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Research paper

Why do I teach? A mixed-methods study of in-service teachers' motivations, autonomy-supportive instruction, and emotions

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HIGHLIGHTS

- Qualitative and mixed methods reveal complexities in teachers' motivations to teach.
- Teachers expressed two types of intrinsic value: teaching and a content area.
- Teachers who endorsed intrinsic value for a content area fostered more understanding.
- Teachers high in social utility value report more enjoyment, less anger and anxiety.
- Teachers' perceived teaching ability predicted most instruction and emotion outcomes.

ARTICLE INFO

ABSTRACT

The overreliance on quantitative methods in teacher motivation studies has limited our understanding of the content and function of teachers' motivations. Through teacher interviews (n = 16; 100% White; 63% female; 2−21 years of experience) and surveys (n = 124; 96% White; 57% female; 0.5−40 years of experience), this study used mixed-methods approaches to explore what motivates teachers to teach and how those motivations relate to teachers' autonomy-supportive instruction and teaching emotions. Findings revealed that teachers who intrinsically valued their content area fostered more understanding, linked social utility value to positive emotions, and associated their teaching ability with favorable instructional and emotional outcomes.

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Compared to other careers in the United States, teachers are often underpaid, have stressful working conditions, and receive little social recognition for their work (Organization for Economic Cooperation and Development [OECD], 2014; Ramsay, 2000; Watt & Richardson, 2008). Why, then, do people choose such a thankless, difficult career? Indubitably, teachers have distinct reasons for starting and staying in the teaching profession (e.g., the desire to make a difference in students' lives, confidence in their ability to teach, or finding the profession personally rewarding; Watt & Richardson, 2007, 2014), and researchers have begun exploring the relation between these beliefs and teachers' effectiveness in the classroom (Watt & Richardson, 2014).

Indeed, teachers' motivations have been shown to have consequences for teacher effectiveness. Researchers have found that teachers' confidence in their abilities to teach (Thoonen et al., 2011), interest in teaching (Taylor et al., 2016), and desire to build relationships with students (Butler & Shibaz, 2014) influence which instructional strategies teachers use. Furthermore, teachers who are more confident in their teaching abilities have higher student achievement and more positive performance evaluations than their less confident peers (Klassen & Tze, 2014). Due to the connections between teachers' motivations and effectiveness, various motivators may serve as conduits for strengthening teacher effectiveness; however, we must first develop a stronger understanding of what motivates teachers and the implications of these motivations for classroom quality and teacher well-being.

To date, researchers have primarily used quantitative methods

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to study teacher motivation. Although quantitative methods can provide empirical reliability, validity, and replicability, these methods lack descriptive clarity and fine-grained details that can emerge through qualitative methods (Onwuegbuzie & Leech, 2005). Thus, researchers' overreliance on quantitative methods signals an important gap in the study of teacher motivation. More qualitative and mixed-methods research is needed to better understand the complexities of how teachers define and interpret their motivations for teaching (Han & Yin, 2016) and how teachers' motivations play a role in their classroom behavior and emotions. In this mixed-methods study, we address methodological gaps in the extant literature by exploring (a) how in-service teachers make sense of their motivations to teach and (b) the links between teacher motivations and teachers' autonomy-supportive instruction and teaching emotions.

1. FIT-choice theory

One prominent approach to understanding teachers' motivations to teach is the factors influencing teaching as a career choice (FIT-Choice) theory (Watt & Richardson, 2007; see Fig. 1). FIT-Choice is an integrated model of teaching motivations grounded in Eccles (Parsons) et al. (1983) expectancy-value theory. FIT-Choice outlines how two factors, motivational beliefs and socialization experiences, drive teachers' intentions to pursue teaching, instructional behavior, and psychological outcomes (Watt & Richardson, 2007, 2014). The FIT-Choice theory was developed to explore pre-service teachers' motivations to teach (Watt & Richardson, 2007); however, it has since been validated in samples of in-service teachers (Watt et al., 2017).

Three primary motivational beliefs outlined by the FIT Choice theory include teachers' *perceived teaching abilities* (i.e., perceptions of their abilities to teach effectively), *perceptions of teaching as a fallback career* (i.e., teaching due to the inability to pursue other more desirable careers), and three types of subjective task values, which refer to the ways teaching may be valuable to teachers (Watt & Richardson, 2007). These three tasks values are comprised of

intrinsic value (i.e., an interest in teaching), *personal utility value* (i.e., a sense of job security, time for family, and transferrable skills), and *social utility value* (i.e., a desire to make a meaningful contribution to the community by working with youth, shaping youth's future, and enhancing social equity).

Research on FIT-Choice beliefs has indicated that pre-service teachers with higher perceived teaching abilities, intrinsic value, and social utility value report greater satisfaction with their decision to teach (Watt & Richardson, 2007) and are more certain they will continue teaching (Watt & Richardson, 2007, 2014). In contrast, pre-service teachers who perceive teaching as a fallback career report less satisfaction with their decision to teach (Watt & Richardson, 2007) and are less sure they will continue teaching (Watt & Richardson, 2007, 2014). Teachers' personal utility value has shown weak to no association with commitment (Fokkens-Bruinsma & Canrinus, 2012a), persistence, leadership, and satisfaction outcomes (Watt & Richardson, 2007, 2014).

Within the FIT-choice theory, socialization experiences influence teachers' desire to teach through their *previous teaching and learning experiences* (i.e., their own past experiences with teachers) and *social influences* (i.e., messages from family, friends, or colleagues). In line with FIT-Choice theory, pre-service teachers motivated by previous teaching and learning experiences have expressed more satisfaction with their decision to teach and certainty they will continue teaching than those not motivated by prior teaching and learning experiences (Watt & Richardson, 2007). Those pre-service teachers who were more strongly motivated by social influences, however, showed no differences from teachers less motivated by social influences in their certainty they will continue teaching and their satisfaction with their decision to teach (Watt & Richardson, 2007, 2014).

Similar to broader trends in the teacher motivation literature, predominantly quantitative approaches have been used to study the components (e.g., Lin et al., 2012; Watt & Richardson, 2007) and implications (e.g., Fokkens-Bruinsma & Canrinus, 2012a; Watt & Richardson, 2007, 2014) of FIT-Choice teacher motivations (i.e., motivational beliefs and socialization experiences). Consequently,
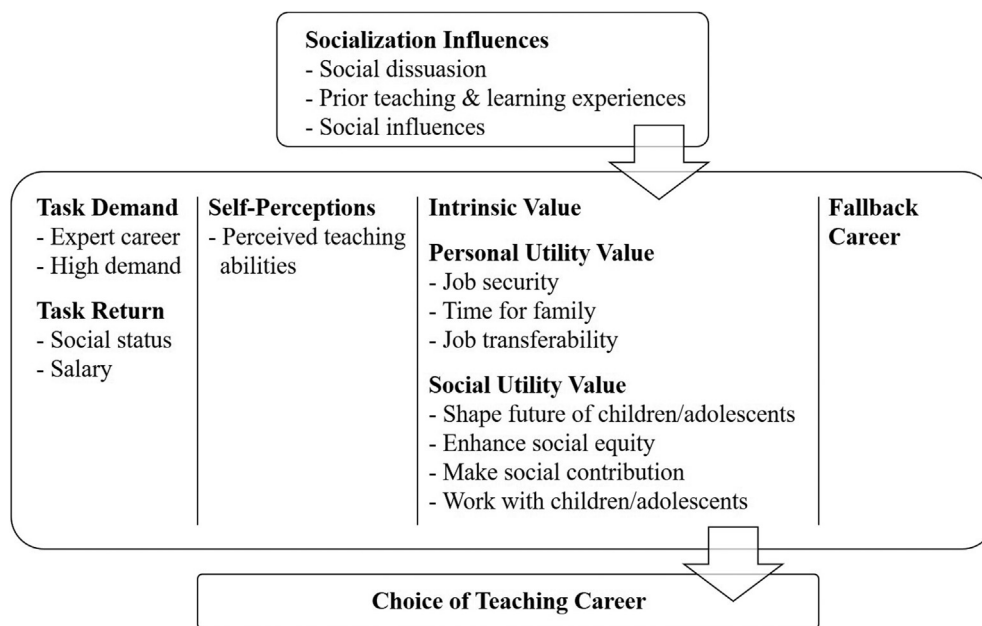

Fig. 1. The FIT-Choice model adapted from Watt and Richardson (2012). This figure demonstrates the link between teachers' motivations and the choice of a teaching career hypothesized in early FIT-Choice work. Subsequent work has also linked teachers' motivations to instructional effectiveness and well-being outcomes (e.g., Watt & Richardson, 2014).

we expand upon the existing literature by exploring in-service teachers' motivations to teach via a mixed-methods approach. This mixed-methods design allows us to explore how teachers define and make sense of their motivations as well as understand how these motivations relate to teachers' practice (Han & Yin, 2016).

1.1. What are the implications of teachers' motivations for teaching?

In addition to understanding teachers' interpretations of their own motivations to teach, we explored how teachers' motivations related to their autonomy-supportive instruction and the emotions they experience when teaching (i.e., teaching emotions). Although the research surrounding these topics is scant, evidence indicates that autonomy-supportive instruction and teaching emotions are critical for creating supportive classroom learning environments (Carmichael et al., 2017; León et al., 2014).

1.1.1. Autonomy-supportive instruction

Autonomy-supportive instruction consists of teachers' strategies and activities that address students' psychological need for autonomy (Wang, Degol, et al., 2020). Although there are numerous ways to engage in autonomy-supportive instruction, common examples include teachers providing students with learning activities related to their own goals, offering students choices as to how and why they engage with learning, and/or allowing students to express negative emotions and criticism about the learning context (Jang et al., 2010; (Wang, Hofkens, et al., 2020)). Teachers' use of these practices are critical determinants of student outcomes, including mental health (Yu et al., 2016), academic engagement (Wang & Holcombe, 2010), and performance (León et al., 2014).

According to extant literature, teachers with strong perceived teaching abilities and intrinsic value are more likely to use autonomy-supportive instruction (Katz & Shahar, 2015). Likewise, Cheon et al. (2018) found that in-service teachers who have strong perceptions of their abilities use more autonomy-supportive instruction. Furthermore, findings from multiple studies suggest that in-service teachers who report strong intrinsic value for teaching also use more autonomy-supportive instruction (e.g., Katz & Shahar, 2015; Pelletier et al., 2002; Roth et al., 2007).

Researchers have not yet explored if other FIT-Choice teacher motivations (i.e., social utility value, personal utility value, fallback career, prior teaching and learning experiences, and social influences) relate to in-service teachers' autonomy-supportive instruction. However, Watt and Richardson's (2014) longitudinal study did find that pre-service teachers with strong perceived teaching abilities, intrinsic value, and social utility value for teaching demonstrated more "positive" teaching styles (e.g., positive expectations, relationships, and learning structures) once they entered their own classrooms. Conversely, they found teachers more strongly motivated by social influences relied more on "negative" teaching styles (e.g., sarcasm and shouting) as early career teachers. It is unclear, though, which of Watt and Richardson's (2014) teaching practices align with the current study's understanding of autonomy-supportive instruction. Given the conceptual overlap between Watt and Richardson's "positive" teaching styles and our autonomy-supportive instruction, it is likely that teachers' perceived teaching abilities, intrinsic value, and social utility value positively predict their autonomy-supportive instruction. We explored these possibilities in the present study, while also considering how other FIT-Choice motivations related to autonomy-supportive instruction.

1.1.2. Teaching emotions

Teaching emotions refer to teachers' positive and negative affective experiences (e.g., enjoyment, anger, and anxiety) as they provide instruction and interact with students (Frenzel, 2014). Researchers have found that teaching emotions influence classroom environments, which in turn can determine student outcomes (e.g., interest in a content area; Carmichael et al., 2017). Also, teaching motivations, specifically ability and value beliefs, may influence teaching emotions. In fact, researchers have found that teachers who report a strong sense of efficacy for teaching are more enthusiastic (Frenzel, 2014; Kunter et al., 2011) and report less anger (Riley et al., 2012) and emotional exhaustion (Skaalvik & Skaalvik, 2014, 2017). Prior research on FIT-Choice teacher motivations has found pre-service teachers' perceived teaching ability, social utility value, prior teaching and learning experiences, and time for family (i.e., personal utility value) were all associated with an affective commitment to being a teacher (i.e., expressing positive emotions towards the profession and a strong desire to remain in the profession; Fokkens-Bruinsma & Canrinus, 2012b). This previous research suggests that teachers' motivations do relate to their affective experiences; however, no researchers have systematically explored how the FIT-Choice motivations predict teachers' distinct emotions (e.g., enjoyment, anger, and anxiety). Therefore, we did not make specific hypotheses regarding the relations between teacher motivations and emotions, opting for an exploratory approach.

1.2. The present study

In this study, we explored (1) how teachers defined their teaching motivations and (2) the implications of these motivations for teachers' autonomy-supportive instruction and teaching emotions. Defining teachers' motivations is an inherently qualitative endeavor, hence we used qualitative methods to address that aim. To understand the implications of teachers' motivations for instruction and emotions, we used mixed methods to offset limitations of each method and allow for a more comprehensive understanding of the role of in-service teachers' motivations in their professional lives (Bryman, 2006; Yoshikawa et al., 2008). Specifically, we used convergent mixed methods in which qualitative and quantitative methods were merged through meta-inferences during interpretation (Creswell & Plano-Clark, 2018).

2. Methods

2.1. Qualitative data

2.1.1. Sample

Our qualitative findings come from teacher interviews conducted between the fall of 2015 and the spring of 2018. In total, teachers who participated in this study came from three school districts. Ten teachers were part of an initial study on teacher engagement that informed the current study's research aims. An additional six teachers participated in the subsequent interviews targeting our research aims about teacher motivations. Out of the 16 total teachers who were interviewed, five teachers came from an urban charter district, ten came from one suburban public district, and one came from an additional suburban public district. All districts were located in a Northeastern metropolitan area of the United States. All teachers in the qualitative sample identified as White, which was representative of the teaching workforce in each district. The urban charter district and one of the suburban public districts served predominantly African-American students, and the remaining suburban public district served predominantly White students. Across all teacher participants, 62.5% were female, 68.75%

had a Masters' degree or PhD, 75% taught middle school while the remaining taught high school, and teacher experience ranged from two to 21 years. Eight teachers taught English Language Arts (ELA), six taught math, one taught science, and one taught both ELA and math (see Table 1 for a side-by-side comparison of qualitative and quantitative samples).

2.1.2. Procedure

In all cases, contact was first made with the principal to pursue a research-practice partnership. Once the principals agreed for their schools to participate in the study, the research team provided teachers with information about participation. Interested teachers signed up and gave informed consent to participate. The first author contacted teachers to schedule data collection. All interviews were conducted by the first author, lasted approximately 40−60 min, and were semi-structured. The semi-structured nature of each interview allowed us to generate a degree of similarity across the interviews while also prompting for more detail on themes that arose organically (Miles et al., 2014).

There were two procedures for our qualitative data collection: one for teachers who participated in the initial teacher engagement study and another for teachers who participated in subsequent interviews on teacher motivations.

Teacher engagement study. Teachers in the engagement study participated in two consecutive interviews, thus allowing us to check our interpretations with the participants themselves and develop a more nuanced understanding of our research aims (Charmaz, 2002). The first interview targeted teachers' motivations for teaching and how they perceive themselves to engage in their work. We asked teachers questions such as: "How did you choose to become a teacher?", "What motivates you to be a teacher now?", "What does it mean for a teacher to engage in their career as a teacher?", and "What does it mean for a teacher to engage in the classroom with students?" We asked teachers about their initial and current teaching motivations to determine whether their motivations changed over time; however, we found teachers' initial and current motivations to be similar. Thus, we combined teachers' responses to questions concerning both initial and current motivations for teaching to analyze them together. The second interview focused on teachers' motivations and engagement in recent class activities.

Subsequent interviews on teacher motivations. Teachers who participated in the follow-up teacher motivations interviews were interviewed only once. This decision was made because in the teacher engagement study, teachers' responses during the follow-up interview were consistent with their first interview, except for questions targeting their recent activities. In the teacher

motivations study, we were not interested in teachers' activities during specific lessons, thus, only one time point was needed. We asked questions similar to those asked during the initial interviews, including: "How do your motivations inform your work in the classroom?" and "What motivational challenges do you face and how have you overcome them?"

2.1.3. Analyses

Our analytic procedure involved both inductive and deductive techniques (Miles et al., 2014) and was carried out in three phases. In analyzing the qualitative data, we noticed there were similar patterns in responses to our interviews from teachers across the three districts, suggesting that teachers were interpreting and responding to our questions similarly.

Phase 1: Developing a coding scheme. Our qualitative analyses began with the data from the teacher engagement study. As we reviewed the transcripts, we generated a list of three categories of emergent themes: (a) initial and current motivations for teaching, (b) strategies teachers use to create effective learning environments, and (c) motivational challenges teachers face inside and outside the classroom.

Phase 2: Cross-case analysis. Once we established our three emergent theme categories, we returned to the transcripts and used cross-case analysis (Miles et al., 2014) to note teachers' thoughts regarding the three themes. In this phase, the first and second authors reviewed the transcripts, took notes on emergent themes in each category, and summarized the patterns for each participant around these categories (see Table 2).

Phase 3: Tallying themes. Once the case analyses were complete, the first and second author generated a final list of themes that originated both from our emergent findings and from prior literature. Then, the first and second authors returned to the transcripts to tally which themes arose in each transcript. We used this data to determine how many teachers mentioned each theme at least once. Each coder separately coded the interviews then both coders met and through discussion came to consensus on all discrepancies.

2.2. Quantitative data

2.2.1. Sample

Our quantitative data comes from a longitudinal study of contextual predictors and outcomes of student engagement collected during the fall of 2014 in five school districts. The quantitative sample consisted of 124 teachers from three suburban public districts, one urban public district, and one urban charter district in the same Northeastern metropolitan area as the qualitative sample. Teachers were predominantly White (96%), which was representative of the sample districts' teaching workforces. The three suburban public districts served predominantly White students, while the urban public and charter districts served predominantly African-American students. Teachers were also mostly female (57%) and had a master's degree or PhD (64%). Teachers ranged from 0.5 to 40 years of teaching experience and half taught math courses (50%), with the remaining teaching science (45%) or math and science (5%). Most teachers taught at either the middle (50%) or high (49%) school within their district, although a small percentage taught at both the middle and high school (0.8%).

2.2.2. Procedure

After school administrators granted permission to conduct the study, we recruited math and science teachers for the larger study on student engagement. Teachers who gave informed consent were sent a link to the survey via email, which was completed on their own time. Over 90% of teachers to whom we sent the link

Table 1
Sample D escriptives.

	Qualitative Sample	Quantitative Sample
White	100%	96%
Non-White	0%	4%
Female	62.5%	57%
Master's or PhD	68.75%	63%
Teaching Experience	2−21 years	1/2 to 40 years
ELA	50%	0%
Math	37.5%	50%
Science	6.25%	45%
ELA and Math	6.25%	0%
Math and Science	0%	5%
Middle School	75%	50%
High School	25%	49%
Middle & High School	0%	0.8%
Total N	16	124

Note. ELA = English Language Arts.

Table 2
Teacher Motivations Cross-Case Analysis Coding Sheet.

Demographic information			
ID#:	Gender:	Race:	Grade level currently teach:
Content area:		Years of Experience:	Highest degree:
Substantive information			

1. Initial teaching motivations
2. Current teaching motivations [explicit response to question and subtle comments as they describe their engagement]
3. Changes in teaching motivations over time [how and why if available]
4. Motivational challenges teachers face <u>in the classroom</u> & how they overcome those challenges [Include notes about explicit links to teacher motivation.]
5. Motivational challenges teachers face <u>outside the classroom</u> & how they overcome those challenges
6. <u>Choices</u> teachers make, <u>strategies</u> teachers use, <u>goals</u> teachers have, or <u>actions/behaviors</u> teachers carry out because of their teaching motivations. [Include comments on how these choices, strategies, goals, and actions/behaviors connect to teacher perceptions of student experiences.]
7. Career satisfaction and persistence [Are they satisfied with their career? Do they plan to stay teachers for a while?]
8. Overall summary

completed the survey.

2.2.3. Measures

Teachers provided demographic information regarding their race, gender, education level, years of teaching experience, course(s) and grade(s) taught, and school district's name in the survey. All predictors and outcomes of interest in this study were assessed using well-validated survey measures, which we describe below.

Teachers' motivations. Teachers' personal utility value, social utility value, prior teaching and learning experiences, perceptions of teaching as a fallback career, intrinsic value for teaching, and intrinsic value for content area were assessed using items from the FIT-Choice scale (Watt & Richardson, 2007). Responses were based on a 5-point Likert scale, ranging from 1 (*Not at all important*) to 5 (*Extremely important*). Teachers' *personal utility value* was measured with three items ($\alpha = 0.76$; e.g., "Teaching hours fit with family responsibilities."). Teachers' *social utility value* was measured with four items ($\alpha = 0.71$; e.g., "Teachers make a worthwhile social contribution."). Teachers' *prior teaching and learning experiences*, *perceptions of teaching as a fallback career*, *intrinsic value for teaching* and *intrinsic value for content area* were each measured with one item (i.e., "I have had good teachers as role models," "I was unsure of what career I wanted," "I like teaching," and "The subject(s) that I teach interest(s) me deeply," respectively). We used separate measures of intrinsic value for teaching and content area because teachers made distinctions between these two types of intrinsic values in qualitative interviews. *Social influences* were measured using a one-item scale, but this data was not used in this analysis because it was not included in the survey for every district, resulting in a high level of missing data on that item.

Teachers' *perceived teaching ability* was measured with seven items ($\alpha = 0.70$; e.g., "I am good at helping all the students in my classes make significant improvement.") from the Patterns of Adaptive Learning Scale (Midgley et al., 2000). Responses were based on a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). All measures were within an acceptable range of skewness (<|2|; George & Mallery, 2001) and kurtosis (<|7|; Byrne, 2010), suggesting they were normally distributed.

Autonomy-supportive instruction. The autonomy-support scale by Assor et al. (2002) was used to assess teachers' autonomy-support in providing choice, allowing criticism, and fostering of understanding. Teachers rated their practices in each class they teach on a 5-point Likert scale ranging from 1 (*Not at all true*) to 5 (*Very true*). We averaged teachers' ratings of autonomy-supportive instruction across each class to have all the variables at the teacher-level for analyses. Teachers' *autonomy-support for providing choice* was measured with five items ($\alpha = 0.72$; e.g., "I allow students to choose how to do work in the classroom."). Teachers' *autonomy-support for allowing criticism* was measured

with four items ($\alpha = 0.74$; e.g., "I tell students that if they do not agree with me, it is important that they express their disagreement."). Teachers' *fostering of understanding* was measured with five items ($\alpha = 0.76$; e.g., "I apply the subject to problems and situations in life outside of schools.").

Teaching emotions. The Emotions Questionnaire for Teachers (Frenzel et al., 2013) was used to assess teachers' enjoyment, anxiety, and anger with item responses based on a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Teachers' *enjoyment* was measured with five items ($\alpha = 0.90$; e.g., "I have so much fun teaching this class."). Teachers' *anger* was measured with four items ($\alpha = 0.92$; e.g., "Sometimes I get really mad at this class."). Teachers' trait-level *anxiety* was measured with four items ($\alpha = 0.91$; e.g., "I feel tense and nervous while teaching this class."). Teachers responded to the items with respect to their emotions in each class period they taught. We then averaged each teacher's responses across their classes to establish a single teaching emotion score for each teacher.

2.2.4. Analyses

We used multiple regression to assess the statistical relationships between teacher motivations and autonomy-supportive instruction and teaching emotions. To account for the nesting of teachers in five school districts, we used four dummy variables with "suburban public district 1" left out as the reference district. We conducted the regressions for each outcome in two steps. First, we regressed each outcome on the demographic variables (i.e., race, gender, education level, years of teaching experience, content area, and district). Second, we added in our teacher motivation predictors.

We conducted each multiple regression in Mplus using Full-Information Maximum Likelihood Estimation (FIML) to handle missing data ($\leq$4.8% for any given variable; Muthén & Muthén, 2012). Little's Missing Completely at Random (MCAR) test was statistically non-significant, $\chi^2(11) = 17.37$, $p = .10$, suggesting that data were MCAR (Little, 1988; Schafer & Graham, 2002) and it was appropriate to use FIML (Baraldi & Enders, 2010).

2.3. Integration of qualitative and quantitative data sources

To draw meta-inferences for our second research aim, we identified points of convergence, complementarity, and discrepancy across qualitative and quantitative findings once all analyses were complete (O'Cathain et al., 2010). We used three legitimation techniques (the mixed-methods equivalent of quantitative validity and qualitative credibility) to assess the quality of our meta-inferences: multiple validities, weakness minimization, and commensurability (Onwuegbuzie & Johnson, 2006). We engaged in *weakness minimization* by using qualitative methods to gather fine-

grained detail on the instructional practices and emotions linked with certain teaching motivations and quantitative methods to assess the predictive validity of these associations. By drawing on both qualitative and quantitative data sources we minimize the weaknesses of each individual approach. We addressed *commensurability* by weaving the interpretation of quantitative and qualitative findings through narrative (Fetters et al., 2013) to achieve an integrated, mixed worldview of our findings as a whole. Finally, we established *multiple validities* by coming to consensus on the coding of all qualitative themes, ensuring that all quantitative measures had acceptable internal consistency reliability, and employing multiple mixed legitimation techniques.

3. Results

3.1. Teachers' motivations to teach

During qualitative interviews, teachers described motivations that aligned with Watt and Richardson's (2007) FIT-Choice theory, such as social utility value, intrinsic value, prior teaching and learning experiences, perceived teaching abilities, personal utility value, and social influences. The only motivation not mentioned by any teacher in our sample was teaching as a fallback career. Although no teacher motivations fell outside of the FIT-Choice constructs, nuances in how teachers talked about their motivations illuminated how these motivations manifest in real-life teaching experiences. Below, we discuss each motivation in order from the most frequently mentioned to the least frequently mentioned and offer examples for how teachers described these motivations.

3.1.1. Intrinsic value

Nearly every teacher in our sample mentioned intrinsic value, which represented teachers' internal desire or passion to teach (N = 15). We noticed teachers differed in the content of their intrinsic value, which has not yet been shown in prior FIT-Choice studies. Some teachers reported that they intrinsically valued the activities of teaching or working with students, which we call intrinsic value for teaching (N = 6). For instance, a female ELA teacher with nine years of experience emphasized her intrinsic value for working with students. In fact, this teacher stated that teaching was no longer about her content area; instead, it had become all about her students:

> I actually hate teaching English to be honest. It started with, 'those who can't do, teach' and then once I got in front of kids, I was like oh, no, it's about the kids. In some ways I feel lucky that I discovered that. That it wasn't about the curriculum or like the subject area because that's not going to −I think that's why teachers quit.

Another teacher described intrinsic value for her content area only (i.e., math), which we call intrinsic value for content area. This female teacher with 13 years of experience described that her passion for math drove her to teach:

> I just love being able to find solutions, like I thought every problem was like a puzzle that you just have to put together, and just find the pieces that make the puzzle look complete. And I just, I don't know, I really took to [math].

Most teachers described both teaching and their content area as sources of intrinsic value (N = 8).

3.1.2. Social utility value

Teachers motivated by social utility value desired to make a difference in students' lives and in their community through their teaching (N = 14). One female ELA teacher with five years of experience was driven by the power she felt as a teacher to support her students: "You really have the power to make a big difference and […] that's important to me." Similarly, a male math teacher with three years of experience described dedicating his time and effort to teaching because he felt "like everybody deserves someone who's working hard for them." This teacher felt like he was able to fulfill his social utility value in the urban charter district where he worked because the district served a large population of students from low-income and racially-marginalized backgrounds.

3.1.3. Prior teaching and learning experiences

Prior teaching and learning experiences captured teachers' exposure to teaching and experiences with other teachers that led them to become a teacher (N = 14). These teachers most often described the strong influence of family members who were teachers and impactful experiences with their own teachers. In some cases, this was the only career they knew, as one female ELA teacher with ten years of experience described:

> Teaching is just kind of hard work in my family. Um so my dad um is a religious educator […] My mom was a real estate agent my entire life, and then at 40, she decided to go back to school […] and get her teaching cert[ification]. So, I got to see that and what that looked like. And […] that kind of just realm of existence is really all I've ever known […]. I didn't know what else I was going to do and that was really [it].

Teachers also mentioned that negative experiences with their own teachers led them to teach. Unlike the negative teachers in their life, though, these educators wanted to make a positive impact on their students' lives. The same teacher who felt she only knew teaching said, "I had […] some really bad experiences of English teachers when I was in high school. So, I wanted to be the teacher who saw my kids compared to the teachers who tried to isolate me out of excelling."

One teacher described prior teaching and learning experiences unrelated to family members/friends who were teachers or her own previous teachers. This female science teacher with two years of experience talked about her experience working for education advocacy organizations and the local science museum that led her to a teaching career. She chose to become a teacher because her prior experiences led her to feel she would have the most meaningful impact on students in a classroom setting:

> I have run after school programs, summer camps, I have done advocacy work, I've worked […] on the policies side of […] education. And community organizing, I've worked with parents, and […] community members who care about education. So, I feel like I've touched it in all different ways. Um, and I felt like, you know where change really happens when it comes to kids is in the classroom.

3.1.4. Perceived teaching ability

Teachers' perceptions of their abilities to teach were also important motivations (N = 8). Some teachers felt confident in their abilities to work with students from the start. For example, a female ELA teacher with 21 years of experience remarked, "I taught Sunday school from the time I was young. I worked with, you know, kids and always was told I had a knack for it." Other teachers chose to

pursue teaching due to strong skillsets in their content area, but these educators felt their perceived teaching abilities were challenged once they entered the classroom. A male high school math teacher with three years of experience shared:

I went there for a math degree, because I knew I wanted to study math. I liked math. I was good at math. […] And as time went on getting the math degree, I found that I was really … I felt like I was really good at helping my friends to learn math. [… But,] my first year I felt sort of blindsided. […] you go in with really good intentions. And you're told you can do all these things, but then you see what it's really like and I think nobody was being upfront with me about what was really happening.

His challenges ultimately prevented him from fulfilling his other motivations until he was able to feel confident in his teaching abilities:

So then I felt like I couldn't […] have my motivations be the same because I wasn't able to meet those expectations for myself. So, I had to shift the motivations into, 'do it, because you can do it. You know you can do it.' Once you have that under then I can get back to my original motivation.

3.1.5. Social influences

Social influences represent persuasion/dissuasion from family or friends who believed that the teacher should pursue teaching (N = 5). Teachers in our sample only described persuasion from family or friends who were teachers or observed the participant teaching (e.g., tutoring friends or training colleagues). For example, a male math teacher with two years of experience described how he grew up in a family of teachers:

My dad is a biology and environmental science teacher. He also taught college courses, night classes when I was a kid. […] My mom is a nurse educator so she teaches floor nurses for a living. […] my dad had always been kind of putting the bug in me since I started college. 'Well you would be a great teacher; you have the same skills that I have as a teacher,' he would say.

However, in college, this teacher pursued a communications degree, and he didn't make the decision to become a teacher until he realized he really enjoyed being in a school setting when he was working for a photographer taking school pictures.

3.1.6. Personal utility value

A few teachers mentioned being motivated to teach by personal utility value, which represents how the characteristics of a teaching career—such as summers off, job stability, and job transferability—fit the needs of their personal life (N = 4). All four teachers were female and described feeling that the teaching schedule gave them the work-life balance they needed. For example, a female ELA teacher with 21 years of experience talked about wanting to have time off with her children: "I hate to admit this but one of the reasons I got into teaching was because I had my own children and I wanted to be off the same time that they were." Interestingly, these teachers also expressed feeling bad that the favorable teaching schedule was the reason they got into teaching because this motivation was not focused on their students who are now their primary motivation.

3.2. Teachers' motivations and autonomy-supportive instruction

We used qualitative and quantitative data sources to address links between teachers' motivations and autonomy-supportive instruction. In our qualitative analyses, we found that teachers often described that their intrinsic and social utility values related to their provision of autonomy-support. For example, a third-year male math teacher's interest in real-life applications of math led him to use strategies that support students' understanding of the content:

The best part about my job I think is the fact that everything that we do in this course is just real life application, you know, we are taking basic concepts and we are applying to real things […] for example, the other day I gave them a task of building an ice rink, and they had to find how much lumber they had to buy, […] we looked at different prices and they had to find the better buy, then we calculated the volume and converted it to gallons, and then we had the sun come out, and […] 12 percent of the ice melted, so we really do a lot of things, and it's just such a, for me it's just a perfect topic […] I am engaged in it and the students, they get excited about it too.

In addition, his social utility value motivated him to foster understanding by pushing students to go beyond completing assignments and think critically about the long-term meaning of mastering those skills:

I don't want kids to think that they're coming to school to get points to get a diploma. Like it's just a checklist thing. […] You're there to better yourself […]. To make yourself more employable or to open opportunities for employment.

One strategy this teacher uses to encourage students' critical thinking is to have students share and figure out their mistakes as a class. This helps students better understand the material:

I asked the student who had it wrong—I was like, 'You have it wrong, but can you go up and show us what you were thinking. Cause it's gonna help you, but it's also gonna help everyone else who's—there's other people like you, but it helps the people who got it right to understand like what's really happening whenever they're solving this problem.'

Similarly, given her social utility value, a female ELA teacher with nine years of experience described centering her instruction on students' needs. She talked about trying to provide choice and opportunities for criticism by incorporating students' voices in the lesson, making sure activities are meaningful for students, and giving students opportunities to choose how they get involved:

Having those conversations with them about how should we go about this? What do you think is a good way to do this? To the point that, I'm […] trying more and more to hand control over to the students. In my civics class, I have a student who's just really passionate about current events. […] I was like, 'Why don't you stop interrupting class and you can run Friday current events.' I just thought she would play the CNN student news and talk about it. No. She made an entire PowerPoint of all of these current events that she structured after CNN student news, so it's like international, national, feel good. She literally ran the

whole class. She had discussion questions. She had videos going. It was phenomenal. […] I have kids in other classes who will just come in and be like, 'Can I run warm up today?' 'Hecks yeah!' […] and I get their input on everything […] there's kind of more of like an automatic vibe because they know that there was student voice in the creation of it. I have found that to be —it's a lot of releasing control, but it's been really effective this year.

Quantitative analyses (see Tables 3, 4 and 5) indicated that teachers who reported stronger perceived teaching abilities provided more choice ($\widehat{\beta} = 0.219$, SE $= 0.092$, $p = .017$), allowed more criticism ($\widehat{\beta} = 0.289$, SE $= 0.091$, $p = .002$), and fostered more understanding ($\widehat{\beta} = 0.260$, SE $= 0.086$, $p = .003$) in their classrooms. In addition, we found that teachers with stronger intrinsic value for their content area endorsed fostering more understanding within their classrooms ($\widehat{\beta} = 0.217$, SE $= 0.086$, $p = .012$). However, we found that teachers' personal and social utility values, prior teaching and learning experiences, fallback career, and intrinsic value for teaching were not significant predictors of any of the autonomy-supportive practices.

3.3. Teachers' motivations and teaching emotions

Using qualitative and quantitative data sources, we examined the links between teachers' motivations and teaching emotions. In our qualitative analyses, we found that teachers' intrinsic value for teaching was linked to their teaching emotions. For example, a female ELA teacher with seven years of experience described that she especially enjoys teaching when students work hard and think critically:

I enjoy when they are kind of participating in the lesson, when they are raising their hand when they're asking questions, […] I get engaged when they are kind of thinking ahead in the lesson, and that shows me that they are engaged in the lesson and kind of understanding and thinking more, oh what about you know, you have this type of sentence. Or that word being used the same. And then I say oh, okay that's on my next slide or you

know it's on a few slides in front, so that is exciting to see when they are kind of showing that they're like, thinking beyond what I'm doing at that moment.

Another female ELA teacher with four years of experience described how her intrinsic value for her content area was tied to her enjoyment of teaching:

If I really, really love the text that I'm reading then I often can immerse myself completely within my career. And I'll, when I was reading and teaching Romeo and Juliet, I'm a huge Shakespeare fan, I actually would listen to the audio of the text while I was getting ready in the morning, I would listen to lectures of AP classes, so that when I went in to teach the lecture, I would have my own lesson plan, but I could also pull upon what other teachers were using and doing in their classrooms. And I just was so immersed with like the beauty of the text, but you know it was the point where the kids were like, she's crazy, she loves this so much. But […] I think that when you're really passionate about what you're reading, that can transpire on to them.

Teachers with a strong intrinsic value for their content area also often reported struggling with student misbehavior. In fact, teachers with strong intrinsic ties to their content area felt more frustrated with misbehavior compared to teachers less intrinsically linked to their content area. For example, a female ELA teacher with four years of experience stated:

It makes it easier whenever they are I would say, proficient or above average learners, it really does, it really does because you don't go to school to be a babysitter or teach somebody how to behave, you went to school to teach, and what we're finding today is that they need parenting. So I would say having kids that are average and above average with the, with proper behavior in the classroom keeps me much more engaged in my lesson and much more engaged in teaching and wanting to continue in this career.

Finally, a male math teacher with 15 years of teaching experience talked about his social utility value for teaching—wanting to make a difference in students' lives—but felt students' low skill levels made him worry about helping them succeed: "The academic level that I see declining, pretty much every year, when I get them. That's one of things that's been frustrating me a lot this year."

Our quantitative analyses (see Tables 3-5) indicated that higher ratings of social utility value were associated with greater enjoyment ($\widehat{\beta} = 0.198$, SE $= 0.087$, $p = .022$) and less anger ($\widehat{\beta} = -0.160$, SE $= 0.080$, $p = .046$) and anxiety ($\widehat{\beta} = -0.186$, SE $= 0.092$, $p = .043$) in teaching. In addition, teachers who endorsed higher perceived teaching abilities reported greater enjoyment ($\widehat{\beta} = 0.211$, SE $= 0.082$, $p = .010$) and less anger ($\widehat{\beta} = -0.248$, SE $= 0.076$, $p = .001$) in teaching. The remaining motivations (i.e., personal utility value, prior teaching and learning experience, fallback career, intrinsic value for teaching, and intrinsic value for content area) did not significantly predict any teaching emotions.

4. Discussion

In the present study, we expanded on the predominantly quantitative teacher motivation literature by utilizing mixed-methods approaches to explore the complexities of in-service teachers' motivations to teach. Expanding upon existing FIT-Choice theory, findings from teacher interviews provided

Table 3
Descriptive Statistics for all Variables in our Regression Models.

	Mean	SD	Range
1. Non-White	—	—	0 to 1
2. Female	—	—	0 to 1
3. Master's or PhD	—	—	0 to 1
4. Years of Teaching Experience	12.82	8.16	.5 to 40
5. Science Teacher	—	—	0 to 1
6. Science & Math Teacher	—	—	0 to 1
7. Suburban Public District 1	—	—	0 to 1
8. Suburban Public District 2	—	—	0 to 1
9. Suburban Public District 3	—	—	0 to 1
10. Urban Charter District	—	—	0 to 1
11. Urban Public District	—	—	0 to 1
12. Personal Utility Value	2.67	1.03	1 to 5
13. Social Utility Value	3.96	0.72	1.5 to 5
14. Perceived Teaching Ability	3.47	0.50	2.43 to 4.86
15. Prior Teaching & Learning Experiences	4.10	1.00	1 to 5
16. Fallback Career	1.59	0.88	1 to 4
17. Intrinsic Value − Like Teaching	4.65	0.54	2 to 5
18. Intrinsic Value − Content interest	4.40	0.86	1 to 5
19. Providing Choice	3.35	0.54	2 to 4.8
20. Allowing Criticism	4.09	0.55	2.75 to 5
21. Fostering Understanding	4.06	0.52	2.8 to 5
22. Teacher Enjoyment	4.36	0.57	2.4 to 5
23. Teacher Anger	1.88	0.87	1 to 4.17
24. Teacher Anxiety	1.75	0.79	1 to 4

Table 4
Correlations for all Variables in our Regression Models.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. NW	1																							
2. FE	.10	1																						
3. MPhD	.07	.09	1																					
4. YTE	-.08	.00	.03	1																				
5. ST	-.10	-.18*	-.01	.01	1																			
6. SMT	-.05	-.03	.01	-.19*	-.21*	1																		
7. SPD1	-.08	-.01	.07	.08	.09	-.09	1																	
8. SPD2	-.09	.01	-.16	.09	-.15	-.10	-.19*	1																
9. SPD3	-.08	-.03	.11	.15	.11	.02	-.16	-.18*	1															
10. UCD	.24*	.21*	-.10	-.50*	.00	.00	-.18*	-.20*	-.18	1														
11. UPD	.01	-.14	.07	.14	-.02	.13	-.33*	-.36*	-.32*	-.35*	1													
12. PUV	.05	.05	-.05	-.08	.10	-.06	.00	-.08	.26*	-.08	-.07	1												
13. SUV	-.07	.22*	-.11	-.17	-.08	.25*	-.07	.06	-.01	.18*	-.13	.14	1											
14. PTA	.03	.22*	-.09	.10	-.01	.10	.11	.14	-.12	.04	-.13	-.20*	.15	1										
15. PTLE	-.10	.16	-.05	-.05	-.10	.04	-.04	.04	.08	-.05	.00	.17	.34*	-.08	1									
16. FC	.00	-.23*	.04	.04	.19*	-.07	.06	-.20*	.19*	-.09	.05	.24*	-.18*	-.22*	.08	1								
17. IV-LT	.13	.25*	.01	.13	-.26*	.15	.10	.05	.04	-.08	-.07	-.09	.14	.21*	.16	-.13	1							
18. IV-SA	-.14	.00	.05	.13	.03	-.19*	.13	.04	.14	-.23*	-.05	.09	.07	.06	.27*	.11	.01	1						
19. PC	-.01	.03	-.11	-.08	-.02	.01	.08	-.04	-.17	.07	.04	-.08	.07	.23*	.15	-.11	.14	.16	1					
20. AC	.08	.00	.03	-.03	-.02	-.02	-.07	-.02	.00	.09	-.03	-.12	.07	.25*	.02	-.03	.18	.08	.49*	1				
21. FU	-.12	.05	-.03	.06	.08	-.04	.18*	.04	-.08	-.17	.02	-.08	.14	.33*	.05	-.16	.16	.27*	.54*	.46*	1			
22. ENJ	.01	.02	.01	.28*	-.06	-.04	.20*	.17	.18	-.30*	-.16	-.10	.15	.31*	.03	-.19*	.22*	.19*	.15	.31*	.36*	1		
23. ANG	.06	.07	-.11	-.27*	-.03	-.03	-.25*	-.24*	-.24*	.36*	.26*	.06	-.09	-.31*	.04	.14	-.22*	-.03	.03	-.13	-.17	-.70*	1	
24. ANX	.03	-.02	-.18	-.35*	-.11	.15	-.15	-.12	-.12	.26*	.09	.05	-.07	-.23*	.09	.11	-.07	-.16	-.06	-.16	-.32*	-.66*	.67*	1

$p < .05$. *Note.* NW=Non-White, FE=Female, MPhD = Master's or PhD, YTE=Years of Teaching Experience, ST= Science Teacher, SMT=Science and Math Teacher, SPD1 = Suburban Public District 1, SPD2 = Suburban Public District 2, SPD3 = Suburban Public District 3, UCD=Urban Charter District, UPD=Urban Public District, PUV=Personal Utility Value, SUV=Social Utility Value, PTA=Perceived Teaching Ability, PTLE=Prior Teaching and Learning Experiences, FC=Fallback Career, IV-LT=Intrinsic Value - I like teaching, IV-SA=Intrinsic Value - The subject(s) that I teach interest(s) me deeply, PC=Providing Choice, AC = Allowing Criticism, FU=Fostering Understanding, ENJ = Enjoyment, ANG = Anger, and ANX = Anxiety.

Table 5
Associations Between Teacher Motivations and Autonomy-Supportive Instruction and Teaching Emotions.

	Autonomy-Supportive Instruction			Teaching Emotions		
	Providing Choice	Allowing Criticism	Fostering Understanding	Enjoyment	Anger	Anxiety
Non-White	-.021 (.090)	.063 (.090)	-.058 (.084)	.138 (.078)	-.069 (.072)	-.050 (.083)
Female	-.067 (.095)	-.104 (.095)	-.022 (.089)	-.088 (.084)	.164 (.078)*	.045 (.090)
Master's or PhD	-.095 (.087)	.044 (.087)	-.026 (.083)	-.029 (.081)	-.123 (.077)	-.182 (.086)*
Years of Teaching Experience	-.105 (.101)	-.159 (.101)	-.099 (.095)	.058 (.091)	-.042 (.083)	-.224 (.095)*
Science Teacher	.006 (.091)	-.086 (.091)	.115 (.085)	-.006 (.082)	-.067 (.075)	-.112 (.087)
Science & Math Teacher	-.035 (.096)	-.167 (.095)	-.081 (.090)	-.088 (.084)	.008 (.077)	.110 (.089)
Suburban Public District 2	-.133 (.115)	.039 (.116)	-.131 (.108)	-.121 (.103)	.056 (.095)	.033 (.109)
Suburban Public District 3	-.153 (.110)	.157 (.110)	-.133 (.104)	.075 (.099)	-.065 (.091)	-.006 (.105)
Urban Charter District	.010 (.132)	.006 (.133)	-.255 (.124)*	-.449 (.114)***	.519 (.105)***	.228 (.123)
Urban Public District	.010 (.128)	.232 (.128)	-.059 (.121)	-.297 (.114)**	.434 (.104)***	.183 (.122)
Personal Utility Value	-.016 (.094)	-.108 (.094)	-.040 (.088)	-.145 (.086)	.059 (.080)	.031 (.092)
Social Utility Value	-.056 (.098)	.098 (.098)	.114 (.092)	.198 (.087)*	-.160 (.080)*	-.186 (.092)*
Perceived Teaching Ability	.219 (.092)*	.289 (.091)**	.260 (.086)**	.211 (.082)*	-.248 (.076)**	-.162 (.087)
Prior Teaching & Learning Experiences	.157 (.094)	.001 (.095)	-.016 (.089)	-.009 (.087)	.023 (.080)	.107 (.092)
Fallback Career	-.086 (.092)	.043 (.093)	-.127 (.087)	-.165 (.086)	.140 (.080)	.119 (.092)
Intrinsic Value − Like Teaching	.113 (.093)	.145 (.093)	.127 (.088)	.066 (.083)	-.080 (.077)	.012 (.088)
Intrinsic Value − Content Interest	.153 (.092)	.047 (.093)	.217 (.086)*	.077 (.083)	.107 (.076)	-.066 (.088)
R-Squared	.169 (.061)**	.160 (.060)**	.263 (.068)***	.368 (.070)***	.466 (.067)***	.288 (.070)***

*$p < .05$, **$p < .01$, ***$p < .001$. *Note.* All coefficients are standardized and standard errors are in parentheses.

descriptive and empirical clarity regarding how in-service teachers defined their motivations for teaching. In addition, qualitative and quantitative findings suggested links between teachers' motivations, their provision of autonomy-supportive instruction, and their teaching emotions. Overall, our exploratory findings contribute novel insights regarding teachers' motivations that may inform future research.

4.1. Unpacking the complexities of teachers' motivations: Qualitative insights

These teachers' primary motivations for becoming and staying a teacher were the same as those outlined by the FIT-Choice model. Yet, there were also subtle nuances in teachers' meaning making of their motivations that we would not have found if we had relied solely on quantitative methods. Specifically, we found nuances in the ways teachers described their intrinsic value for teaching, connections between social utility value and school context, feelings of guilt that accompanied personal utility value, and a focus on negative prior teaching and learning experiences as motivators for teaching. In the following paragraphs, we discuss these nuances and offer suggestions for future research.

During the interviews, teachers described intrinsic value in two distinct ways: intrinsic value for teaching and intrinsic value for their content area. In the FIT-Choice scale, Watt and Richardson (2007) use general items to measure teachers' intrinsic value, such as: "I am interested in teaching", "I have always wanted to be a teacher", and "I like teaching" (p. 179). These items do not distinguish what it is about teaching that brings teachers intrinsic value, such as enjoying teaching because you get to work with students or because you get to teach a specific content area. Although it is likely that teachers are intrinsically motivated for both of these reasons, one motivation might be stronger than the other. Accordingly, it may be important to distinguish between these two intrinsic values when examining how teachers' motivations predict outcomes in future studies.

Our findings also demonstrated the importance of school context in shaping how teachers understand their motivations. For example, teachers explicitly connected their social utility value to their school context. Although almost every teacher in our sample was motivated by the desire to make a difference in their community or students' lives, teachers in the urban charter school

district expressed a contextualized motivation to teach at their school. This motivation specificity related to urban teachers' belief in their positive impact on the school's predominantly low-income and racially-marginalized student population. Previous research has also found that teachers often search for and accept positions in urban schools because they believed they could help make a more meaningful contribution to society in an urban context and with students who have the most need (Kokka, 2016; Slayer, 2003). Indeed, teachers motivated by inequalities in the education system may behave differently than those motivated by making a difference in individual students' lives; however, this distinction is not captured by the context-general FIT-Choice scale. Future research should continue to explore how teachers' motivations may differ by school context and how these motivations may impact student outcomes.

Interestingly, teachers also described feelings of guilt that accompanied their personal utility value. Teachers felt personal utility value (e.g., work-life balance, job security) was not the "right" reason to pursue and continue teaching—especially when compared to social utility or intrinsic values focused on working with youth. Without exploring these phenomena through qualitative methods, we would not have observed the mixed feelings that can result from perceiving strong personal utility value for teaching. It is thought-provoking that a seemingly positive motivating force may have unanticipated negative consequences. Such a finding has not been reported in prior FIT-Choice literature. It will be important for researchers to explore the appropriateness of emphasizing personal utility value as a conduit for helping teachers feel more satisfied and engaged in the profession.

A final major insight from the teacher interviews was that several teachers focused specifically on negative, rather than positive, prior teaching and learning experiences as motivations for teaching. Some teachers in our study were motivated by a desire to better support students' learning experiences because they themselves had bad experiences with teachers when they were students. To date, this finding has not been documented in FIT-Choice research. However, teacher identity development research suggests that teachers formulate their possible future professional identities and work to attain desired future identities while avoiding undesired ones (Hamman et al., 2010; Markus & Nurius, 1986; Ronfeldt & Grossman, 2008). Teachers may use past experiences as examples of who they do or do not want to become, and in

this way their desired future selves shape their motivations for teaching.

4.2. Teacher motivations, autonomy-supportive instruction, and teaching emotions: Meta-inferences across qualitative and quantitative findings

According to O'Cathain et al. (2010), there are three interpretations of mixed-methods findings: (a) *convergent* (i.e., findings agree), (b) *complementary* (i.e., findings provide complementary insights), and (c) *discrepant* (i.e., findings contradict each other). Using this framework to integrate qualitative and quantitative findings, we identified three emergent meta-inferences regarding the relations between teachers' motivations and their instructional practices and emotions. In the following paragraphs, we discuss these meta-inferences and demonstrate the value of mixed methods when studying teacher motivation.

4.2.1. Intrinsic value, social utility value, and perceived teaching abilities: Complimentary perspectives on teacher motivations and instruction

Qualitative and quantitative findings offered complementary perspectives on how teaching motivations matter for autonomy-supportive instruction. Specifically, qualitative findings suggested how teachers interpreted their own behaviors and quantitative findings suggested which factors related to teachers' behaviors relative to other teachers. Teacher interviewees explained using autonomy-supportive instruction due to their intrinsic and social utility values. For example, some teachers stated that they relied on real-world application because they found it interesting and it allowed them to push students to think critically. Perceived teaching ability shared a significant relation with teachers' autonomy-supportive instruction, and it was also the most consistent teacher motivation predictor, followed by intrinsic value for content area. Teachers with higher perceptions of their abilities engaged in more autonomy-supportive instruction compared to other teachers. Teachers with greater intrinsic value for their content area engaged in fostering deeper understanding with their students, but they showed no difference in the other two autonomy-supportive instructional practices.

We know that teachers who report greater intrinsic values and perceived teaching abilities tend to use autonomy-supportive instruction more frequently (see, for example, Katz & Shahar, 2015). However, prior researchers have not yet identified other motivations that matter for teachers' implementation of autonomy-supportive instruction nor have they distinguished between different types of intrinsic values. Together, both results provide insights about which motivations influence teachers' behavior. If our study had focused solely on qualitative or quantitative components, we would have underestimated the importance of intrinsic and social utility values or perceived teaching ability in teachers' autonomy-supportive instruction.

4.2.2. Social utility values and teaching emotions: Convergent evidence

Convergent across data sources, we found social utility value played a role in positive and negative teaching emotions. Qualitative findings suggested that teachers who were motivated by social utility value described feeling enjoyment more often and were less likely to voice a negative impact on their job satisfaction when confronted with frustration. For example, one teacher got frustrated and anxious because his students' low skill levels made it difficult to achieve the results he wanted for his students; however, this challenge did not prevent him from finding his work to be rewarding. Similarly, quantitative findings suggested that teachers

with greater social utility value enjoyed teaching more and experienced less anger and anxiety when teaching. These convergent findings across data sources align well with prior research demonstrating that teachers with strong social utility value report greater affective commitment (Fokkens-Bruinsma & Canrinus, 2012b) and satisfaction with their career choice (Hennessy & Lynch, 2017).

4.2.3. Discrepancies in the role of perceived teaching abilities in teaching emotions: A consequence of methodological limitations?

Findings regarding the importance of perceived teaching abilities for teaching emotions were discrepant across data sources. Qualitative findings did not suggest a relation between perceived teaching abilities and teaching emotions. Yet, quantitative findings suggested perceived teaching abilities were associated with greater teacher enjoyment and less anger. Findings from prior quantitative research align well with our quantitative finding suggesting that teachers' perceived teaching abilities are associated with more positive and less negative emotion outcomes (e.g., Kunter et al., 2011; Riley et al., 2012; Skaalvik & Skaalvik, 2014, 2017).

When such discrepant findings are observed across data sources, mixed-methods researchers recommend considering possible explanations for such discrepancies (Pluye et al., 2009). One reason for the discrepant findings regarding perceived teaching abilities and teaching emotions could be that we did not prompt for specific motivations defined by FIT-Choice theory in qualitative interviews, but quantitative surveys had items for each FIT-Choice motivation. We took a broad approach in our interview protocol to allow for motivations not yet defined in the literature to emerge. However, an unintended consequence was that teacher interviewees talked relatively little about their perceived teaching abilities. It is plausible that the methodological constraints led to these discrepant findings.

4.3. Limitations

This study has several limitations that future researchers should consider. First, we relied on a small sample of predominantly White teachers from one geographical area. Although the sample represented participating districts, results are not intended to be generalizable to other teacher populations. Rather, these findings provide nuance to prior studies that can inform researchers' understandings of how teachers' motivations influence their instruction and emotions as well as suggest areas for future research.

Furthermore, we want to highlight the importance of exploring the intersecting roles of race and context in shaping teachers' instruction and emotions in future research. Our sample was over 90% White, and our quantitative findings indicated that for some outcomes, the predictive power of school contexts, particularly urban districts, was stronger than the predictive power of teacher motivations. Research on White teachers in urban schools has shown that such teachers often incorporate harmful white savior complexes into their teaching motivations by seeking to "save" urban youth from their context (Matias, 2016). Moreover, studies of unconscious racial bias in classroom rules and routines widely demonstrate overly harsh disciplinary contexts created by White teachers in urban schools that further disadvantage Black and Brown youth (Sue, Lin, Torino, Capodilupo, & Rivera, 2009). Although these topics were beyond the scope of the current study, we urge researchers to continue this work with more diverse samples and across educational contexts.

Second, this cross-sectional study offers only a snapshot of teachers' motivations, instruction, and teaching emotions. Our samples do include teachers with a wide range of experience teaching, but we cannot offer insight into how teachers'

motivations and the relations to their instructional practices and teaching emotions develop over time. We also cannot make causal or directional claims due to possible third-variable explanations or bi-directional effects.

Third, our qualitative sample was composed of mostly ELA and math teachers with only one science teacher; yet, our quantitative sample incorporated solely math and science teachers. We recognize this potential limitation as teachers in different content areas may face different challenges in the classroom (Kukla-Acevedo, 2009). However, we found no patterns that consistently varied across teachers from different content areas in the qualitative or quantitative portions of the study. This finding suggests that these teachers likely have more similarities than differences when it comes to their motivations (see also Watt et al., 2017).

Fourth, we were unable to capture every teacher motivation in both the qualitative and quantitative analyses. No teachers mentioned perceptions of teaching as a fallback career in the interviews and teachers talked relatively little about their perceived teaching abilities. Also, we did not use a quantitative measure of social influences due to dataset limitations. In the future, we encourage researchers to conduct additional qualitative and mixed-methods studies that target particular motivations and outcomes to build cross-methodological consensus on the implications of teachers' motivations.

5. Conclusion

Given the role of teacher motivation in effective teaching (Klassen & Tze, 2014), our mixed-method findings are highly relevant for educational researchers and practitioners. These findings demonstrate the complexities of teachers' motivations and the importance of considering multiple data sources to fully understand the links between teachers' motivations and their professional practice and wellbeing. Researchers and educators should be aware of teachers' multi-faceted motivations, particularly with respect to intrinsic and social utility values for teaching. Also, researchers should utilize multiple data sources to understand how teachers' motivations relate to their instruction and emotions. Motivations deemed influential in predicting quantitatively how teachers engage in practices relative to their peers, for example, may differ from the motivations most salient among teachers' meaning making. We encourage future researchers to build upon these findings to understand the complex array of motivations that influence teachers' behavior and emotions.

Funding

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