, opportunities for teacher leadership have been deemed an important means internationally by which to increase teacher professionalism, as well as recruit and retain teachers (Baecher, 2012; Carroll & Foster, 2008; Darling-Hammond, 1996; Donaldson et al., 2008; Fiarman, 2007; Fulton & Britton, 2011; Grant, 2006; Grubb & Tredway, 2010; Hunt & Carroll, 2003; McKenzie et al., 2005; Smylie, 1995; Spillane, 2000; York-Barr & Duke, 2004). At the same time, teacher leadership opportunities can address teacher isolation and satisfaction problems (Margolis, 2012).

Evidence internationally suggests that, under the right conditions at least, teacher leaders can serve to advance school reform efforts (Silva et al., 2000). For example, a study in the UK showed that teacher leaders could themselves generate grass-roots ideas and promote them among other teachers within school walls (Muijs & Harris, 2006). This study, as well as another from the Netherlands (Snoek & Volman, 2014), also highlight the need for key enabling conditions—such as formal leadership support and inter-teacher trust—for the implementation of effective teacher leadership. A study of a leadership development program in New Zealand also suggests that teacher leadership can support the professional development of peer teachers (Taylor et al., 2011).

2.1.3. Factors related to teacher leadership

As with teacher career path attainment more generally, socio-organizational factors can support or constrain the development of teacher leadership (Smylie & Denny, 1990; Timperley, 2005; York-Barr & Duke, 2004). In particular, the literature highlights the importance of organizational structures and polices fostering teacher leadership (Lieberman, 2000; Silva et al., 2000; Smylie & Denny; York-Barr & Duke; Wheatley, 2000), designated time for teacher leadership actions (Kruse, Louis, & Bryk, 1993, April; Lieberman; Silva, Gimbert, & Nolan; Smylie & Denny), and school cultural characteristics such as inter-teacher trust, respect, collaboration (Harris, 2003; Hart, 1994; Kruse, Louis, & Bryk; Lieberman; Silva, Gimbert, & Nolan; Timperley, 2005; York-Barr & Duke). Finally, research underscores the importance of supportive formal administrators including the principal (Clift, Johnson, Holland, & Veal, 1992; Coladarci, 1992; Kruse, Louis, & Bryk; Mangin, 2007; Smylie & Denny, 1990).

Insufficient leadership preparation can also constrain teacher leadership (Harris, 2003; Katzenmeyer & Moller, 2001). Although rare, some leadership development efforts center on pre-service teacher education (York-Barr & Duke, 2004). For example, some programs aim to foster a commitment to teacher leadership and a career-long view of teaching (e.g., Harris, Lowery-Moore, & Farrow, 2008). Specific teacher leadership development levers at the pre-service level have included involving pre-service teachers in School-University partnerships (Sherrill, 1999; York Barr & Duke), relevant coursework (e.g., school change), and preparing teachers to navigate in-school socio-organizational structures vis-à-vis teacher leadership (Silva et al., 2000). Indeed, Olsen and Anderson (2007) highlighted the role of teacher preparation programs in teachers' desires to take on alternative roles in the context of urban schools. Their results, among others, have noted the potential role of the teacher preparation program in shaping career path aspirations, including paths to teacher leadership (Darling-Hammond, Bullmaster, & Cobb, 1995).

While the above examples largely pertain to teacher leadership development in the U.S., various mechanisms are employed to develop teacher leadership internationally as well. For example, the most experienced teachers in Shanghai typically work to spread best practices among other teachers. Both New Zealand and the Canadian province of Ontario have competitive programs for teachers aimed at promoting innovation in practice to address key problems through collaboration with other teachers or external stakeholders. Finland incorporates training for leadership at the level of pre-service preparation (Asia Society, 2005).

With this study, we delve into pre-service teachers' aspirations for service in leadership roles, both instructional and administrative, and also the motivational factors that drive those aspirations. Our overarching purpose is to understand the potential role of pre-service teacher education in teacher leadership development so as to support career satisfaction and retention.

2.2. Career paths and generational differences

Staged perspectives of the teaching career offer insight into teacher career paths and leadership aspirations (Huberman, 1993; Quartz, Olsen, Anderson, & Barraza Lyons, 2009;). These traditional models posit that it is not until later career stages that teachers look toward leadership roles in the field. For example, Steffy and Wolf's "Life Cycle of the Career Teacher," which has six stages (novice, apprentice, professional, expert, distinguished, and emeritus), posits that it is during the final (emeritus) stage of teaching when teachers desire to extend their influence beyond the classroom and to take on other roles in the profession (e.g., mentoring new teachers). Similarly, Huberman (1993) proposed a three-stage understanding of teachers' careers (discovery, stabilization, and experimentation), hypothesizing that it is in the final (experimentation) stage that a teacher would typically seek to increase their impact on a school organization more generally. As such, historically teacher leadership has been a domain of educational practice reserved for more experienced, expert teachers (York-Barr & Duke, 2004; Ash & Persall, 2000). This linear view of teacher career paths contradicts recent evidence about the current

generation of teachers.

Recent research in the last decade or so from various countries has shown that many of today's teachers, even new teachers, desire leadership roles, advancement, and influence beyond the classroom (Berg et al., 2005; Donaldson et al., 2008; Fiarman, 2007; Johnson et al., 2005; Johnson & Birkeland, 2003; Margolis, 2008; Peske et al., 2001; Stone-Johnson, 2014; Taylor et al., 2011). This research also documented how this so-called "next generation" of teachers is less satisfied with the isolated culture and undifferentiated structure of the teaching profession.

With access to other types of jobs with better pay, more prestige, and opportunities for advancement (Cochran-Smith, 2004; Hoxby & Leigh, 2004; Margolis, 2008; McKenzie et al., 2008), teachers entering the profession today in many nations are more likely to adopt a short-term professional orientation, try out teaching, and then decide whether to remain in the profession. In a recent study of new science teachers in urban schools, for example, Rinke (2011) observed that teachers' career conceptions ranged from a desire to *integrate* into the profession to a desire to *participate* for a limited amount of time. Teachers with an integration orientation in her study envisioned classroom work followed by eventual work as an educational leader in some capacity.

Teacher retention and job satisfaction problems and insufficient opportunities for teacher advancement, influence, and leadership within and outside the classroom have fueled calls for reforms so as to promote teacher recruitment, satisfaction, and retention (Boyd et al., 2011; Donaldson et al., 2008; Hart & Murphy, 1990; Johnson et al., 2005; Margolis, 2008). For example, as mechanisms to accommodate leadership aspirations, some have suggested developing career ladders and broadening teacher responsibilities (Hart & Murphy; Johnson et al.; Smylie, 1995). Along these lines, Hulpia and Devos (2010) studied Belgian teachers and found that organizational commitment was greater in the context of distributed leadership and participative decision-making. Other proposals have focused on the profession's compensation structure including increased salary and differentiated and merit pay (Cochran-Smith et al., 2012; Johnson et al.; Margolis; McKenzie et al., 2005). These career and compensation structural factors may be especially important for the retention of more recent teacher generations (e.g., millennials). With this study, we seek to contribute to theory around teacher career paths as it relates to the current generation of teachers' perspectives on teacher leadership during pre-service teacher education.

2.3. Teacher motivations

As noted earlier, theoretically teachers' career decisions are multiple and interactively determined by labor market characteristics, school contextual factors, and as discussed in this section, individual-level variables. Prior research has identified some teacher-level factors associated with leadership aspirations, specifically aspirations for *administrative* leadership. For example, males, those who value leadership development of teachers by school leaders, and those who have been encouraged to seek administrative positions are more likely to espouse aspirations for the principalship (Howley, Andrianaivo, & Perry, 2005; Margolis, 2008). Leadership aspirations have also been examined relative to teacher ability, finding that effective teachers often desire advancement of position and responsibility (Hart & Murphy, 1990; Margolis, 2008).

In this paper, we examine pre-service teachers' aspirations for other forms of leadership as they relate to a particular individual-level factor: motivation for entering the teaching profession. We argue that fully understanding teacher career paths requires understanding of reasons for initial entry into the teaching profession, which research suggests can shape career paths (Olsen, 2008). Three broad categories of motivations for choosing a teaching career that have been identified in the literature are intrinsic, extrinsic, and altruistic. While motivations vary from person-to-person, commonly expressed motivations for teaching include: working with children/adolescents, making a social contribution, intellectual fulfillment, perceived teaching effectiveness, and enjoyment of teaching (Brookhart & Freeman, 1992; Olsen; Organisation for Economic Co-operation and Development, 2005; Watt et al., 2012). Other research has identified gendered reasons for entering teaching such as being socialized to "play teacher" and enter teaching as a normatively female profession, and the field's compatibility with family life (Olsen). Notably, some teacher preparation programs even aim to instill particular motivations, such as education as social justice (e.g., Cochran-Smith, 2004).

Evidence from meta-analytic syntheses and systematic literature reviews indicate that motivations are important determinants of behavior in general (Ryan & Deci, 2000; Uguroglu & Walberg, 1979). As such, motivations have been studied previously with respect to in-service teacher persistence and career paths. Watt and Richardson (2008) linked career persistence, career choices, and leadership aspirations to field-entry reasons such as perceived teaching ability and enjoyment of teaching. Howley et al. (2005) found that educator motivations for seeking out a principalship included making a difference, increasing one's impact and affecting larger numbers of students, and opportunities for creative thinking; on the other hand, job stress and accountability pressures were negatively related to principalship aspirations.

Building on prior research suggesting that teachers' career decisions are shaped by initial motivations for entering the field (Olsen, 2008), in the present paper we explore relationships between pre-service teacher motivations and leadership aspirations during pre-service education. For those teachers who do at the preservice teacher stage articulate aspirations for leadership, relating these aspirations to these initial reasons for entering teaching helps us understand *why* they intend to seek out such roles. Crucially, such information might be particularly useful for working with early-stage pre-service teachers who may be able to articulate their reasons for entering teaching, but lack awareness of what leadership roles are available to them. For example, advisors and teacher educators might be able to identify future leadership roles that might be appropriate for particularly motivated students; and, in turn, alert them to and encourage them to consider those roles. In addition, pre-service education could equip future teachers with the knowledge, skills, and dispositions associated with leadership roles.

2.4. The present study

There have been calls for additional research on teachers' career paths, decisions, and leadership aspirations (Johnson et al., 2005; York-Barr & Duke, 2004). While prior research has focused on new and early-career teachers, less attention along these lines has been paid to pre-service teachers (e.g., Klassen & Chiu, 2011). Given arguments for the unique generational characteristics of new waves of educators and a short-term career orientation among some new teachers (Peske et al., 2001), it is possible that even pre-service teachers might anticipate role differentiation and advancement as part of their work within the field of education. With this study then, we endeavored to understand pre-service teachers' instructional and administrative leadership aspirations for 5 and 10 years after entry into the teaching profession. If for this generation, pre-service teachers aspire vertical mobility and role differentiation including leadership, pre-service education is a suitable space to begin equipping teachers for a range of roles.

At the same time, given the importance of individual factors in teacher career paths, we seek to understand pre-service teachers' leadership aspirations in light of their motivations for entering the teaching force. Scholars have argued that understanding teacher career paths and decisions as well as *why* teachers make those decisions is critical (e.g., Johnson et al., 2005). For example, Klassen and Chiu (2011) stated, "Identifying the factors related to occupational commitment and quitting intentions helps researchers understand the processes that influence teachers' decisions about staying in the profession, and helps policy-makers and administrators understand how to keep effective teachers in the classroom" (p. 114). In particular, the field might benefit from knowledge around how pre-service teachers' motivations relate to their leadership aspirations.

3. Methods

The present exploratory study involved analysis of electronic survey data collected in 2011 from student teachers at a well-regarded U.S. school of teacher education in the Midwest. The general purpose of the data collection was to learn how an evolving pre-service teacher placement partnership between that institution and local schools influenced various partnership stakeholders. For this study, we used a subset of the collected data to explore how pre-service teachers view their career paths prospectively. An Institutional Review Board approved this research.

3.1. Participants and context

The sample included 74 pre-service teachers (student teachers) who were participating in teacher training and student teaching as undergraduates. About 31 percent of respondents were enrolled in an elementary education program, about 54 percent were enrolled in a secondary education program, about eight percent were enrolled in a special education program, and about seven percent were enrolled in some other program. The teacher preparation programs in which respondents were enrolled aim to build a local and national teaching force. Another thrust of the teacher preparation programs at this institution was to develop career educators (hence the focus on future aspirations in the survey). Permission to access the roster of respondents (and their e-mail addresses) was obtained from the university registrar. Respondents provided informed consent for their participation, with a response rate of 48.8%.[2] The 74 pre-service teachers in the sample were completing their assignments in 34 schools across eight districts, and were at different stages in their pre-service teacher education.[3]

3.2. Instrumentation

For the proposed study, we analyzed quantitative and qualitative data collected from a subset of closed- and open-ended survey questions related to our research questions. First, close-ended questions asked pre-service teachers to report on their job aspirations for 5 and 10 years into their careers: "Which job are you most likely to have in 5 years" and "Which job are you most likely to have in 10 years." These items allowed individuals to select multiple responses (classroom teacher; teacher specialist or coach; administrative position; school social worker, psychologist; education-related job outside of school; and job outside of the education field), although here we focus on only the first three possible responses. Because of the way the survey program, Qualtrics (2009), stores the data it was not possible to determine whether a missing response to these items represented a response of "no" or a missing response; we assumed that a missing response to an item indicated a "no" response (except when the respondent provided no response to the item's other components or adjacent items on the survey). While our interest was in leadership roles, we included classroom teaching for comparison purposes and to examine aspirations for hybrid roles. Second, an open-ended question on the survey elicited evidence of respondents' motivations for entering the teaching profession: "In a few sentences, please explain what motivates you to become a teacher." The survey was pilot tested and revised to support consistent respondent interpretation of questions, response categories and response consistency.

3.3. Analytic approach

We conducted descriptive quantitative and qualitative analyses of the survey data. Our quantitative analyses consisted of descriptive statistical analyses (e.g., percentages) to address the first research question, and correlational analyses to address the second research question. There is a dearth of literature concerning the relationships between pre-service teachers' motivations and leadership aspirations, and therefore our approach to addressing the second question involved exploring all such possible relationships. Given the dichotomous nature of the analyzed data, to answer the second research question we computed Spearman's nonparametric rank correlation coefficients, ρ. Variable-level missing data ranged between nine and 19 percent; we employed listwise deletion for univariate analyses and pairwise deletion for bivariate analyses.

We conducted qualitative analysis of data collected regarding teachers' motivations—allowing us to characterize pre-service teacher motivations for teaching. Open-ended survey data were analyzed in multiple iterations by the first author[4] using Atlasti, a qualitative coding software. In the first stage of analysis, we inductively coded teacher motivations to identify emergent themes and developed a coding scheme (Miles & Huberman, 1994). This process led us to consider these motivations in relation to the reviewed literature (e.g., Watt et al., 2012), at which point, we refined our coding scheme and recoded using a priori codes for motivation, as defined in the literature. Ultimately, we adopted a broadly organized coding scheme comprised of three general motivation codes derived from the literature: altruistic,[5] intrinsic and prior experiences teaching, as well as an other category. We had intended to incorporate a code for general extrinsic motivations, such as salary or benefits; however it was excluded because no respondent expressed such a motivation. Within these a priori categories, we conducted an inductive analysis to generate a second level of codes to explore specific motivations, such as 'enjoyment of teaching' within the general category of intrinsic motivations. We also re-examined all responses classified within a particular category to confirm that each response was appropriately classified within it, which increased our confidence in the patterns we observed in and extracted from these qualitative data, as we were unable to identify any responses that did not adhere to our codebook's definition of each category. Once the coding process was

[2] We were unable to examine sample representativeness due to the nature of the data source.

[3] Pre-service program year was not an observed variable in the dataset, so it was not possible to parse out differences by pre-service program experience.

[4] While it was not possible to examine inter-rater reliability, the final coding of responses was conducted in accord with a well-defined codebook to support reliability.

[5] While here we differentiate between these three categories of motivations, it bears noting that altruistic motivations might be considered intrinsic in nature conceptually.

Table 1
5- and 10-year job aspirations.

Job	*N*	Percent
5 years		–
Classroom teacher	67	95.5
Teacher specialist or coach	66	27.3
Administrative position	65	7.7
10 years		–
Classroom teacher	67	89.6
Teacher specialist or coach	66	37.9
Administrative position	66	36.4

Note. Percentages at 5 years and 10 years do not sum to 100 because respondents could indicate multiple jobs.

complete, we quantified the qualitative data (Miles & Huberman) to analyze quantitatively relationships between pre-service teachers' job aspirations and motivations for teaching.[6]

4. Results

4.1. Leadership aspirations

Table 1 below summarizes responses concerning the pre-service teachers' 5- and 10- year job aspirations. Individuals could select multiple jobs, thus the percentages for each job aspiration do not sum to 100 at either 5 years or 10 years. The majority of respondents indicated that they would likely remain in a classroom teacher role (96% at 5 years and 90% at 10 years). At 5 years, 27 percent indicated that they would likely be a teacher specialist or coach and 8 percent would likely be in an administrative position. At 10 years, respectively 38 percent and 36 percent indicated that they would serve as a teacher specialist/coach or administrator. While leadership aspirations were evident at 5 years, particularly aspirations for instructional leadership, from 5 to 10 years (especially administrative) leadership aspirations increased.

While a large majority of the teachers indicated that they would likely be classroom teachers at 5 and 10 years, many teachers also indicated they would serve in other roles as well. Therefore, we then examined the frequencies of response patterns (i.e., just classroom teacher, just teacher specialist/coach, just administrator, and multiple roles). As shown in Table 2, about 63 percent of respondents at 5 years and 39 percent of respondents at 10 years indicated that they would likely be solely a classroom teacher; thus the percentage of pre-service teachers indicating that they expect to be solely a classroom teacher dropped appreciably from 5 to 10 years. The percentages of respondents indicating that they would likely be solely a teacher specialist/coach (zero percent at 5 years and about two percent at 10 years) or solely an administrator (about 2 percent at 5 years and about 5 percent at 10 years) were small.

Importantly, about 32 percent at 5 years and about 52 percent at 10 years indicated that they would likely hold multiple roles (see Table 2). The most common combination of roles was classroom teacher and specialist/coach at both 5 years and 10 years (26 and 20 percent respectively). Very few pre-service teachers indicated other job combinations at 5 years (i.e., classroom teacher and administrator; teacher specialist/coach and administrator; or classroom teacher, teacher specialist/coach, and administrator). At 10 years, about 15 percent of teachers selected each of two other role combinations, namely classroom teacher and administrator; and classroom teacher, teacher specialist/coach, and administrator. Finally, it is notable that a few respondents (about 3 percent) indicated that they would likely not be in any of these three roles at 5 and 10 years.

Table 2
5- and 10-year job aspiration patterns.

Pattern	5 years ($N = 65$)		10 years ($N = 66$)	
	Count	Percent	Count	Percent
Classroom teacher	41	63.1	26	39.4
Teacher specialist/coach	0	.0	1	1.5
Administrator	1	1.5	3	4.5
Multiple roles	21	32.3	34	51.6
None	2	3.1	2	3.0

Note. Nine individuals who did not respond to all three 5-year job aspiration questions, and eight individual who did not respond to all three 10-year job aspiration questions, were excluded for analysis.

4.2. Teacher motivations

Our coding scheme for teacher motivations consisted of a set of three general motivations, as well as some coded as 'other'. Table 3 summarizes the pre-service teachers' general responses about their motivations for entering the teaching profession. The most frequently expressed motivations in general were altruistic (about 83% of sample), with respondents describing their rationale for entering the profession as an opportunity to help others. Second most common, respondents viewed their career motivations as intrinsic (55%) in nature. These motivations were described as internal rewards of engaging with youth in meaningful ways. Prior experience was the least common of the three motivations (23.3%), related to students' prior experiences with teaching or as a student. Additionally, a small percentage of other motivations were identified (15.0%), including a sense of efficacy at teaching.

In terms of altruistic motivations, teachers expressed a range of rewards they anticipated gaining from a human services oriented career. Table 4 presents the frequencies with which respondents expressed specific altruistic motivations, along with specific examples of each. The most frequently expressed altruistic motivation was to help kids learn, grow and succeed (68%). This was not surprising given the ethics of service and care so embedded in educational institutions (Lowenhaupt, Spillane, & Hallet, forthcoming). Along similar lines, the motivation to "motivate and inspire children" (25%) related to a desire to impact the lives of children beyond the classroom. Other altruistic motivations revealed a social justice motivation, with a desire to improve society via teaching. This motivation, more than the others, suggests a view of teaching as a starting point for engaging in social issues and problems on a larger scale.

Intrinsic motivations were also commonly cited as reasons for

Table 3
General Pre-service Teacher Motivations (N = 60).

Motivation	Percent
Altruistic motivations	83.3
Intrinsic motivations	55.0
Prior experiences	23.3
Other motivations	15.0

Note. Each percent is the percent of sample members with valid motivation responses who expressed any motivation falling within the respective general motivation category. Percentages do not sum to 100 because respondents could express multiple motivations.

[6] A fully-inductive supplemental analysis of the qualitative data, conducted as a check on our findings, revealed that two responses classified in the "other intrinsic" motivation category referenced a motivation for teaching related to interest in the subject matter. Since only two responses expressed this motivation and it did not represent a pattern as robust as our others (which emerged on the basis of at least 3 responses), we decided to leave these two responses classified as "other intrinsic" response.

Table 4
Specific pre-service teacher altruistic motivations (N = 60).

Motivation	Percent	Exemplar responses
Helping kids learn/grow/succeed	68.3	I am motivated to become a teacher because I can help students learn; educating students to help better their lives
Motivate/inspire children	25.0	I want to provide support and encouragement to students while helping them learn, discover what they are passionate about, and reach their maximum potential; aid them in gaining the motivation to obtain knowledge by actively learning and exploring the world around them
Increasing social/societal equity	15.0	I plan to teach for a number of years and then pursue a doctoral degree in education policy making in hopes to one day act as an advocate for the students who are not receiving an adequate education in our current education system; 'm here to give back to the community and help out those that have been at the bottom of the pyramid for far too long (sic)
Making a social/societal contribution	15.0	as well as impact society as a whole. I can educate people in a way that may lead them to be members of a healthier society; I believe that educators have a unique role to change society. We can have a great influence on future generations and what kind of people our students are and can become
Other altruistic motivations	8.3	I've been given so much in my life, and this is my way of giving back.); I want to make a difference in the lives of families that have children with disabilities

Note. Each percent is the percent of sample members with valid motivation responses who expressed the respective specific altruistic motivation. Percentages do not sum to 100 because respondents could express multiple motivations. Exemplar responses are included in their original, full form to preserve context, even if the responses indicate other motivations as well.

Table 5
Specific pre-service teacher intrinsic motivations (N = 60).

Motivation	Percent	Exemplar responses
Enjoy teaching	30.0	I like coming to school everyday and experiencing something different; I enjoy watching the progression of children learning
Working with children/adolescents	30.0	I enjoy working with young students; I have always loved kids
Intellectual fulfillment	8.3	I think it will be a challenging profession; I am highly interested in how children learn
Other intrinsic motivations	10.0	I had always liked math in school; I want to be a teacher because of the passion that I have for this career

Note. Each percent is the percent of sample members with valid motivation responses who expressed the respective specific intrinsic motivation. Percentages do not sum to 100 because respondents could express multiple motivations. Exemplar responses are included in their original, full form to preserve context, even if the responses indicate other motivations as well.

entering the profession. Table 5 presents the frequencies with which respondents expressed specific intrinsic motivations. It was within this intrinsic motivation category that respondents expressed the two second-most common specific motivations (i.e., enjoyment of teaching and working with children/adolescents). Many students felt that teaching would be enjoyable in its own right (30%). Just as commonly, students noted that the joy of working with youth motivated their commitment to teaching (30%). Other intrinsic motivations were less common, but as a whole, the intrinsic rewards of the work were viewed by many as a clear motivation for entering the profession.

A smaller yet substantial percentage of motivations related to students' prior experiences either in other kinds of teaching roles or as a student. Table 6 contains the frequencies with which respondents expressed specific motivations relative to prior experiences. Positive experience as a student was the most common type of prior experience cited as a motivation for entering the profession (10%). This is not surprising that students who had good experiences with teachers or in school would be motivated to become teachers themselves. Alternately, a smaller percentage of students identified negative experiences as a motivation (5%). In this regard, students were generally motivated to ensure future students did not have the same negative experiences they themselves had in school. Within this category, some identified early experiences as a teacher or camp counselor as motivating their career path (8.3%). These formative experiences established a desire to pursue teaching as a formal career.

4.3. Relationships between pre-service teachers' leadership aspirations and motivations

Our next findings pertain to relationships between the jobs pre-service teachers expect to have at 5 and 10 years and expressed motivations for teaching. As shown in Table 7, some expressed motivations for teaching statistically related to 5- and 10-year job aspirations, and these correlations were small to moderate in magnitude. In general, aspirations for classroom teaching were positively correlated with altruistic motivations generally (at both 5 and 10 years) and being motivated to help kids learn/grow/succeed, and negatively correlated with prior teaching experiences (both at 5 years). These correlations suggest that those entering the profession with a commitment to serving children have a strong intention to stay close to the lives of students in the classroom. The negative relationship between prior teaching experience and aspirations to work as a classroom teacher at 5 years can be interpreted to mean that those who entered teaching because they have taught before tend to not want to be in the classroom 5 years later.

In terms of leadership positions, aspirations to work as a teacher specialist/coach were positively associated with motivations related to motivating/inspiring children (at 5 and 10 years) and previous good teachers/educational experiences (10 years). As far as administrative positions, only the intellectual fulfillment motivation was positively related to aspirations for being an administrator at both 5 and 10 years. These correlations related to various leadership opportunities suggest that hybrid roles and leadership positions were viewed as fulfilling the need for intellectual growth, as well as the commitment to improving the lives of children.[7]

5. Discussion

One career path of particular importance to the education field is the development of teachers into leaders, broadly defined. However, prior work on teacher career paths has generally focused

[7] Unreported analyses provided no evidence for either differences in leadership aspirations, motivations, or differential relationships among them, by race/ethnicity, gender, or program (e.g., elementary versus secondary), though we suspect this may be because of limited statistical power.

Table 6
Specific pre-service teacher motivations related to prior experiences (N = 60).

Motivation	Percent	Exemplar responses
Prior teaching experience	8.3	Through much work with students previous to my entering the program, I finally decided on this as a career; I worked as a pre-k teacher for two years
Previous good teachers/ educational experiences	10.0	Nobody has impacted me more than my teachers; Music ha given me a lot of amazing opportunities that I think some people miss out on because they did not have a music teacher who was excited and enthusiastic and relatable in a way that would grab people's attention toward those opportunities
Previous bad teachers/educational experiences	5.0	Quite frankly, I'm a minority student. I've been through the school system. I know what it's like to experience prejudice, social injustice, and discrimination; I had terrible science teachers in middle school and I think so much more can be done and learned at that level
Other prior experiences	5.0	I had a classmate commit suicide at the age of 13 and that event has significantly impacted my road to teaching; I had never thought of being a teacher prior to entering a low-income area my sophomore year of college. It was this experience that showed me the impact that I can have but also how much these students can learn when they are taught in new and exciting ways

Note. Each percent is the percent of sample members with valid motivation responses who expressed the respective specific motivation related to prior experiences. Percentages do not sum to 100 because respondents could express multiple motivations. Exemplar responses are included in their original, full form to preserve context, even if the responses indicate other motivations as well.

Table 7
Correlations between pre-service teacher motivations and 5- and 10-year job aspirations.

Motivation	Classroom teacher		Teacher specialist or coach		Administrative position	
	5 years	10 years	5 years	10 years	5 years	10 years
Any prior experience	−.24	−.08	−.08	.03	.18	.11
Prior teaching experience	−.48***	−.10	−.19	−.25	.16	.04
Previous good teachers/educational experiences	.08	−.07	.16	.30*	.16	.00
Previous bad teachers/educational experiences	.05	−.18	.03	.12	.24	.16
Other prior experiences	.05	.08	.03	−.03	−.06	.00
Any intrinsic motivation	.10	.15	.12	.12	.11	.14
Enjoy teaching	.15	.10	−.01	.13	−.02	.08
Intellectual fulfillment	−.21	−.10	−.19	−.25	.40**	.30*
Working with children/adolescents	.15	.22	.23	.13	−.03	−.08
Other intrinsic motivations	.08	.11	.04	−.05	−.09	.00
Any altruistic motivation	.51***	.30*	.18	.00	−.07	.03
Helping kids learn/grow/succeed	.34**	.13	.11	−.03	.03	.10
Motivate/inspire children	.13	.19	.41**	.31*	−.16	−.08
Increasing social/societal equity	.10	.14	−.16	−.15	−.11	−.10
Making a social/societal contribution	.10	−.17	−.16	−.06	−.11	.10
Other altruistic motivations	.07	.10	−.19	−.12	−.08	.04
Other motivations	−.12	−.02	.05	.04	−.11	−.20

Note. Correlations are Spearman's rank correlations ρ. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$. Pairwise deletion used with pairwise *N*s ranging from 59 to 60.

on in-service, rather than pre-service, teachers (e.g., Cochran-Smith et al., 2012). In terms of teacher leadership in particular, most studies are also descriptive rather than explanatory in nature, with the need to understand more about *how* teacher leadership develops (York-Barr & Duke, 2004) and *why* teachers seek out such roles. With the aim of broadening teacher leadership development scholarship to include pre-service education, the present exploratory study offers a nuanced interrogation of pre-service teachers' leadership aspirations in light of their motivations for entering the profession. In doing so, we sought to not only describe teacher leadership aspirations at the teacher education stage but also understand *why* teachers might anticipate taking on such roles.

In sum, these findings suggest that some pre-service teachers, before even reaching the classroom, expect leadership roles in the education field after as few as 5 years in their career (and particularly after the first 10 years). Our findings suggest that pre-service teachers generally expect to stay in the classroom during these initial years, but that many desire leadership roles as well. We also found that some pre-service teachers did not expect to serve in any of the roles after 5 and 10 years, consistent with findings that some of today's teachers view work in education as a short-term career (Peske et al., 2001). Qualitative data from one participant concerning a move into education policy even suggests an anticipated "teacherpreneur" role in his or her future (Berry, 2013).

Of note, the prevalence of aspirations to possess multiple roles at 5 and 10 years might imply that pre-service teachers expect to take on multiple roles simultaneously (e.g., a hybrid position involving both classroom teaching and instructional coaching). These findings comport with recent evidence that a fair amount of the current teacher workforce do desire such differentiated roles (e.g., Harris International, 2013). In line with research on this new generation of teachers, respondents indicated that a career in the classroom would not be sufficient to hold their attention. Instead, even as early as pre-service education, teachers were considering task diversity and leadership opportunities as a common aspiration. In relation to teacher attrition problems, these findings might suggest that a lack of perceived vertical mobility can explain in part why some classroom teachers are not retained.

However, simultaneous service in some of these roles is more plausible than others. For example an educator could likely serve as both a teacher and specialist/coach. In terms of being both a teacher and administrator, this would be more likely for instructional administrative positions such as department chair than school-level administrative positions such as vice principal or principal. We deem it unlikely that an individual could plausibly serve as a teacher, teacher specialist/coach, and administrator at the same time (a combination reported by a small number of teachers in our sample). Consequently, some of the response patterns we observed might represent intentions to hold multiple roles simultaneously, whereas others might convey uncertainty in or diversity of pre-

service teacher's aspirations. The indication of multiple likely roles nevertheless suggests at least *interest* in role differentiation and leadership opportunities.

These findings then, offer theoretical insights for extant models of teaching career structure, perhaps indicating that these models should be revisited and updated from the perspective of current and future generations of teachers. In general, these models assume that it is not until later stages of the teaching career that teachers seek influence beyond the classroom (Huberman, 1993; Steffy & Wolfe, 2001). However, recent work with new teachers (e.g., Rinke, 2011) and recently tenured second-stage teachers (e.g., Donaldson et al., 2008), and our findings here with pre-service teachers, support the contention that some teachers desire professional advancement and means of influence through leadership earlier in their career. Indeed, sizeable shares of our respondents indicated that they would likely take on instructional or administrative leadership roles much earlier in their career than these models would predict. These models are often also linear in nature, suggesting that teachers move from one position to the next, and might be revised to accommodate "hybrid" roles in which one has a foot in both teaching and leading.

The motivations for teaching expressed by these pre-service teachers—such as intrinsically valuing work with students and positive prior experiences—were very similar to those observed in prior research (e.g., Olsen, 2008; Watt et al., 2012). More importantly, we found evidence that pre-service teachers' job aspirations relate to their motivations for entering the profession in the first place. We observed consistently that the desire to motivate/inspire children was associated with aspirations to serve in an instructional leadership role (i.e., teacher specialist or coach). While one might think that a desire to motivate and inspire children might cause one to seek out solely work in the classroom, this finding suggest that teachers might derive satisfaction also through work that indirectly impacts students (i.e., instructional coaching).

Findings also reveal that aspirations for an administrative position were associated with an intellectual fulfillment motivation for entering the teaching profession. This finding is reasonable in light of evidence that high ability teachers often desire more responsibilities and advancement (Hart & Murphy, 1990; Margolis, 2008). It is especially noteworthy given recent evidence for increases over time in the cognitive ability of individuals entering teaching (Lankford, Loeb, McEachin, Miller, & Wyckoff, 2014); if the cognitive ability of our nation's teachers is increasing, so too might the percent motivated by intellectual fulfillment and ultimately seeking leadership positions. Altogether, our associational results offer support for theoretical understandings of career development and decisions that highlight the role of individual factors such as motivations (Solano, McDuffie, Farley-Ripple, & Bruton, 2010).

Overall, pre-service teacher motivations were more highly correlated with 5-year rather than 10-year job aspirations. At the same time, the correlations between motivations and job aspirations were slightly higher at 5 rather than 10 years. This suggests that initial motivations for teaching may be more related to earlier rather than later career aspirations and paths. Our findings also suggested possible uncertainty among some teachers in terms of their career expectations both 5 and 10 years into teaching (specifically the selection of multiple likely jobs that one would not ordinarily hold concomitantly). One might also interpret this pattern in light of career path scholarship, which emphasizes a role of school context in teacher career decisions (Cochran-Smith et al., 2012). Certainly the pre-service teachers' experiences in the field may shape their ultimate career paths.

5.1. Preliminary conclusions

On the whole, this study offers some evidence that many in the new generation of teachers are aspiring teacher leaders, at least in the context of elite teacher preparation programs. What is especially noteworthy among our findings is the fact that these anticipated career paths are defined prior to field entry, which suggests a need to accommodate these aspirations during pre-service teacher education. These future teachers are interested in maintaining their commitment to the classroom at the same time that they seek diverse, hybrid roles within education. Our work further suggests a relationship between these aspirations and teacher motivations as they enter the profession. We argue that these relationships are crucial to understanding how best to adapt both teacher preparation and in-service practice to better suit the needs, interests, and commitments of the rising generation of teachers.

Taken together, this work suggests that the new generation of teachers will likely seek to move rapidly along a career path that incorporates opportunities for leadership and role diversity early on. Motivated by altruistic and intrinsic factors and informed by their own experiences of education, these aspiring teachers view their future careers as multifaceted, shifting over time, and leading to leadership opportunities of broad scope. Despite these leadership aspirations, however, many of them appeared to value the classroom and intend to keep at least one foot in teaching, at the same time that they expand their work beyond the classroom walls.

Given the expansion of the education field and the emergence of new forms of leadership both within and outside of schools, these findings resonate with current developments in the field. While our study was based in the US, issues such as the attractiveness and status of the teaching profession and relative salary declines are not unique to the US (McKenzie et al., 2005). Therefore, we argue that these findings may also be relevant for nations experiencing similar problems within their education systems. Below we discuss possible implications for practice and policy, as well as for future research.

5.2. Possible implications

Beyond the scholarly community, these findings have implications for teacher educators, practitioners in schools and districts (e.g., administrators), and policy makers at various levels. We found that before even officially entering the education profession, many pre-service teachers do not necessarily expect to remain exclusively in the classroom, but rather aspire to serve in leadership roles as well. In light of this, it is possible that an inability to take on such leadership roles and advance professionally might cause teachers to be dissatisfied and leave the classroom. Thus, there may be a need for the education profession to accommodate this next generation of teachers' aspirations through leadership development. Our results suggest that the extent to which the teaching profession can develop as a hybrid practice that incorporates both classroom and leadership opportunities may be crucial for retention of this new generation.

Beyond formally expanding such opportunities within existing structures of the teaching profession, we also posit that it is important to consider the kinds of training experiences that might foster and encourage such aspirations in early career stages. Traditionally, teacher and leadership training within higher education institutions are viewed as separate, staged endeavors. This study suggests the need to embed leadership perspectives in earlier training efforts, perhaps even as early as pre-service teacher training. In schools, leadership development offered to current teachers through induction, mentoring, and in-service professional development experiences might support their leadership

development (e.g., instructional leadership). Given evidence for challenges in in-school teacher leadership development however, such as a lack of principal support (e.g., Kruse, Louis, & Bryk; Mangin, 2007; Smylie & Denny, 1990), pre-service education experiences might be designed to serve a similar purpose.

For teacher educators, it might be prudent to identify pre-service teachers' motivations and anticipated career paths, offering differentiated training opportunities to support their leadership development (e.g., instructional leadership, and distributed leadership). Equipping future teachers to take on these roles later, either informally and formally, might support their career satisfaction and long-term retention, two educational problems of cross-national importance (Howley et al., 2005; Klassen & Chiu, 2011; McKenzie et al., 2005; Smylie, 1995; York-Barr & Duke, 2004). Pre-service teacher education actors such as professors, advisors, and clinical supervisors might alert future teachers to the full suite of leadership roles, formal and informal, that will be available to them, or even encourage them to consider taking on such roles. Similarly, teacher education could equip pre-service teachers with the knowledge, skills, and dispositions called for by such roles—through coursework or other experiences, for instance—to facilitate their in-school uptake. Knowledge of pre-service teacher aspirations, or at least initial teaching motivations related to those aspirations, should support targeted efforts toward this end. Such developmental opportunities might even be availed to all pre-service teachers, an approach employed in high-achieving Finland's initial teacher education system (Asia Society, 2015) to equip all teachers for the potentiality of “hybrid” roles.

Scholarship internationally offers some clues as to how to formalize teacher leadership development during pre-service education, through either coursework or practica (Ying & Ho, 2015). One such leadership development activity at the pre-service stage is engagement in service learning projects focused on a local-level problem (Bond, 2011; Ross et al., 2011). For example, Rogers and Scales (2013) required pre-service teachers to participate in 10-hour projects related to community and family relations and professional development and submit written reflections on these experiences. Others possible mechanisms include pre-service teacher engagement in in-service workshops focused on teacher leadership during student teaching, interaction with current teacher leaders [as Holland, Eckert, and Allen (2014) did virtually], or grant writing.

Issues of retention are an important focus for policymakers as well. Losing more experienced teachers might be particularly problematic given evidence that they are somewhat more effective than their new counterparts (Ingersoll & Smith, 2003; Murnane & Phillips, 1981; Rockoff, 2003). At the policy level, retention of the next generation of teachers might hinge on reforms to teacher career and compensation structures such as merit pay (Cochran-Smith et al., 2012; Hart & Murphy, 1990; Johnson et al., 2005; Margolis, 2008; McKenzie et al., 2005; Smylie, 1995). Furthermore, policy support for hybrid roles, such as instructional coaches, might alleviate some of the issues associated with such initiatives in a context of austerity and limited resources (Lowenhaupt, McKinney, & Reeves, 2014).

5.3. Limitations and future directions

Of course, our findings should be interpreted in light of the critical methodological limitations of small-scale, exploratory studies such as this. Chief among these limitations is our reliance on a relatively small and non-random sample from a particular elite teacher education program in 2011. This limitation constrains the plausible generalizability of our findings to all pre-service teachers and over time and warrants further work with larger, more diverse, and recent samples of pre-service teachers. This includes both large-scale quantitative studies of the landscape of teacher leadership and its development across pre-service programs (York-Barr & Duke, 2004) as well as in-depth qualitative studies to shed light on the complexity of the *how* and the *why* of paths to teacher leadership and hybrid roles. For instance, data collected in subsequent studies via interviews with pre- and in-service teachers might yield more rich and nuanced findings.

Other key limitations relate to our research design and instrumentation. Some limitations pertain to the cross-sectional nature and associational aspects of our study design. Given the complex nature of and equifinality of teacher career paths (Smylie & Denny, 1990), longitudinal studies that follow pre-service teachers into their careers are needed to understand if and how motivational factors and early aspirations relate to ultimate career paths; as well as how pre-service factors interact with other environmental variables (e.g., school context) dynamically over time to shape teacher career paths. Given that our study exploratorily investigated many interrelationships among general and specific motivations and anticipated career paths, the possibility exists that some observed relationships represent Type I errors.

In terms of our instrumentation, our leadership aspiration variables were limited to teacher specialist or coach and administrator, and future work should revisit our findings with an expanded set of specific formal and informal leadership roles (e.g., mentor teacher, data coach, and department head). While we were unable to follow these pre-service teachers to track their actual career decisions, pre-service teachers' intentions have been linked to actual career decisions (DeAngelis, Wall, & Che, 2013). Indeed, our findings should be considered preliminary, interpreted in the context of like teacher education programs, and warrant replications that take into consideration additional variables such as socio-organizational characteristics of those schools teachers enter (e.g., teacher social networks) and other teacher-level factors.

Beyond the need to replicate and extend through additional research this study's findings, a number of other important questions in this realm are also worth investigating. We argue that pursuit of the research agenda proposed below for the field is necessary to fully understand teacher education and development for the complex, multidimensional teacher leadership construct:

1. Toward which specific teacher leadership roles—formal, informal, and hybrid—do those entering the teaching profession aspire? At what point during their careers do those entering the teaching profession expect to take on such leadership roles? How do these aspirations and expectations vary by teacher characteristics such as gender and race/ethnicity?
2. Why do teachers entering the teaching profession aspire towards specific teacher leadership roles (formal, informal, and hybrid)? What do these individuals expect in return for their teacher leadership service (e.g., perceived professionalism, compensation)?
3. To what extent does the pre-service teacher education system:
   a. Expose future (or prospective) teachers to possible leadership roles? When during pre-service teacher education does this occur?
   b. Encourage future teachers to take on leadership roles? When during pre-service teacher education does this occur?
   c. Equip future teachers with the knowledge, skills, and dispositions (e.g., collegiality, collaboration strategic planning, consensus-building) necessitated by leadership roles; and to navigate existing socio-organizational factors that might impede teacher leadership? When during pre-service teacher education does this occur?

4. How do teacher leadership knowledge, skills, and dispositions affect those who remain in the classroom?
5. How do pre-service teacher leadership development factors interact with school socio-organizational factors (e.g., trust, presence of teacher networks) to support or constrain teacher leadership aspirations and development?
6. What formal structures and policies support or constrain teacher leadership aspirations and development at different in-service career stages?
7. What are the relative influences of individual characteristics, pre-service and in-service teacher leadership development, and school socio-organizational factors, on teacher leadership aspirations and development?
8. How do the answers to the above questions differ across socio-politically and culturally diverse national contexts?

As the education field shifts to incorporate greater role diversity, particularly in the area of teacher leadership (Lowenhaupt et al., 2014; Hopkins, Spillane, Millerd, & Heaton, 2013), building capacity to fill such roles has become a crucial issue. Given evidence for effects of teacher leadership organizationally, instructionally, and in terms of student achievement, sorting out through research the (interactive) roles of both pre- and in-service teacher leadership development is critical in achieving education system aims (York-Barr & Duke, 2004). Research addressing questions such as those advanced above should offer critical research-based knowledge to guide building of capacity for teacher leadership. In doing so, such efforts might better position education as a bonafide profession with opportunities to differentiate and advance, making it a more attractive field for members of this and future generations.

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