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Career choice motivations in teacher training as predictors of burnout and career optimism in the first year of teaching

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HIGHLIGHTS

- Preservice teachers reported their career choice motivations using the FIT-Choice scale.
- Motivations were examined in relation to burnout and career optimism in the first teaching year.
- Personal ability and intrinsic career value motivations related to less burnout and more career optimism.
- Viewing teaching as a fallback career and personal utility motivations related to more burnout.
- Intrinsic motivations may lead to more optimal teacher outcomes, while extrinsic may act oppositely.

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1. Teaching

Teachers' well-being and career longevity have garnered increased attention in recent years, with findings consistently illustrating high levels of chronic stress, fatigue, mental health symptomatology, and burnout among educators (Katz, Greenberg, Jennings, & Klein, 2016; Steinhardt, Smith Jaggars, Faulk, & Gloria, 2011). These negative experiences not only impact teachers' professional performance (Fernet, Guay, Senecal, & Austin, 2012; Kyriacou, 2001; Loeb, Darling-Hammond, & Luczak, 2002), but also contribute to high rates of attrition observed in the profession (Struyven & Vanthournout, 2014). The early career stage has been identified as a particularly important area of focus, with recent findings suggesting that beginning teachers' well-being (McLean, Abry, Taylor, Jimenez and Granger, 2017) and impressions of commitment to the career (Goldstein, 2005) may be especially vulnerable as they establish themselves in their new roles. It has recently been estimated that up to 50% of new teachers leave their positions within their first five years (Gallant & Riley, 2014; Skaalvik & Skaalvik, 2011, 2016; Struyven & Vanthournout, 2014). These attrition rates are concerning given that high teacher turnover is related to lower student achievement (Milanowski & Odden, 2007), and contributes to an increasing shortage of practitioners to meet teaching demands in multiple nations (Ingersoll, 2003; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2013).

Efforts to inform the issues of teacher well-being and attrition have paid much attention to external factors such as classroom/school features and larger state and national policies as predictors of teacher outcomes (Borman & Dowling, 2008; Guarino, Santibanex, & Daley, 2006; Warner-Griffin, Cunningham, & Noel, 2018). However, there is also a need to understand how factors stemming from within teachers impact their career progressions. According to Day and Gu (2010), teachers' commitment over time and effectiveness in the classroom are influenced by a combination of internal (personal) and external (workplace, policy) factors. Illustrating progress along this vein, teachers' personal characteristics have begun to be recognized internationally as important factors to investigate (Aksu, Demir, Daloglu, Yildirim, & Kiraz, 2010; Goodson, 2003; Heinz, 2015), especially as our understanding of the teaching profession has shifted towards a more comprehensive view of teachers as educational socializers whose personalities and experiences play a large role in their effectiveness (Goodson, 1994; Heinz, 2015; Kagan, 1992). Better understanding how teachers' personal characteristics work to influence their experiences and outcomes, and investigating these relations among early career teachers in particular could move the field toward a more holistic (Day, 2017) picture of the myriad factors affecting teacher

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performance and longevity.

In service of these goals, the present study investigates career choice motivations among teacher trainees as predictors of later burnout and career optimism once in their teaching roles. Results of this study can provide programs of teacher training, selection and induction with information on what types of individuals might need more support as they progress through training and the early career stage. As well, results could give preservice teachers or those considering a career in education more concrete information when assessing whether teaching is right for them. This information could help attract individuals who are more likely to succeed as teachers and, alternately, discourage those who may be more likely to struggle and eventually leave their positions.

1.1. Teachers' career choice motivations

While the area of human motivation has a rich empirical history, there is comparatively less research exploring motivation among teachers, although this topic has garnered more attention in the past decade (Richardson & Watt, 2010). Foundational studies in this area have distinguished between altruistic (service-oriented), intrinsic (the doing of an activity for its inherent satisfaction, Ryan & Deci, 2000), and extrinsic (the doing of an activity in order to attain some definable outcome, Ryan & Deci, 2000) motivations for choosing a teaching career (Brookhart & Freeman, 1992; Young, 1995), and have further identified altruistic and intrinsic motivations as consistently high priorities for teachers in their career choices (Brookhart & Freeman, 1992). These motivations have been studied most among preservice teacher samples. One study conducted exclusively among undergraduate students still considering their career paths reported that while having a job that was enjoyable was important for all surveyed, individuals who were considering teaching were more likely to cite factors such as job responsibility and contributing to society as important (Kyriacou & Coulthard, 2000). Further still, work conducted among undergraduates already committed to a teaching career found that the majority reported similar desires to make societal contributions, work with children, and attain personal fulfillment as factors central to their career choice (Manuel & Hughes, 2006). As well, a multi-country investigation of teaching motivations among high-school students (Han, Borgonovi, & Guerriero, 2018) found that students were more likely to consider becoming a teacher when extrinsic factors such as salary and job conditions were perceived as better.

While these works provide important information about how teachers' career choice motivations might be described, a clear next step is making connections between these motivations and teacher outcomes. Recent empirical work has provided some initial insight: it has been shown that more intrinsic motivations for teaching are associated with higher self-efficacy as well as greater pedagogical knowledge among preservice teachers, and that more extrinsic motivations are associated with lower pedagogical knowledge and intentions to remain in the field for shorter time periods (Bruinsma & Jansen, 2010; Konig & Rothland, 2012). In addition, preservice teachers' desire to work with children and adolescents has been shown to relate to their planned effort and persistence in teaching-related tasks and to their motivations to engage in leadership roles when making predictions about their future teaching positions (Fokkens-Bruinsma & Canrinus, 2014).

Further studies have attempted to speak more directly to how motivations for teaching might impact individuals' job satisfaction and likelihood of attributing. Watt and Richardson (2008) identified three profiles of preservice teachers: “highly engaged persisters” who anticipated remaining in the field for their entire career, “highly engaged switchers” who despite being engaged with teaching reported that they might still seek other career paths, and “lower engaged desisters” who although enrolled in training were not planning on pursuing a long-term teaching career. Authors reported that highly engaged persisters cited passion for teaching and intrinsic satisfaction as primary career motivations, whereas lower engaged desisters reported concerns about career demands and unpleasant training and practicum experiences as reasons they might turn away from teaching. These and similar explorations (see Chesnut & Burley, 2015; Eren & Tezel, 2010) represent crucial first steps in fully defining how a practitioner's reasons for choosing a teaching career might predict their longevity in the field. However, these studies have been conducted exclusively within the preservice period and have relied on participants' predictions of how they will feel about teaching rather than capturing their actual experiences once they are practicing. Given this, the present study offers an important elaboration on current work in that we examine how career choice motivations reported while participants were in their preservice training programs impacted outcomes measured after they transitioned into their formal teaching careers.

1.2. Measuring teachers' career choice motivations

The increasing interest in the study of motivation among teacher populations has led to the development of tools for consistently defining and measuring teachers' career motivations. Given this, a secondary goal of the present study was to apply a validated framework describing teachers' career motivations in order to strengthen the body of literature surrounding the consistent measurement of these factors. Participants' career choice motivations are captured in the present study using the Factors Influencing Teaching Choice scale (FIT-Choice; Watt & Richardson, 2007). The FIT-Choice is a validated tool based on a systematic, theory-driven framework, used to assess a set of factors (i.e., teacher motivations) that has historically been loosely defined and inconsistently measured. Scale developers created this scale based on the Expectancy-Value Model of motivation (Wigfield & Eccles, 2000) which broadly characterizes an individual's appraisals of whether or not a choice might lead to a desired outcome as key factors in their decision-making. In utilizing the FIT-Choice scale, developers have been able to describe a range of motivations consistently reported by current and prospective teachers as important to their career choices (Richardson & Watt, 2006; Watt & Richardson, 2007). Specifically, motivations captured by this scale can be categorized into the following seven factors:

1. Personal ability, or one's self-appraisal of their own teaching skills (an intrinsic motivation).
2. Intrinsic career value, or the extent to which one has a genuine, intrinsic interest in and desire to pursue teaching (an intrinsic motivation).
3. Fallback career, or the extent to which one views teaching as a “backup” or “second choice” career (an extrinsic motivation).
4. Prior teaching and learning experiences, or the extent to which one was inspired by previous teachers or by their experiences teaching students (usually in a teaching practicum; an intrinsic motivation).
5. Social influences, or the extent to which others (one's family and/or friends) encouraged or expected them to become a teacher (an extrinsic motivation).
6. Personal utility value, or one's perceptions of the practical aspects of teaching as convenient to their desired lifestyle (an extrinsic motivation).
7. Social utility value, or the extent to which one values making a positive contribution to society through working with children (an altruistic motivation).

Much of the above discussed work has utilized the FIT-Choice scale to describe trends in teaching motivations. The present study aims to provide further evidence of the predictive validity of this measure by linking these factors to teacher outcomes.

1.3. Teacher burnout and career optimism

A goal of this study is to inform the larger issue of teacher attrition, and more specifically teacher attrition in the early career stage. However, due to the inherent difficulty of following individuals who have left the field, using actual attrition as an outcome can prove to be quite difficult. In lieu of the availability of actual attrition outcomes, exploring factors that may indicate impending attrition before that attrition occurs can also be a valid approach. This approach may also provide more information on the early markers of teachers' likelihood of leaving the field at a later time. In service of this, we focus on teachers' burnout and career optimism as outcomes of interest in the present study, and conceptualize these as likely indicators of later attrition or career mobility (leaving one school for another).

In career settings, burnout is generally considered the endpoint of an individual's unsuccessful coping with chronic stress (Jennett, Harris, & Mesibov, 2003). Past studies have illustrated that more burnout among teachers is related to poorer health outcomes, as well as dampened motivation and professional performance (Hakanen, Bakker, & Schaufeli, 2006; Schaufeli & Salanova, 2007). In addition, teacher burnout has been consistently related to job satisfaction (Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010; Klassen & Chiu, 2010; Skaalvik & Skaalvik, 2009; 2010), indicating that it can be considered an early indicator of teachers' likelihood of later attrition. Burnout among teacher populations has traditionally been considered a combination of three interrelated dimensions: emotional exhaustion, depersonalization (a teachers' cynical attitudes towards students or colleagues), and reduced personal accomplishment (Maslach, Jackson, & Leiter, 1996; Maslach & Jackson, 1981). However, past work has indicated that emotional exhaustion and depersonalization can be considered the most reliable indicators of burnout (Schaufeli & Salanova, 2007). As such, our measurement of burnout captures only teachers' self-reports of their emotional exhaustion and depersonalization.

Alternately, career optimism is defined as an individual's expectations of positive career outcomes, recognition of the positive aspects of their career development, and comfort in making long-term career plans (Rottinghaus, Day, & Borgen, 2005). We view teachers' career optimism as another early indicator of later attrition, and this has been supported in past research (Hong, 2010; Kelly & Northrop, 2015). For example, career optimism has been shown to directly predict individuals' career decisiveness across multiple professions (Chatterjee, Afshan, & Chhetri, 2015). Among teachers, career optimism has been found to predict goal-setting behaviors, the establishment of career plans, and likelihood of taking on leadership roles (Creed, Patton, & Bartrum, 2002; Marko & Savickas, 1998). In addition, recent studies of career optimism conducted among early career teachers have illustrated that more optimism early in the career positively relates to later career engagement (Eren, 2012; McIlveen & Perera, 2016). Career optimism and related constructs have also been found to be important to students' success: Day, Sammons, Kington, Gu, and Stobart (2006) reported that teachers' commitment to the career was related to their effectiveness in the classroom. Importantly, recent efforts in the field of vocational psychology (for example, Rottinghaus & Miller, 2014) have supported the use of personality frameworks in investigations of individuals' career progressions.

1.4. The present study

The present study addresses the following research question: How do teachers' career choice motivations reported during teacher training relate to their burnout and career optimism at the end of their first year of teaching? Based on past findings (Bruinsma & Jansen, 2010; Konig & Rothland, 2012), we anticipated that intrinsic and altruistic career choice motivations (personal ability, intrinsic career value, social utility value, prior teaching and learning experiences) would be associated with less burnout and higher career optimism, while extrinsic motivations (fallback career, personal utility value, social influence) would be associated with more burnout and lower career optimism. Since past research has identified external factors such as student characteristics and school climate as significant contributors to the teacher outcomes examined here (McLean et al., 2017; Allensworth, Ponisciak, & Mazzeo, 2009; Greene, Beszterczey, Katzenstein, Park, & Goring, 2002; Kokkinos, 2007; Roberts, Gallagher, Daro, Iruka, & Sarver, 2019), we included teacher reports of classroom student adversity (or the student-related stress a teacher experiences in the classroom) and school climate during the first teaching year as control variables in all analyses in order to most reliably capture the influences of participants' motivations above and beyond these external classroom and school elements.

2. Methods

2.1. Participants

Data for this investigation were gathered as part of a longitudinal study that followed undergraduate seniors in a university teacher training program from the last year of their training into the first year of their teaching careers. All participants were recruited from a single teacher training program at a large public university in the Southwestern United States, and participants' majors included early childhood education, elementary education, and special education. All potential risks and benefits were disclosed to participants before they provided consent to participate, and none of the research team had any prior relationships with any participants (the research team were not faculty members of the university department from which participants were recruited). The study was overseen by the university's Institutional Review Board, and investigators adhered strictly to all ethical requirements in human subject research.

Email invitations to participate were sent to all eligible students enrolled in the program in the early fall of their senior year. Two sequential cohorts were recruited: participants in the first cohort were recruited as undergraduate seniors during the beginning (fall) of the 2011–2012 academic year and became teachers in the beginning (fall) 2012–2013 academic year. Participants in the second cohort were recruited as undergraduate seniors during the beginning (fall) of the 2012–2013 year and became teachers in the beginning (fall) 2013–2014 academic year. All participants were enrolled in mentored teaching experiences during their senior year that took place in local schools near the university. Students were paired with a practicing teacher and assisted in their classroom for the majority of the academic year.

A total of 364 students in the first cohort were invited to participate in the longitudinal study and of these, 133 enrolled. In the second cohort, 337 students were invited and 132 enrolled leading to a total longitudinal study sample of 265 participants. Within this recruited sample, 88% of participants were female, 70% were Caucasian, 19% were Hispanic/Latino, 3% were Asian or Pacific Islander, 3% were African American, and 4% reported another race. Ages ranged from 21 to 50 years with a mean of 24 years, however

the majority of the sample were under 33 years of age.

Our aim was to investigate the outcomes of first-year teachers, and so the analytic sample of the present study contained only those participants from the recruited sample who reported a successful transition into a teaching position following the completion of teacher training ($N = 133$). Demographics in the analytic sample closely matched what was observed in the recruited sample, with the exceptions that the analytic sample had a higher proportion of females (95% compared to 88%) and a slightly lower percentage of African Americans (1% compared to 3%). T-tests comparing the analytic sample to the originally recruited sample showed no significant differences between groups on any of the primary study variables (described below). All analytic sample participants reported serving as the lead teacher in their classroom upon the transition to teaching.

2.2. Procedures

The two study cohorts were one year apart chronologically, but followed the same data collection schedule across the longitudinal study. Three time points are considered which capture each cohort's transition from undergraduate training into their first year of career teaching. The first time point (T1) occurred at the end (spring) of participants' senior year of training, the second (T2) occurred at the beginning (fall) of their first year of teaching, and the third (T3) occurred at the end (spring) of their first year of teaching. Participants were emailed an individual online survey link at each data collection time point and were given two weeks to complete all survey materials. Regular email reminders were sent after the initial link was distributed to encourage survey completion, and participants who completed surveys received monetary remuneration at each time point ($25 at T1, $35 at T2 and T3).

3. Measures

3.1. Independent variables

Career choice motivations. Participants' motivations for choosing teaching as a career were measured at T1 using the Motivation portion of the Factors Influencing Teaching Choice scale (FIT-Choice, Watt & Richardson, 2007). This scale includes 36 items which capture the reasons behind users' decision to pursue a career in teaching. Users rate on a scale of 1 (*not at all*) to 7 (*extremely*) how important each given item was in their career decision. Rigorous factor analysis performed by scale developers (Watt & Richardson, 2007) revealed that individual items could be reliably categorized into five lower-order factors and two higher-order factors representing a wide range of career choice motivations. The five lower-order factors captured by this scale include 1) Personal ability, which is comprised of three items including "I have the qualities of a good teacher" and "I have good teaching skills"; 2) Intrinsic career value, which is comprised of three items including "I am interested in teaching" and "I have always wanted to be a teacher"; 3) Fallback career, which is comprised of three items including "I chose teaching as a last resort" and "I was unsure of what career I wanted"; 4) Prior teaching and learning experiences, which is comprised of three items including "I have had inspirational teachers" and "I have had positive learning experiences"; and 5) Social influences, which is comprised of three items including "my family thinks I should become a teacher" and "my friends think I should become a teacher".

The two higher-order factors captured by this scale include personal utility value and social utility value. The personal utility value factor is comprised of four lower-order factors including Job Security (3 items, example "teaching will offer a steady career path"), time for family (3 items, example "teaching hours will fit with the responsibilities of having a family"), job transferability (3 items, example "a teaching job will allow me to choose where I wish to live") and bludging (interpreted as users' perceptions of the convenience of teachers' work schedules; 2 items, example "as a teacher I will have a short workday"). The social utility value factor is comprised of an additional four lower-order factors including shaping the future of children (2 items, example "teaching will allow me to influence the next generation"), enhancing social equity (2 items, example "teaching will allow me to raise the ambitions of under-privileged youth"), making a social contribution (3 items, example "teachers make a worthwhile social contribution"), and working with children (4 items, example "I like working with children"). Strong construct validity and reliability was initially established by scale developers in a large study across two cohorts of preservice teachers (Watt & Richardson, 2007). High reliability of this scale was also observed in the present study with an alpha estimate of 0.88 for the overall scale and alpha estimates ranging from 0.70 to 0.95 among the seven factors utilized. Mean scores on each factor were calculated, with higher scores indicating stronger motivation for a given factor.

3.2. Dependent variables

Burnout. Participants' burnout was measured at T3 using the 'frequency' portions of the Maslach Burnout Inventory (MBI; Maslach et al., 1996) Emotional Exhaustion and Depersonalization subscales. In the frequency subscale, users rate on a 7-point scale (0 = *never*, 7 = *every day*) the frequency with which they have recently experienced each of 22 burnout symptoms. Within the 22 items, participants' emotional exhaustion is captured by 9 items including "I feel emotionally drained from my work" and "working with people all day is really a strain for me", and depersonalization is captured by 5 items including "I've become more callous toward people since I took this job" and "I worry that this job is hardening me emotionally". Higher scores on the emotional exhaustion and depersonalization dimensions indicate more burnout. Previous studies have demonstrated high reliability and good internal consistency of this scale among teachers (Gold, 1984; Iwanicki & Schwab, 1981), and high reliability was observed for the overall scale in the present study (alpha = .85), as well as for each of the burnout components utilized (alpha = .94 for emotional exhaustion, 0.88 for depersonalization). Mean scores on each of the burnout components were calculated for use in analyses, with higher scores indicating more burnout.

Career optimism. Participants' career optimism was measured at T3 using the 11-item Career Optimism subscale of the Career Futures Inventory (Rottinghaus et al., 2005). Users are given instructions to "read each statement below and choose how much you agree or disagree with whether this describes how you feel about your teaching career right now". Statements are either positive ("I get excited when I think about my teaching career,") or negative ("it is difficult for me to set teaching career goals"). Each statement is rated from 1 (*strongly disagree*) to 5 (*strongly agree*). This scale has shown high reliability and validity in past studies (Rottinghaus et al., 2005) and high reliability was observed in the present study with a Cronbach's alpha estimate of 0.88. The scoring of negative items was reversed prior to calculating scale totals. In the present study, scores were averaged with higher scores indicating more optimism for the teaching career.

3.3. Control variables

School climate. School climate was measured at T3 using a 30-item adapted version of the Consortium on Chicago School

Research Teacher Survey (CSSR; Sartain, Stoelinga, & Brown, 2011). This adapted survey captured participants' perceptions of the relationships among school colleagues and the extent to which collaboration and innovation among teachers was supported within a school. The survey focused primarily on these aspects of school climate as they have been found to be highly salient to teachers' well-being and career-related outcomes (Allensworth et al., 2009; Burkhauser, 2017; Authors, 2019). Questions on this survey regarding the relationships among school colleagues included "to what extent to you feel respected by other teachers?", and questions targeting the support of collaboration and innovation by the school included "to what extent do the principal, teachers and staff collaborate to make this school run effectively?" Each item was rated from 1 (*not at all*) to 5 (*a great extent*). This adapted measure displayed high reliability in the present study with a Cronbach's alpha estimate of 0.96. Participants' scores on this measure were averaged, with higher scores indicating better perceived school climate.

Classroom student adversity. Participants completed a 14-item investigator-developed scale at T2 called the Classroom Environment Student Difficulties Scale, which captures the prevalence of adverse characteristics present among students in a classroom and can generally be conceptualized as representative of classroom-level stress. Participants were instructed to indicate on a 4-point scale (1 = *0 to 25%*, 2 = *26 to 50%*, 3 = *51 to 75%*, 4 = *76 to 100%*) the percentage of students in their classroom who present with tardiness, absenteeism, apathy (i.e., lack of interest in school), poor health, difficulty paying attention, lack of self-control (i.e., disruptive behavior), peer rejection, and aggression. This measure displayed high reliability in the present study with a Chronbach's alpha estimate of 0.93. Mean scores on this measure were calculated with higher scores indicating higher classroom student adversity.

Cohort belonging. A dummy variable was created to represent each participants' cohort belonging.

Grade taught. A dummy variable was created to represent the general age range taught by participants. Kindergarten through third grade was coded as '1,' fourth and fifth grade were coded as '2,' and sixth through eighth grade was coded as '3.'

3.4. Analytic approach

We first examined descriptive statistics to assess normality in the distributions of study variables, and zero-order correlations to examine bivariate associations between study variables. We then conducted a series of regression analyses using the statistical computing program MPlus (Version 7; Muthén & Muthén, 2012) to investigate study aims. We used a model building approach to inform the amount of variance in each outcome accounted for by study covariates and primary predictors. Specifically, we first tested a covariates model which included only cohort belonging, grade taught, classroom student adversity and school climate as predictors of burnout and career optimism. Next, we introduced each of the FIT-Choice factors as predictors in individual main-effects models (each factor in a separate model) along with the covariates. The approach of running separate models was taken in order to maintain the reliability of model estimates given the constraints imposed by the study's modest sample size. After running separate models, all significant FIT-Choice predictors were included in a final comprehensive model as simultaneous predictors of burnout and career optimism. In this model, any consistently non-significant covariates were trimmed in order to preserve model parsimony. This comprehensive model was considered a highly exploratory follow-up analysis which should be interpreted with caution, again due to the constraints imposed by the study's sample size. For all models, all continuous predictor variables and covariates were grand-mean centered for analysis. Pseudo r-squared estimates were calculated by subtracting the r-squared estimates given in each main-effects model from the r-squared estimate given in the covariate model to ascertain the amount of variance in each outcome accounted for by the given primary predictor above and beyond the covariates. Missing data were handled using the full information maximum likelihood estimation which preserves the full analytic sample size and maintains the integrity of parameter estimates (Enders, 2010). Standardized estimates are provided for all models.

4. Results

4.1. Descriptive statistics and bivariate correlations

See Table 1 for all descriptive information. Estimations of skewness and kurtosis fell within acceptable ranges (skewness < 2, kurtosis <7; Fidell & Tabachnick, 2003) across all study variables, suggesting no severe departures from normality. Mean levels of FIT-Choice factors revealed that participants generally rated personal ability, intrinsic career value, and prior experiences with teaching and learning as highest in their reasons for choosing teaching, followed closely by social influence and social utility. The ranges observed for personal ability and social utility suggested that most participants rated their own teaching abilities and the social contribution aspects of the teaching career as at least moderately important when reflecting on their reasons for choosing teaching, while broader ranges were observed among all other FIT-Choice factors, indicating more variability among participants in these motivations for teaching. Of all seven factors, participants ranked fallback career as the least influential in choosing teaching. Participants reported moderate levels of burnout and career optimism at T3, and the observed ranges and standard deviations suggested adequate variability among these variables. Participants tended to report higher emotional exhaustion than depersonalization. Regarding the covariates, participants reported moderate levels of classroom student adversity and school climate during the teaching year.

Correlation analysis (see Table 2) revealed moderate to large positive associations among most FIT-Choice factors with the exception of fallback career which showed moderately-sized negative correlations with personal ability, intrinsic career value, and social utility value. Regarding relations among FIT-Choice factors and the outcomes of interest, a moderately-sized negative

Table 1
Descriptive statistics for study variables.

	N	Min	Max	Mean	SD	Skewness	Kurtosis
T1 Personal Ability	113	4	8	6.57	1.07	.10	−1.03
T1 Intrinsic Value	113	2	8	6.71	1.27	-.86	.78
T1 Fallback Career	113	1	6	1.99	1.29	1.88	3.2
T1 Prior Experiences	113	1	7	6.13	1.12	−1.96	5.2
T1 Social Influence	113	1	7	5.82	1.43	−1.55	2.12
T1 Personal Utility	113	1	5.91	3.66	1.04	-.37	-.15
T1 Social Utility	113	3.17	6.42	5.66	.80	−1.13	.56
T3 Burnout − E.E.	75	1	7	4.49	1.56	-.33	-.65
T3 Burnout − Dep.	77	1	7	2.13	1.36	1.54	2.3
T3 Career Optimism	82	1	5	3.54	.76	-.22	.93
T3 School Climate	82	1	4.37	3.30	.62	-.27	.56
T2 Class Adversity	92	1	3.64	1.53	.58	1.48	1.89

Note. Mean scores presented.
Note. T1 = Time 1, T2 = Time 2, T3 = Time 2. E.E. = Emotional Exhaustion, Dep. = Depersonalization, P.A. = Personal Accomplishment.
Note. Depressive and Anxious symptoms were combined in analyses to represent more general mental health at T1.

Table 2
Correlations among study variables.

	1	2	3	4	5	6	7	8	9	10	11	12
1. T1 Personal Ability	1											
2. T1 Intrinsic Value	.58**	1										
3. T1 Fallback Career	-.22*	-.46**	1									
4. T1 Prior Experiences	.34**	.35**	-.18	1								
5. T1 Social Influence	.33**	.21*	-.01	.52**	1							
6. T1 Personal Utility	.30**	.17	.07	.25**	.36**	1						
7. T1 Social Utility	.39**	.37**	-.25**	.52**	.34**	.14	1					
8. T3 Burnout – E.E.	-.28*	-.16	.07	-.01	-.16	-.26*	-.14	1				
9. T3 Burnout – Dep.	-.15	-.31*	.38**	-.17	-.11	-.11	-.28*	.52**	1			
10. T3 Career Optimism	.37**	.32**	-.18	.09	.25*	.12	.19	-.58**	-.39**	1		
11. T3 School Climate	.15	.13	-.15	.19	.19	.13	.18	-.37**	-.21	.53**	1	
12. T2 Class Adversity	.07	-.07	.11	.08	.27*	.26*	-.02	-.43**	-.30*	.33**	.38**	1

Note. T1 = Time 1, T2 = Time 2, T3 = Time 2. E.E. = Emotional Exhaustion, Dep. = Depersonalization.
* indicates $p < .05$.
** indicates $p < .01$.

correlation was detected between personal ability and emotional exhaustion, as well as between intrinsic career value and depersonalization. In addition, a moderately-sized positive correlation was detected between fallback career and depersonalization. Lastly, personal ability and intrinsic career value both showed moderately-sized positive associations with career optimism. Regarding the included covariates, school climate showed a moderately sized negative correlation with emotional exhaustion as well as a large positive correlation with career optimism, and classroom student adversity showed moderate to large negative associations with both burnout components and a moderately sized positive correlation with career optimism. Classroom student adversity also showed small positive associations with social influence and personal utility.

5. Primary analyses

5.1. Covariate model

Cohort belonging, grade taught, T3 school climate and T2 classroom student adversity were modeled as predictors of emotional exhaustion, depersonalization and career optimism (see Table 3). This model revealed significant effects of both school climate and classroom student adversity on T3 emotional exhaustion ($\beta = -0.30$, $p < .01$ for school climate, $\beta = 0.39$, $p = .02$ for classroom student adversity), and on T3 career optimism ($\beta = 0.47$, $p < .01$ for school climate, $\beta = -0.36$, $p < .01$ for classroom student adversity). School climate and classroom student adversity did not show any significant relations to T3 depersonalization, and cohort belonging and grade taught did not show any significant relations to any of the outcomes. R-squared estimates for the covariate model were 0.28 for T3 emotional exhaustion (a medium-sized effect), 0.11 for T3 depersonalization (a small effect), and 0.39 for T3 career optimism (a medium-sized effect), indicating that the covariates accounted for 28%, 11%, and 39% of the variance in these outcomes, respectively.

5.2. Main effects models

Personal ability. See Table 3 for all individual model estimates. The model with the personal ability factor included as a predictor along with the covariates revealed a significant effect of personal ability motivation on T3 emotional exhaustion ($\beta = -0.23$, $p = .04$) and T3 career optimism ($\beta = 0.28$, $p < .01$) such that participants who reported higher personal ability motivation experienced less emotional exhaustion and greater career optimism at T3. R-squared estimates for this model were 0.30 for emotional exhaustion, 0.12 for depersonalization, and 0.47 for career optimism. Examining the change in r-squared estimates compared to the covariates model revealed effect sizes of 0.02 for emotional exhaustion and 0.08 for career optimism (both small effects), suggesting that personal ability motivation explained an additional 2% and 8% of the variance in participants' emotional exhaustion and career optimism, respectively, above the variance explained by the covariates.

Intrinsic career value. The model with the intrinsic career value factor included as a predictor along with the covariates revealed a significant effect of intrinsic career value motivation on T3 depersonalization ($\beta = -0.32$, $p = .03$) and T3 career optimism ($\beta = 0.33$, $p < .01$), such that participants who reported higher intrinsic career value motivation experienced less depersonalization and greater career optimism at T3. R-squared estimates for this model were 0.27 for emotional exhaustion, 0.21 for depersonalization, and 0.52 for career optimism. Examining the change in r-squared estimates compared to the covariates model revealed effect sizes of 0.10 for emotional exhaustion and 0.13 for career optimism (both small effects), suggesting that personal ability motivation explained an additional 10% and 13% of the variance in participants' emotional exhaustion and career optimism, respectively, above the variance explained by the covariates.

Fallback career. The model with the fallback career factor included as a predictor along with the covariates revealed a significant effect of fallback career motivation on T3 depersonalization ($\beta = 0.28$, $p < .01$) such that participants who reported higher fallback career motivation at T1 experienced more depersonalization at T3. R-squared estimates for this model were 0.27 for emotional exhaustion, 0.19 for depersonalization, and 0.40 for career optimism. Examining the change in r-squared estimates compared to the covariates model revealed an effect size of 0.08 for depersonalization (a small effect), suggesting that fallback career motivation explained an additional 8% of the variance in this outcome above the variance explained by the covariates.

Personal utility value. The model with the personal utility value factor included as a predictor along with the covariates revealed a marginally significant effect of personal utility value motivation on depersonalization ($\beta = 0.24$, $p = .06$) such that participants who reported higher personal utility value motivation at T1 experienced more depersonalization at T3. R-squared estimates for this model were 0.28 for emotional exhaustion, 0.18 for depersonalization, and 0.39 for career optimism. Examining the change in r-squared estimates compared to the covariates model revealed an effect size of 0.07 for depersonalization (a small effect), suggesting that personal utility value explained an additional 7% of the variance in this outcome above the variance explained by the covariates.

Remaining FIT-Choice factors. The remaining models with the

Table 3
Covariates model and individual FIT-Choice model estimates.

	Covariate Model		Personal Ability		Intrinsic Career Value		Fallback Career	
	Std. Coef. (SE)	P-Value	Std. Coef. (SE)	P-Value	Std. Coef. (SE)	P-Value	Std. Coef. (SE)	P-Value
Emotional Exhaustion								
FIT-Choice Factor	–	–	-.23 (.11)	.04	-.20 (.13)	.14	.02 (.10)	.88
Cohort	.04 (.10)	.71	.07 (.10)	.49	.06 (.10)	.54	.03 (.10)	.74
Grade	-.08 (.12)	.49	-.12 (.12)	.32	-.11 (.13)	.39	-.07 (.12)	.56
School Climate	-.30 (.11)	<.01	-.26 (.11)	.01	-.29 (.10)	<.01	-.30 (.11)	<.01
Class Adversity	.39 (.16)	.02	.34 (.17)	.05	.33 (.17)	.05	.39 (.17)	.02
	$R^2 = .28$		$R^2 = .30$		$R^2 = .27$		$R^2 = .27$	
Depersonalization								
FIT-Choice Factor	–	–	-.07 (.13)	.61	-.32 (.14)	.03	.28 (.10)	<.01
Cohort	.09 (.11)	.42	.10 (.11)	.38	.12 (.10)	.25	.08 (.11)	.44
Grade	.12 (.14)	.41	.11 (.15)	.45	.02 (.15)	.90	.10 (.13)	.46
School Climate	-.16 (.11)	.16	-.15 (.11)	.19	-.12 (.11)	.28	-.12 (.11)	.25
Class Adversity	.26 (.17)	.12	.25 (.17)	.13	.24 (.16)	.12	.24 (.15)	.12
	$R^2 = .11$		$R^2 = .12$		$R^2 = .21$		$R^2 = .19$	
Career Optimism								
FIT-Choice Factor	–	–	.28 (.09)	<.01	.33 (.10)	<.01	-.11 (.09)	.20
Cohort	.10 (.09)	.26	.07 (.09)	.43	.08 (.08)	.34	.11 (.09)	.23
Grade	-.01 (.10)	.93	.07 (.10)	.49	.11 (.10)	.29	.02 (.10)	.85
School Climate	.47 (.09)	<.01	.41 (.09)	<.01	.41 (.09)	<.01	.45 (.09)	<.01
Class Adversity	-.36 (.13)	<.01	-.38 (.12)	<.01	-.41 (.11)	<.01	-.36 (.13)	<.01
	$R^2 = .39$		$R^2 = .47$		$R^2 = .52$		$R^2 = .40$	
	Prior Experiences		Social Influence		Personal Utility		Social Utility	
	Std. Coef. (SE)	P-Value	Std. Coef. (SE)	P-Value	Std. Coef. (SE)	P-Value	Std. Coef. (SE)	P-Value
Emotional Exhaustion								
FIT-Choice Factor	.20 (.13)	.12	-.04 (.12)	.72	-.15 (.12)	.20	-.01 (.13)	.99
Cohort	.05 (.10)	.60	.04 (.10)	.70	.04 (.10)	.69	.04 (.10)	.71
Grade	-.04 (.11)	.70	-.07 (.12)	.57	-.08 (.12)	.52	-.09 (.12)	.46
School Climate	-.30 (.11)	<.01	-.29 (.11)	<.01	-.29 (.11)	<.01	-.28 (.11)	.01
Class Adversity	.51 (.14)	<.01	.40 (.17)	.02	.36 (.17)	.04	.43 (.16)	<.01
	$R^2 = .38$		$R^2 = 28$		$R^2 = .28$		$R^2 = .31$	
Depersonalization								
FIT-Choice Factor	-.01 (.16)	.95	.01 (.14)	.92	.24 (.13)	.06	-.17 (.15)	.24
Cohort	.09 (.11)	.42	.09 (.11)	.41	.08 (.11)	.46	.09 (.11)	.42
Grade	.12 (.15)	.40	.13 (.14)	.38	.10 (.14)	.46	.06 (.15)	.68
School Climate	-.15 (.11)	.19	-.15 (.11)	.17	-.18 (.11)	.10	-.12 (.11)	.26
Class Adversity	.29 (.17)	.09	.27 (.17)	.11	.32 (.16)	.05	.25 (.16)	.12
	$R^2 = .13$		$R^2 = .12$		$R^2 = .18$		$R^2 = .15$	
Career Optimism								
FIT-Choice Factor	-.06 (.11)	.59	.13 (.10)	.19	-.03 (.10)	.75	.07 (.11)	.52
Cohort	.09 (.09)	.32	.10 (.09)	.26	.11 (.09)	.25	.10 (.09)	.28
Grade	-.02 (.10)	.81	.01 (.10)	.96	.01 (.10)	.98	.02 (.11)	.89
School Climate	.48 (.09)	<.01	.44 (.09)	<.01	.47 (.09)	<.01	.46 (.09)	<.01
Class Adversity	-.33 (.14)	.02	-.32 (.15)	.03	-.36 (.14)	<.01	-.31 (.15)	.03
	$R^2 = .37$		$R^2 = .39$		$R^2 = .39$		$R^2 = .31$	

prior teaching and learning experiences, social influence, and social utility value factors included (separately) as predictors along with the covariates revealed no significant effects of participants' T1 career choice motivations on any of the outcomes.

5.3. Comprehensive model

The comprehensive model with the personal ability, intrinsic career value, fallback career, and personal utility value factors included as co-predictors along with the covariates classroom adversity and school climate (see Table 4; cohort and grade taught were trimmed to preserve parsimony) revealed a significant effect of personal ability motivation on career optimism ($\beta = 0.23$, $p = .04$), such that participants who reported higher personal ability motivation experienced greater career optimism at T3. No significant effects of the other included FIT-Choice factors were detected in this model. R-squared estimates for this model were 0.29 for emotional exhaustion, 0.27 for depersonalization, and 0.52 for career optimism. Examining the change in r-squared estimates compared to the covariates model revealed an effect size of 0.13 for career optimism (a small effect), suggesting that the inclusion of the four previously significant FIT-Choice factors explained an additional 13% of the variance in this outcome above the variance explained by the covariates compared to the 8% explained in this outcome by the model above which included just the personal ability factor.

6. Discussion

The present study sought to inform the issue of teacher attrition in the early career stage by investigating how first-year teachers' initial motivations for choosing a teaching career related to their later burnout and career optimism. Specifically, we examined how seven motivation factors measured during participants' preservice training related to their burnout and career optimism outcomes at the end of their first teaching year. We predicted that intrinsic and altruistic motivations (personal ability, intrinsic career value, social utility value, prior teaching and learning experiences) would be associated with lower burnout and higher career optimism, and that extrinsic motivations (fallback career, personal utility value,

Table 4
Comprehensive model estimates.

	Std. Coef. (SE)	P-Value
Emotional Exhaustion		
FIT Personal Ability	-.13 (.14)	.36
FIT Intrinsic Value	-.05 (.17)	.77
FIT Fallback Career	-.03 (.11)	.78
FIT Personal Utility	-.11 (.13)	.39
Class Adversity	.35 (.16)	.03
School Climate	-.28 (.10)	<.01
	$R^2 = .29$	
Depersonalization		
FIT Personal Ability	-.03 (.15)	.84
FIT Intrinsic Value	-.20 (.18)	.28
FIT Fallback Career	.18 (.12)	.14
FIT Personal Utility	.22 (.13)	.11
Class Adversity	.30 (.14)	.03
School Climate	-.14 (.10)	.18
	$R^2 = .27$	
Career Optimism		
FIT Personal Ability	.23 (.09)	.04
FIT Intrinsic Value	.16 (.14)	.23
FIT Fallback Career	.02 (.10)	.86
FIT Personal Utility	-.13 (.10)	.20
Class Adversity	-.43 (.11)	<.01
School Climate	.40 (.09)	<.01
	$R^2 = .52$	

social influence) would be associated with more burnout and lower career optimism.

Results generally aligned with our hypotheses: personal ability and intrinsic career value, both intrinsic career motivations, related negatively to burnout and positively to career optimism when modeled as separate predictors. Personal ability remained a significant predictor of career optimism in the comprehensive model. As well, fallback career and personal utility value, both extrinsic career motivations, were related positively to burnout, specifically depersonalization (although this relation was marginally significant for personal utility value) when modeled as separate predictors. Contrary to hypotheses, however, no significant effects were detected for social utility value and prior teaching and learning experiences, career motivations that are more altruistic. All effects detected were significant after controlling for the school climate and classroom stress participants experienced during their first year of teaching, factors that have consistently been shown to also be important in contributing to teacher outcomes (Allensworth et al., 2009; Greene et al., 2002; Kokkinos, 2007; Roberts et al., 2019). Following, we offer some more immediate interpretations of these findings as well as a discussion of how these results contribute more broadly to the field.

6.1. Interpretations of findings

Participants' positive appraisals of their own teaching abilities (personal ability) and their genuine interest in and excitement about teaching (intrinsic career value) were found to relate to less burnout and more optimism for the teaching career in individual models. This aligns well with past findings that have illustrated a potential for more positive outcomes when preservice teachers rate intrinsic motivations as highly important to their career choices (Eren & Tezel, 2010; Watt & Richardson, 2008). As well, personal ability motivation remained a significant predictor of career optimism even in the more complex comprehensive model, suggesting that this particular career motivation might be an especially reliable indicator of later teacher outcomes (although we also assert that results of the comprehensive model are highly exploratory and should be interpreted with caution). In contrast, when participants reported viewing teaching as a second choice or backup (fallback career), or when they reported the logistical elements of the teaching career (personal utility value) as important in their decisions to teach, they experienced more depersonalization. Together, these findings provide evidence of the potential benefits of intrinsic over extrinsic career motivations when it comes to early career teachers' well-being and developing career attitudes.

In addition, the fact that intrinsic motivations were related to both burnout and career optimism while extrinsic motivations related only to depersonalization might suggest that individuals' intrinsic motivations for teaching may have wider reaching and more immediate implications for their career outcomes compared to extrinsic motivations. Along this same line, it could also be that the negative effects of extrinsic motivations on teachers' career optimism may take longer to set in, and are perhaps precluded by depersonalization. More specifically, participants who entered the career unenthusiastic about teaching or expecting teaching to be logistically rewarding may have used strategies such as distancing themselves and becoming more cynical (the main components of depersonalization) in an attempt to cope with more negative initial teaching experiences. It could also be that those teachers who reported higher fallback career and personal utility value motivations were inherently more likely to display distance and cynicism in general.

The contrasting patterns observed between intrinsic and extrinsic motivations for teaching are in line with foundational work in the area of human motivation in which intrinsic motivation is described as a positive force behind performance, persistence, and well-being (Ryan & Deci, 2000), whereas extrinsic motivation, when paired with low autonomy and self-regulatory ability, has been related to lower interest, value, and effort (Ryan & Connell, 1989). Importantly though, this line of work also notes that intrinsic and extrinsic motivations are not mutually exclusive, often exist in tandem, and that extrinsic motivation under conditions of high autonomy and self-regulation can actually lead to positive effort and performance (for more information see works describing Self Determination Theory; Deci & Ryan, 2008). As such, we present these findings as preliminary in nature and assert that future work would benefit from investigating the co-occurrence of, and interactions among, intrinsic and extrinsic career choice motivations among teachers.

The fact that no results were detected for altruistic motivations was surprising given that making contributions to society through working with children and adolescents has consistently been rated in past studies as highly important to most individuals considering a teaching career (Kyriacou & Coulthard, 2000; Manuel & Hughes, 2006), and this trend was mirrored in the present study. When considering this lack of effects along with the significant effects of intrinsic motivations (also typically rated as highly important), we offer that while both intrinsic and altruistic motivations may be highly salient to prospective teachers' career decisions, individuals' intrinsic motivations, and more specifically their evaluations of their own interest in/ability to teach, may be more accurate indicators of their later experiences and, as such, more reliable sources of self-reflection when these individuals are deciding whether to pursue a teaching career. This aligns well with the body of work illustrating the positive effects of high self-efficacy, a trait that is very similar to personal ability appraisals, among teachers across multiple outcomes (Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007; 2010). In addition, results pertaining to the extrinsic motivations examined can serve as a caution to individuals who are considering becoming a teacher, but who view teaching as a fallback career or who are expecting teaching to afford them a logistically convenient lifestyle. These individuals may be at a higher risk for negative experiences should they pursue a career

in teaching. This finding aligns well with very recent work (Gaias, Jimenez, Abry, Granger & Taylor, 2018) wherein kindergarten teachers' intrinsic motivations were found to buffer against the negative effects of misalignment (i.e., what teachers wanted to focus on during instruction versus what they actually did focus on) on job satisfaction, whereas no such finding emerged for extrinsic motivations.

These results offer an important addition to the field in that the majority of existing work regarding teachers' career choice motivations has focused on characterizing more broadly why teachers become teachers. Thus, our investigation of how these motivations relate to later teacher outcomes represents a step forward in defining how individuals' internal characteristics might impact their experiences and outcomes in the early career stage. As well, the results of the present study add additional evidence of the predictive validity of the FIT-Choice scale in its relations to teacher outcomes. Our measurement of participants' career choice motivations before they become teachers and our linking of these factors to participants' outcomes after they transitioned into their careers is an important elaboration on past studies using the FIT-Choice which have primarily taken place only in the preservice stage and have relied on participants predictions of future outcomes.

6.2. Limitations

There are aspects of our study that should be carefully considered when interpreting results as they may limit our ability to generalize findings to larger populations of preservice and early career teachers. First, the sample size of the present study was modest at 133 participants, and so results may have been underestimated or undetected (type II error). This limitation applies to all models, but most especially to the final comprehensive model. Therefore, these findings should be considered as highly exploratory and should be interpreted with caution. While it is encouraging that significant findings existed even in light of this limitation, future work would benefit from utilizing larger sample sizes.

Second, participants were not particularly diverse in gender, age, or race, and were recruited from a single university teacher training program. The patterns detected here might be different among groups with more diverse characteristics and from different geographic locations or programs, and addressing this should be a goal of future work in this area. Third, it is relatively commonplace for the last years of teacher training programs in the U.S. to include mentored teaching experiences, most of which take place in a public school classroom and some of which entail full-time participation on the part of the trainee (and this was the case at the training program in the present study). As such, while participants had not yet transitioned into formal teaching careers, they had spent their senior year gaining firsthand classroom experience and this may have impacted their reports of career motivations. For example, a preservice teacher with no classroom experience may rate the personal utility value factor differently than would a preservice teacher who is in the midst of a teaching practicum and has observed the lifestyle of their mentor teacher. Future investigations would benefit from capturing preservice teachers' career motivations during an earlier point in their training, before they have had any classroom experience.

Lastly, all data utilized in this study were self-reported by participants, and so relations among variables may be partially attributable to additional personal characteristics or external factors not investigated here. Future efforts could elaborate on what was found here by investigating the potential roles of additional teacher characteristics (for example resilience, temperament, emotional regulation) on their burnout, career optimism, and other related outcomes. In addition, future studies could benefit from utilizing non self-report outcomes such as clinical diagnosis of mental health conditions and/or actual attrition as more direct indicators of teacher well-being and career longevity. Due to these limitations, we offer that the relations among teachers' career choice motivations and their burnout and career optimism revealed in this study represent a preliminary, exploratory step towards fully understanding how teachers' initial career choice motivations impact their outcomes in the early career stage.

6.3. Broader implications

This study adds to a growing body of research that attempts to describe how individuals' personal characteristics might contribute to their professional performance. In the field of vocational psychology, studies have linked personal characteristics including motives, goals, and life experiences to professional outcomes such as career choice, career development, job satisfaction, and job performance across a range of careers (Walsh & Eggerth, 2005). These efforts have illustrated that there is clear value in applying both trait models and social cognitive approaches into a more holistic view of personality that can guide vocational psychology research and practice (Rottinghaus & Miller, 2014). We applied this framework to the profession of teaching and in doing so have provided some information about how particular characteristics, in this case career motivations, might influence teachers' career-related outcomes. Following is a discussion of the broader implications of these findings for the field of education.

First we consider how results might inform systems of teacher training and induction. Findings have the potential to enrich teacher training curricula as well as inform best practices in recruiting undergraduate students into teacher training programs. In particular, teacher training programs can incorporate exercises guided by these findings in which teacher trainees self-reflect on their career motivations in the interest of better preparing for a successful career transition. In addition, training program mentors (guidance counselors, professors, or practicum supervisors) can use this information to better identify how trainees' motivations might help or hinder their future success as a teacher, and can then provide more informed guidance to trainees on selection of coursework or practicum experiences. For example, if a guidance counselor identifies a trainee who is expecting the logistics of teaching (personal utility value) to be a positive affordance in their career, they may recommend that student enroll in a full time vs. part time practicum experience so that they can get a more realistic impression of teachers' daily schedules and demands. As well, if a practicum supervisor notices in conversations with a student that they perceive their own teaching skills and abilities as lacking (personal ability), they can recommend skill-based courses to that student and/or take steps to pair that trainee with a mentor teacher in a practicum whom they know will be supportive of skill building in the classroom setting.

In addition, schools and school districts can use the information provided by this and related studies to inform how they select and induct new teachers. In the search and hiring process, school administrators could include questions about career choice motivations in their candidate interviews in order to identify teacher candidates who are more likely to stay in the field. For example, during structured interviews school administrators could use guided questioning to attempt to determine the extent to which a candidate is highly intrinsically motivated or, alternately, driven by motivations which may not serve them as well in their careers. For teachers who are already practicing, schools can use the information provided here to inform how they prioritize professional

development opportunities. Similar to the above scenario presented for teacher training, a school could identify teachers who are low in personal ability motivation and could then provide targeted professional development to those individuals that focuses on building teaching skills.

Lastly, while student outcomes were not directly considered in the present study, a rich body of work highlights the importance of the teacher outcomes examined here (most especially burnout) as primary contributors to student experiences. For example, burnout in teachers was recently found to relate negatively to students' autonomous motivation (Shen et al., 2015), and has also been found to explain variations in students' cortisol levels, a common biomarker of stress, during class time (Oberle & Schonert-Reichl, 2016). As such, it stands to reason that the students of those teachers in the present study who reported more burnout and less career optimism may have had less optimal experiences in the classroom, although that needs to be confirmed empirically. As relates to the present study, we contend that the identification of teacher characteristics that may put teachers at higher risk of burnout and low career optimism could not only be used to improve the outcomes of teachers themselves, but could be used to bolster the experiences of students through the identification of teachers who may be at risk of becoming less effective.

7. Future directions

This paper represents progress in understanding how teachers' personal characteristics might influence their success and longevity in the field, however more work is needed to fully understand the myriad factors impacting teachers' experiences and outcomes. Future studies should consider what other internal (e.g. resilience, coping strategies, temperament) and external (e.g. school support, social support, working conditions, policies) factors might serve to protect against negative teacher outcomes, and how these relations might operate differently across different career stages. Teachers' personal characteristics should also be investigated in tandem with external influences in order to determine the relative influence of internal vs. external factors in teacher outcomes. By taking the research in these and similar directions, the field can move towards a more holistic understanding of the lives and identities of teachers and what supports might be the most effective in ensuring all teachers are successful in their roles.

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