The What, Why, How of Teachers' Beliefs about Motivation

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In the landmark paper on teachers' beliefs, Pajares implies that most researchers support the idea that "the beliefs teachers hold influence their perceptions and judgments, which, in turn, affect their behavior in the classroom" (1992, p. 307). This is certainly true in the domain of motivation and offers a compelling argument for focusing on teachers' beliefs about student motivation and motivational supports (Fives & Buehl, 2012; Robinson, 2023). Indeed the very invitation we received to write a chapter about "teachers' beliefs about student motivation/motivating students" reveals the inevitable connection between what teachers believe about the *nature* of student motivation and the decisions they make about *how* to motivate students. In other words, the reciprocity of teachers' beliefs and practices (Buehl & Beck, 2015) as they pertain to student motivation cannot be separated. To negotiate this tension between the beliefs teachers hold about student motivation itself and the beliefs teachers hold about if and how they should motivate students, we anchor our discourse to a recent framework of motivational climate (Robinson, 2023).

The structure of this chapter follows the conceptual ideas shown in Figure 1. We chose to frame teachers' beliefs about student motivation and motivational supports by the knowledge amassed through empirical research on motivation. As such, we begin the chapter by reviewing empirical research to establish a baseline of knowledge to which we can compare teacher beliefs. Following Parajes (1992), we define beliefs as "an individual's judgement of the truth or felicity of a proposition" (p. 316) as related to the knowledge, people, and events they encounter in their profession. Importantly, we recognise that as a construct beliefs are different from knowledge and may conflict with evidence (Pajares, 1992). Teachers' beliefs about student motivation are

represented in the left panel of Figure 1 and their beliefs about motivational supports are represented in the right panel. Interspersed with the empirical evidence, we first consider teachers' beliefs about the quantity, source, and malleability of student motivation, defined as "a set of interrelated desires, goals, needs, values, and emotions that explain the initiation, direction, intensity, persistence, and quality of [student] behavior" (Wentzel & Miele, 2016, p. 1). Then, we consider teachers' beliefs about motivational supports in connection to their knowledge and confidence, personal responsibility for motivation, and motivating styles. In this context, motivational supports are defined as approaches that "shape the quality, meanings, and quantity of individual motivational beliefs" (Robinson, 2023, p. 93). Both sets of beliefs have dotted frames to indicate that they are permeable. Many forces act upon and filter teachers' beliefs about student motivation and motivational supports including but not limited to the characteristics of students in their classroom and the standards set by schools, boards, and society at large about what is viewed as acceptable, effective, and efficient in motivating learners (Figure 1, top panels). We recognise that these forces are part of an education system "dominated by White, middle-class values with respect to their organisation, structure, and curricular emphases" (Wigfield & Koenka, 2020, p. 6). Because of this, as will become clear, much of the evidence we review on student motivation, motivational supports, and teachers beliefs is insufficiently sensitive to diversity and race. Notwithstanding the eurocentric context of schooling, student, teacher, and system beliefs ultimately connect, thereby creating a motivational climate. Robinson (2023) explains that students feel the motivational climate of a classroom as they attach meaning and quality to the contextual features created by motivational supports. As such, motivational climate exists as a shared perception and as perceptions that are unique to individual students or

groups, known as microclimate and have important implications for student educational outcomes.

Student Motivation

Research and Scholarly Perspectives

The study of student motivation is one of the most prolific in educational psychology (Koenka, 2020). Often, the five theories acknowledged as shaping the field are attribution theory, expectancy-value theory, social cognitive theory, achievement goal theory, and self-determination theory. Each theory has made unique contributions to understanding the antecedents, outcomes, and experience of students' motivational beliefs, values, needs, and goals (Koenka, 2020; Miele et al., 2024) by identifying a set of constructs that researchers consider adaptive relative to a different set of constructs that they consider maladaptive. Please note, that although there is increasing commitment to race-reimaged research (DeCuir-Gunby, 2024), the literature reviewed next lacks diversity.

Adaptive constructs include perceptions of control, instability and growth beliefs, expectations of value and success, a sense of efficacy, mastery oriented goals, and intrinsic or autonomous forms of motivation (Miele et al., 2024). These constructs are deemed to be adaptive because of strong correlational, longitudinal, meta-analytic, and experimental evidence that shows positive associations with outcomes such as achievement, persistence, positive emotions, creativity, and wellbeing (e.g., Howard et al., 2021, Burnette et al., 2023; Huang, 2011). Adaptive forms of motivation are contrasted with less adaptive types of motivation including low perceived control, stable and fixed beliefs, helplessness, avoidance goals, and extrinsic or controlled forms of motivation (Miele et al., 2024). These constructs have earned their maladaptive reputation through similarly strong correlational, longitudinal, meta-analytic, and

experimental evidence that shows positive associations with academic dishonesty, negative emotions, stress, and burnout (e.g., Howard et al., 2021; Huang, 2011; Krou et al., 2021). Although these constructs are often studied in isolation, there are current efforts to bring greater integration and parsimony to the field (Skinner, 2023; Urhahne & Wijnia, 2023), to re-image constructs according to racially influenced sociocultural perspectives (DeCuir-Gunby, 2024), and to consider associations amongst the constellation of constructs in a wide range of cultural and educational contexts (Miele et al., 2024).

Of course, the associations are not perfect. There are times students' mastery goals are unrelated to their achievement (Hulleman et al., 2010; Senko, 2019). There are times external rewards do not undermine student interest (Cerasoli et al., 2014). And there are a variety of motivational nuances just beginning to be understood for marginalised students (e.g., Fong et al., 2019). But on the meta-analytic whole, the evidence for the associations amongst different forms of motivation and outcomes is compelling (Lazowski & Hulleman, 2016; Ryan et al., 2022). As such, it is important for researchers to promote the consistency of this constellation of findings because it represents a solid body of knowledge describing and predicting how different forms of student motivation are linked to students' cognitions, emotions, and achievement (Miele et al., 2024). This firm body of knowledge, however, is not necessarily reflected in teachers' beliefs about student motivation.

Teachers' Beliefs about Student Motivation

Buehl and Beck (2015) state that a main function of teachers' beliefs is to help teachers make sense of incoming information. For example, one teacher may view a quiet student as unmotivated; whereas, a different teacher may believe the same student is deeply engaged. In

these ways, teachers have beliefs related to the quantity, source, and stability of student motivation.

Quantity. Teachers often begin by simply determining if students are motivated or not (Daniels et al., 2018; Peterson et al., 2011). Overall, the literature suggests that teachers believe students are motivated more than that they are not. Teachers believe that students hold multiple goals (Hardré & Hennessey, 2013) and are effortful, engaged, and interested in content (Schwan, 2021). Sometimes, however, these beliefs may be based on teachers' knowledge of students' previous performance rather than an estimation of motivation itself (Lee & Reeve, 2012). Beliefs about the quantity of motivation have also been shown to vary by race. Kumar and Hamer (2013) noted that about 25% of their sample of pre-service teachers held stereotypical beliefs about minority students' motivation such as viewing school as less valuable and interesting than white students. Likewise, white teachers hold lower expectations for minority students' short-term outcomes like a specific classroom assessment (Flanagan et al., 2020) and long-term outcomes such as successfully completing a college degree (Papageorge et al., 2020). Given these differences in quantity, where do teachers believe motivation originates?

Source. Teachers believe that student motivation has many origins. In a cross-cultural qualitative study with 108 teachers of 15-year old students, Hufton and colleagues (2003) found that teachers in the US, UK, and Russia all believed student motivation is influenced by parents, the teacher, the content, rewards, leisure, and eventual employment. In a study with Canadian pre-service teachers, Daniels, Dueck, and Goegan (2020) found similar categories with pre-service teachers identifying external factors including the home and school environment as contributing to student motivation. Similar to these qualitatively reported sources of student motivation, the most direct measure of teachers' beliefs about the reasons why students are

unmotivated includes the following five domains: home factors, peer factors, relevance, aspirations, and personal factors (Hardré et al., 2008). Using Hardré and colleagues' (2008) scale, Schwan (2021) found that teachers most often believed students were unmotivated due to home and personal factors. This source is exacerbated for minority students with 70-80% of teachers believing that lack of parental value for education is a primary cause of struggles for minority students from low socio-economic backgrounds (DeCastro-Ambrosetti & Cho, 2005).

These teacher beliefs appear to be in opposition to what white and minority students identify as sources of their own low motivation. Research with Black students suggests that families tend to highly value education and provide a critical source of both internal and external motivation for students (Fries-Britt & Onuma, 2020; Griffin, 2006). Instead, minority students state that their internal and external forms of motivation must be sustained in the face of racism from teachers, peers, and the school system at large (Griffin, 2006), something confirmed by Black teachers (Duncan, 2022) but less often recognized by white teachers. Students report being unmotivated because of lack of relevance of the content and future utility (Schwan, 2021). Wiesman (2012) showed that teachers were nearly 25% more likely to believe that their characteristics were the primary source of motivation for students compared to students who were 20% more likely to believe their primary source of motivation is their own goals. With such breadth in sources of motivation, the extent to which each source is believed to be malleable also matters.

Malleability. Teachers generally believe student motivation is malleable (Hardré & Hennessey, 2013). In Hadré and Hennessey's (2013) multi-method study of 13 rural secondary school teachers, all but two participants had convergent quantitative and qualitative data showing they believed motivation was important, malleable, and could be changed by modifying the

classroom or applying direct intervention. The two teachers who disagreed still felt motivation was important to learning but "indicated in their multiple responses that they felt helpless to intervene" (p. 422). When teachers believe that student motivation is a fixed entity, it is associated with problematic outcomes for students. For example, students of STEM college instructors who were perceived as believing ability was a fixed entity reported less motivation, learning, and improvement, and experienced a racial achievement gap nearly twice that of instructors with a growth mindset (Canning et al., 2019).

Teachers' beliefs about the quantity, source, and malleability of student motivation are critically important in connection to the motivational supports they chose to use. As Hardré and Hennessey (2013) explain "teachers are more likely to invest in motivating students if they view motivation as a malleable characteristic which they can effectively change" (p. 413). The literature reviewed thus far suggests that indeed this is the case, and as such, we now turn our attention to the evidence-based literature on what motivational supports give rise to adaptive forms of students' motivation before addressing teachers' beliefs about such supports.

Motivational Supports

Research and Scholarly Perspectives

Just as the main theories of achievement motivation delineate adaptive and maladaptive forms of student motivation, so too do they offer recommendations to teachers on the types of motivational supports that reliably produce each form (Linnenbrink-Garcia et al., 2016; Patall & Zambrano, 2019). We have chosen to focus on the recommendations of Self-determination Theory (SDT) because there is a large body of evidence documenting the effectiveness of the recommendations and because of overlap with recommendations from other theories (Anderman & Leake, 2005). According to SDT, extrinsic forms of motivation can become internalized when

the three basic psychological needs (BPN) of autonomy, relatedness, and competence are satisfied rather than frustrated (Vansteenkiste et al., 2023). In an education context, *autonomy* refers to the degree to which students feel in control of their own behaviours and decisions. Satisfaction of autonomy involves a sense of volition and authenticity. *Relatedness* refers to social connections that exist amongst people within the classroom or school. When relatedness is satisfied, students will experience relationships as meaningful, caring, and warm. *Competence* has obvious relevance at school, but as a BPN it refers to a sense of being capable or efficacious rather than an objective level of accomplishment. When the need for competence is satisfied, students feel capable of learning and showing the knowledge and skills required at school.

Since its earliest iterations, SDT researchers have focused on six broad categories of practices that reliably support or thwart internal forms of motivation (e.g., Reeve, 2009; 2011; 2016; Reeve et al., 2022). First, internal forms of motivation are supported when teachers take students' perspectives rather than prioritising their own. Second, teachers can reduce the use of extrinsic rewards by vitalizing their students' inner motivational resources by knowing their students and making connections to their interests. Third, the provision of an intentional explanatory rationale appears to contribute to autonomous forms of motivation. The final three motivational supports unfold as teachers and students engage in the learning process together and encounter challenges. In these instances teachers who choose information rather than controlling language, acceptance of negative emotions rather than toxic optimism, and display patience rather than rush students, all set the stage for intrinsic forms of motivation. These broad categories continue to form the basis of policy and practice recommendations (Patall & Zambrano, 2019) and show overlap with recommended motivational supports from other theories (Linnenbrink et al., 2016). As just one example, achievement goal theory suggests that

mastery structures are created when teachers create interesting tasks, share authority with students, recognize growth, create productive student groupings, evaluate fairly, and provide sufficient time for learning (TARGET; Epstein, 1989; Khajavy et al., 2018). These recommendations are summarized in Figure 2 and supported by substantial meta-analytic evidence of effectiveness (Howard et al., 2024; Patall et al., 2008; Steingut et al., 2017). The evidence clearly delineates effective from ineffective motivational supports, however, teachers' beliefs about motivational supports have greater variety.

Teachers' Beliefs about Motivational Supports

We focus on teachers' beliefs about personal responsibility for student motivation and its link to motivational styles, knowledge about discrete practices, and confidence. Importantly, researchers have shown that these beliefs are shaped by the types of motivational supports teachers believe are accepted, effective, and efficient (Reeve et al., 2014) according to the eurocentric educational systems within which they work.

Personal responsibility for motivation. As reviewed above, teachers believe that there are many external sources of student motivation, and although their practices as teachers are one of those factors (Wiseman, 2012), that does not automatically mean teachers hold themselves personally responsible. The construct of teacher personal responsibility, as conceptualized by Lauermann and Karabenick (2013) consists of four distinct domains: achievement, relationships, student motivation, and teaching. Research shows that both practicing and pre-service teachers report significantly lower levels of responsibility for student motivation compared to the other three domains (Daniels et al., 2016; 2018; 2020; Lauermann & Karabenick, 2013). When asked directly to indicate the percentage for which they believe they are responsible for student motivation, on average pre-service teachers assumed 70% of the responsibility (range 0-100%;

Daniels et al., 2020) while practicing teachers assumed only 50% (Daniels, 2016). In other words, educators often grapple with sources of motivation that may seem beyond their direct influence and transcending their immediate control (Lauermann & Karabenick, 2013). Despite this low personal responsibility, researchers have found that teachers enact a general motivational style that is evident in the way they conduct their classrooms.

Motivating styles. According to Self-determination Theory, teachers' beliefs about their ability to influence student motivation manifest as distinct motivating styles (Reeve, 2009). Reeve and colleagues (2022) define motivational style as "interpersonal tone and face-to-face behavior teachers rely on when they try to motivate their students to engage in the learning activities they provide" (p. 27). Like students' intrinsic and extrinsic forms of motivation and satisfaction or frustration of basic psychological needs, motivating styles function along a continuum with a controlling style at one end and an autonomy-supportive style at the other (Reeve, 2009). A controlling style involves prescribing specific tasks, behaviors, or goals for students; whereas, an autonomy-supportive style involves a student-centered approach, where educators actively engage with the perspectives of their students.

In addition to being somewhat of a personal disposition (Reeve, 2009), at least four beliefs have been found to orient teachers towards a controlling or autonomy-supportive style (Reeve & Cheon, 2016; Reeve et al., 2014). First, motivating styles are influenced by teachers' beliefs about the effectiveness of the style. Research shows that when external observers rate teachers' motivating style, they view controlling actions as a sign of more competent teaching (Flink et al., 1990). Despite this, teachers themselves recognize that an autonomy-supportive style may be more effective than a controlling style (Reeve et al., 2014). If it was only about effectiveness, autonomy-supportive styles could be the norm, but effectiveness beliefs are

constrained by what is considered socially acceptable. In Western culture it is common practice to increase the size of rewards to increase motivation (Boggiano et al., 1987; Martinek et al., 2022) offering a justification for teachers' preferences for a controlling style (Reeve et al., 2022). Finally, teachers vary in the extent to which they believe a controlling or autonomy-supportive style is easy and realistic to implement in their classroom context. Because a controlling style often feels familiar, teachers can believe that it is easier than learning how to be autonomy-supportive. When teachers believe they themselves are controlled by the curriculum, administrators, or external accountability systems, they tend to become increasingly controlling in their motivational style (Katz & Shahar, 2015; Pelletier et al., 2002). Finally, teachers' beliefs that autonomous motivation is itself a desirable form of motivation predict their inclination towards a controlling or supporting style (Katz & Shahar, 2015). Because motivating styles are associated with specific practices, the final set of teacher beliefs pertinent to motivating students relate to their knowledge of and confidence in specific strategies.

Knowledge and confidence. Thirty years ago, Nolen and Nicholls (1994) suggested that teachers' beliefs about motivating students was a good starting point. Again. The purpose of their research was to "describe teachers' beliefs about strategies for motivating students and estimate the convergence between these beliefs and published recommendations by researchers" (p. 59). Nolen and Nicholls compiled a list of 40 strategies teachers may use to increase motivation when students lack interest and 33 strategies that could be used to maintain good student motivation. The lists combined common adaptive recommendations with coercive strategies that researchers do not recommend. Results of a factor analysis of the strategies showed that teachers scored items in ways that are consistent with the constructs promoted by researchers. For example, items related to motivating students through praise loaded together on one factor separate from

items related to using rewards or effort attributions. In terms of mean levels of beliefs, teachers' most strongly believed that showing interest, giving students responsibility, focusing on effort, promoting cooperation, creating stimulating tasks, and giving students choice were effective strategies to motivate students. Summing across their results, Nolen and Nicholls conclude that:

> if researchers find themselves suggesting strategies that teachers do not believe are effective, it might not be because teachers are ill informed. Our data show that they [teachers] make clear distinctions amongst types of strategies, and that their effectiveness ratings are, for the most part, already consistent with the theories we would "teach" them (p. 66).

Radil and colleagues (2023) came to similar conclusions that teachers' beliefs and natural strategies do not necessarily conflict with research-based recommendations, perhaps with the exception of rewards, which teachers view as a necessary and often effective practice (for recent neuroscience on the benefits of rewards see Hidi, 2016).

At the same time, however, teachers report believing they are underprepared to enact these types of strategies in their classrooms (Hardré & Sullivan, 2009), meaning that perhaps confidence is a more limiting factor than knowledge. For example, Daniels and colleagues (2016) found little concordance between pre-service teachers' responsibility for student motivation and selection of evidence-based practices. Similar associations exist for teaching efficacy, arguably one of the most common and important measures in teacher effectiveness (Klassen & Tze, 2014). It has been found that educators with strong efficacy beliefs are more likely to choose recommended practices such as setting high expectations, offering constructive feedback, and creating a climate conducive to intrinsic motivation (Burić & Kim, 2020). Similarly, teachers with high self-efficacy are more likely to implement differentiated instruction,

deliver timely and meaningful feedback, and adapt their teaching methods to meet the diverse needs of their students (Dixon et al., 2014).

The Need for Motivation Interventions

At this point it should be clear to the reader that there is a robust body of empirical literature largely showing that some forms of motivation are better for students than others and a complementary literature documenting the type of motivational supports that teachers can use to predictably create classrooms in which such motivation can thrive. It should also be clear that for many teachers their natural inclinations about motivation may be similar to researchers' recommendations. However, these natural inclinations both seem difficult to enact and somewhat superficially understood. For example, although many teachers espouse believing students can grow, the exclusionary focus on effort reveals a false growth mindset (Dweck & Yeager, 2019). Similarly, although teachers like the idea of providing students with choice, they are fearful that doing so will create chaos showing that the balance of structure is poorly understood (Patall & Zambrano, 2019). Finally, while pre-service teachers have good intentions about applying adaptive motivational supports such as creating mastery structures, they often are unable to follow through on those intentions in their career (Daniels, 2015). Evidence suggests teachers' beliefs about student motivation and motivational supports can be developed over time through mentorship, practical experiences, and continuous professional development or intervention. As such, we turn our attention to interventions designed to help nudge teacher beliefs towards evidence-based perspectives and practices.

In this section, we focus on two interventions that have shown promise in shifting teachers' beliefs about being responsible for student motivation (Daniels et al., 2021) and helping them become more autonomy-supportive (Reeve & Cheon, 2021). Specifically, we

review the Student Motivation and Responsible Teachers (SMaRT) intervention which focuses specifically on teachers' beliefs about being responsible for student motivation and the Autonomy-Supportive Intervention Program (ASIP) which focuses on shifting the types of motivational supports teachers use.

Student Motivation and Responsible Teachers (SMaRT)

In SMaRT, Daniels and her colleagues (2021) argued that for pre-service teachers to be primed to seriously learn about motivational supports, they had to first believe that student motivation is their responsibility. Some evidence for this position is accumulating in clinical psychology spaces where growth mindset interventions have been shown to help clients believe their conditions, such as anxiety, are malleable to change thereby readying them to fully engage in psychological intervention (Schroder, 2021). The beliefs portion of the SMaRT intervention was modelled after mindset interventions. Specifically, the treatment message was presented to participants as a mock professional article (Figure 3). The two-page article contained only truthful information based on surveys and interviews with teachers. This was considered a critical element because pre-service teachers are soon-to-be professionals who should not be deceived with fake examples or testimonies even as mindset interventions require "stealthy" messaging to minimize stigma and retain brevity (Yeager & Walton, 2011, p. 284). Also in keeping with recommendations, the article did not mention fixed mindset and made use of direct quotes from teachers and endorsements (Yeager et al., 2016). Compared to a control group, participants who read the treatment material and completed a reflection activity reported an increase in growth mindset about student motivation, a decrease in fixed mindset about student motivation, and increased personal responsibility after controlling for pretest levels of the beliefs (Daniels et al. 2021).

The beliefs treatment message was embedded in a fulsome online module that was designed for teachers to individually access (Daniels, 2017). The online resource starts with a video introduction from the researcher, the intention of which was to create a sense of connection between the participant and the researcher. Next, participants watch videos in which two teachers share their experiences with student motivation. The scripts for the videos were written by collaborating teachers to share their own perspectives layered with motivational language. One teacher describes how her personal responsibility for motivation is unaffected by external conditions while the other teacher describes her personal responsibility as having limits due to external constraints (Daniels et al., 2020). Participants have to indicate which video perspective they relate to more before receiving the treatment materials. The experimental study consisted of four conditions: beliefs only (as described here), practices only, combined beliefs and practices, and a control condition. Following each treatment, to consolidate the information, participants were asked to reflect on and apply the content to their own future teaching. Only the beliefs treatment functioned as expected. The researchers found no meaningful increase in pre-service teachers' endorsement of adaptive motivational supports. The authors offer several reasons to explain this non-significant change in motivational supports and suggest that free-standing interventions may be needed such as the autonomy-supportive intervention program (Reeve & Cheon, 2014; 2020).

Autonomy-supportive Intervention Program (ASIP)

According to Reeve and Cheon (2020), ASIP is a comprehensive program designed for teachers that combines videotaped demonstrations, coaching, role-playing/teaching simulations and small group discussions over three sessions. The first session is a three hour workshop that introduces what autonomy-supportive teaching looks like as well as provides empirical evidence

of the benefits that accompanies such practice. The second three hour workshop reviews video examples of autonomy-supportive practice before participants are coached through role-play activities. This gives teachers the opportunity to personalize the recommended strategies for their own classroom and students. Finally, the last ASIP session utilizes a two-hour group discussion that allows teachers to share their experience and any tips they may have acquired while implementing autonomy-supportive teaching strategies. ASIP has demonstrated to effectively improve the use of autonomy-supportive motivational supports. The effectiveness has been determined both by trained raters and by students who assess teachers autonomy vs controlling behaviour (Reeve & Cheon, 2014; 2021).

In explaining the success of ASIP, Reeve and Cheon (2014) focus on three elements of the intervention. First, ASIP provides teachers with new and practical strategies that motivate their students to engage in and learn from classroom activities. Second, by having time between sessions, teachers have the opportunity to witness their students' engagement improve as they try the autonomy-supportive practice taught in ASIP. In turn, these results increase teachers' sense of teaching efficacy so that they feel more confident in their ability to teach in an autonomy-supportive way. Third, ASIP helps teachers believe that autonomy-supportive practices are effective, easy to implement, and accepted by colleagues (Reeve & Cheon, 2016). Given the measurable gains noted for students associated with teachers' holding certain beliefs about student motivation and motivational supports, why does a more consistent set of beliefs across teachers generally remain elusive? We address this question next as we identify limitations of the current research and consider contemporary shifts in education that could have implications for research and theory on teachers' beliefs.

Current Omissions and Future Directions

As we think toward the future, research on teachers' beliefs about motivation will need to address three pressing issues. First, researchers will need to study the motivation beliefs of minority teachers. Second, researchers will need to consider how motivation theories and practices connect with critical theories that are salient in contemporary education. Third, researchers will need to look closely at how incorrect beliefs are perpetuated by systemic bias, preferences, and pressures and what is needed to bring about more lasting change.

Minority Teachers

In just one generation the percentage of white school-aged children in the United States has dropped from 80% to just over 50% (Musu-Gillette et al., 2016), meaning that "public schools will soon be the first social institution in the nation without a clear racial/ethnic majority group" in terms of students (Graham, 2020, p. 9). Although national statistics show that the teaching force is becoming more racially diverse, it is not matching the rate of student diversity. For example, in the United States it was estimated that in 2017-2018 79% of teachers were white down from 87% ten years earlier (Schaeffer, 2021). However, teachers from other racial groups have only increased by a few percentages over the same time frame (e.g., the largest increase was in Hispanic teachers from 3-9%). According to Statistics Canada (2023), a total of 487,680 visible minorities indicated they were teachers representing about 15% of the population even though more than 25% of Canadians identify as a member of a visible minority group. This means the most pressing direction for future research is to learn about motivation beliefs held by teachers of colour.

There are a few studies that do explicitly focus on Black teachers' beliefs about student motivation and motivational supports. Importantly, it is argued that these beliefs differ from white teachers because Black teachers have by necessity navigated a white dominant education

system that can be described as “bias-based spirit-murdering” (Williams, 2018, p. 4). Some research suggests that Black teachers are more likely to hold growth beliefs for all students (Blazar, 2021) and enact culturally-responsive teaching through establishing caring relationships with students and families, actively differentiating learning tasks, and managing student misbehavior in generous and proactive ways (Blazar, 2021). In turn, it seems that all students experience greater challenge and care and less control when learning from a Black compared to white teachers (Cherng & Halpin, 2016). The benefits of these beliefs are often most significant for racialized students. For example, Redding (2019) reviewed the effect of student-teacher racial matching and reported various benefits for students in part because their teachers had beliefs that allowed more positive interpretations of behaviours that white teachers do not accept. This can result in important indicators of sustained student motivation such higher test performance, better attendance, less disciplinary action, and increased effort. Given these striking benefits, calls to increase the diversity of the teaching profession should be unsurprising (White et al., 2020). Unfortunately, the same racialized institutional struggles Black teachers faced as students reduce their likelihood of staying in teaching (Benson et al., 2021).

New Directions for Theory

In addition to focusing specifically on the motivation beliefs of teachers of colour, research in the field of teachers’ beliefs needs to make gains in connecting longstanding motivation theories like self-determination theory with race-based and critical frameworks (DeCuir-Gunby, 2024; Kumar et al., 2018; Tan et al., 2021). According to Gay (2018), culturally responsive teachers use “the cultural knowledge, prior experiences, frames of reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them” (p. 31). In making connections between culturally responsive teaching

and motivation theories, Kumar and colleagues (2018) point out that the two both prioritise practices connected to making learning meaningful, building competence, supporting autonomy, and creating relationships. In other words, although the two approaches are often researched in silos, the principles have important similarities. By extension, it should be unsurprising that culturally responsive teaching benefits ethnically diverse students' academic motivation, interest in content, perceived competence, and learning (Aronson & Laughter, 2016) in many of the same ways as autonomy-supportive teaching. While there is strong evidence that white teachers are willing to learn to be autonomy supportive (Reeve, 2016), teachers struggle more with accepting critical theories (Aronson & Meyers, 2022). Although a pillar of critical race theory is to challenge dominant ideologies (DeCuir-Gunby, 2024), it is possible that dominant motivation theories are actually promoting similar beliefs and practices suggesting that a closer pairing of the two may be fruitful.

Belief Change

Finally, as we were writing this chapter, we noticed that the discrepancy between best-practices and teachers' beliefs about student motivation and motivational supports does not appear to be narrowing. Beliefs that students simply are or are not motivated, persist. As do findings that show teachers believe external motivation is an acceptable, effective, and efficient approach. These are beliefs that motivation researchers have been bringing empirical evidence to show as incorrect for decades. The time may have arrived for the field of teacher beliefs about student motivation and motivational supports to take a stronger stand on incorrect beliefs. Trevors (2024) defines an incorrect belief as "individuals' initial mental representations about some phenomenon that exists in reality that substantively deviate from the best available knowledge" (p. 291). It may be time for the field of teachers' beliefs to stand more firmly when

teachers hold beliefs about motivation that are incorrect or harmful. Reeve and Cheon (2021) take a similar position stating that although a teacher's motivating style "reflects his or her personal values and unique teaching circumstances…it further represents professional skill" (p. 14) meaning it is something that teacher education programs should take as seriously as curriculum and pedagogy. Advancing the idea of motivation as a professional skill can happen through research, policy statements, and adjustments to teacher education programs. Progress in this matter can be measured through international assessment such as the Teaching and Learning International Study (TALIS). TALIS asks teachers about their efficacy for classroom management. In both the 2013 and 2018 surveys, teachers had lowest scores on the item "I am confident I can motivate students who show low interest in course work" (Alberta Government, 2014; OECD, 2019), suggesting motivation is an international issue. At a more grass roots level, it will be important to empower teachers who hold beliefs that align with the empirical research to promote such beliefs within their schools and not be intimidated by conflicting views.

Conclusion

The consistency of results from 1994 (Nolen & Nicholls) to 2024 (Radil et al.) documenting what teachers naturally believe about student motivation and motivational supports is simultaneously shocking and unsurprising. We had hoped that changes in the diversity of students and new pedagogical approaches had created opportunities for teachers to arrive at new beliefs about student motivation and motivational supports. This seems not to be the case. Many things teachers believe about motivation agree with the research and other things do not. In other words, beliefs about motivation remain hard to change (Pajares, 1992). More than ever it seems clear that one reason for this is because beliefs about motivation are instantiated in educational cultures that value performance, rewards, and competition. Thus, as the field moves forward, we

invite researchers and teachers alike to have a bigger imagination for student motivation and motivational supports that moves away from longstanding narrowly focused reliance on external motivation and embraces motivation rooted in autonomy, relationships, and competence that may be a more natural fit with culturally responsive approaches to teaching and a profession diverse in both professionals and students.

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Figure 1.

Conceptual framework of teachers' beliefs about motivation and motivational supports

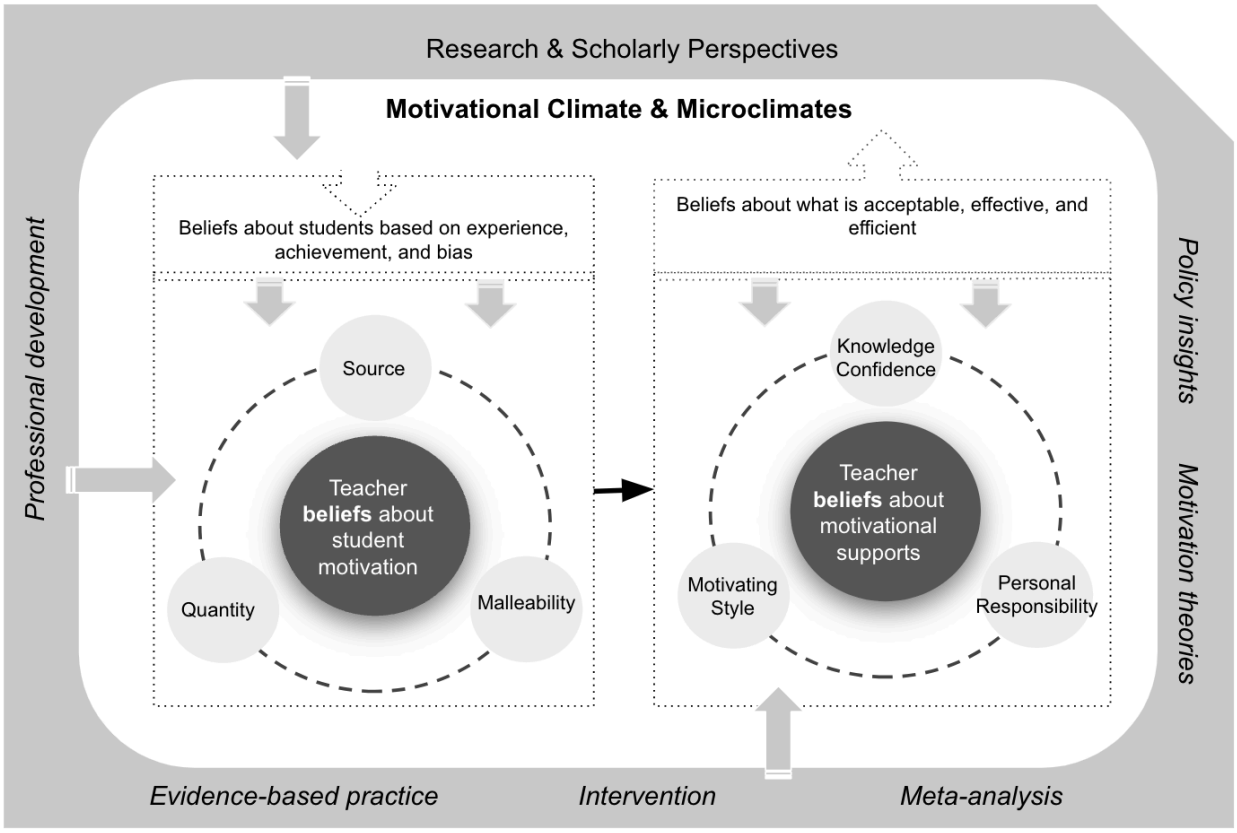

Figure 2.

Motivational supports by category and discrete practices

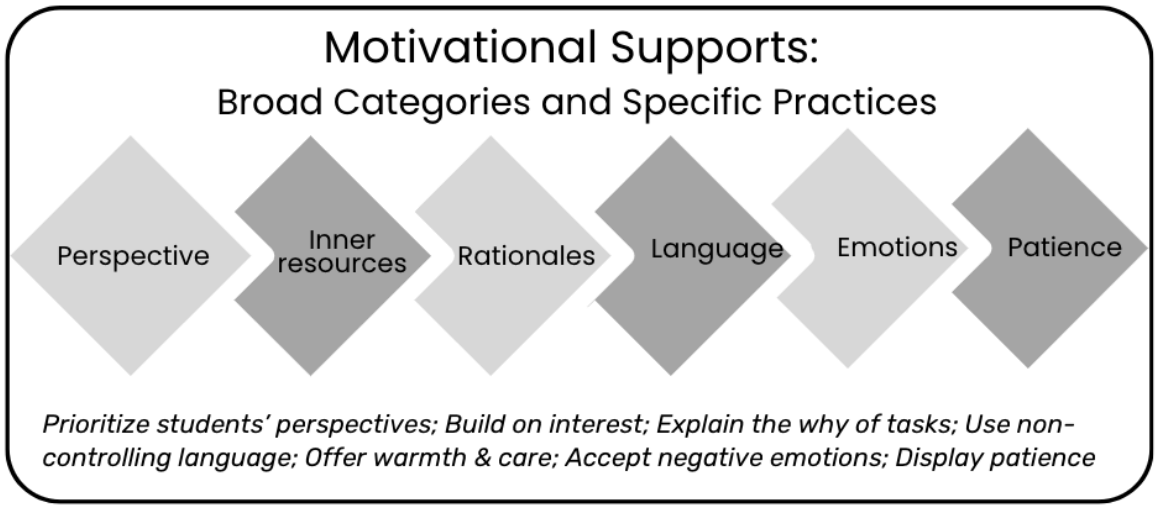

Figure 3.

Treatment Materials for Beliefs about Personal Responsibility for Student Motivation

STUDENT MOTIVATION

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Every teacher has likely encountered situations in which they ask themselves "why aren't my students motivated?" This highly personal question is completely understandable because motivation depends on the student, the teacher, and the learning environment. It may come as no surprise that motivation has been at the center of professional and research initiatives for decades now.

When asked to describe motivated students, teachers use phrases such as "not afraid to ask questions," "naturally curious," or "interested in their learning." When formally assessed using reliable measures of motivation, students with these characteristics tend to score high on what researchers call a "growth mindset".

teachers can enhance students' mindsets and motivation.

When students hold a growth mindset they believe that their abilities can grow and change with effort and support. In other words, they are able to overcome personal limitations and obstacles to become successful. Dr. Carol Dweck, world-renowned researcher of mindsets at Stanford University, has shown with decades of studies that growth mindsets are associated with better grades, more interest, persistence, and, most importantly, motivated students. In fact, these effects tend to be strongest for our students who need it the most – those from poor backgrounds, those in difficulty courses, and during tricky school transitions. As such teachers have been asking what's my role in mindsets?

The answer is becoming increasingly clear. One teacher from Edmonton, Alberta, with nearly 20 years experience sums it up like this:

"There was time when a lot of teachers felt that they were here to teach them [the students], not delight them. Those kinds of folks, they would lay out the curriculum, they would do their thing, and if a kid didn't get it, that was too bad for them. Those days are so far gone. I think that it's my job is to like care about whether my students are motivated or not. ...I I think it is the job. The job is teaching kids to be motivated."

Interestingly the empirical evidence agrees: Dweck and colleagues regularly show that teachers can enhance students' mindsets and motivation.

Research aside, a quick glance at teacher blogs, wikis, and pinterest reveals a plethora of posters, printables, read alouds, and videos to facilitate teachers in supporting students' growth mindsets. One teacher who participated in Dweck's research wrote her an email relishing in the motivation and success of her inner city students:

"The learning curve was outrageously steep. Like all new teachers I struggled. Then I became determined to keep a growth mindset about my own teaching abilities. I started to set small concrete goals for the students and for myself: 'this week, everyone will line up safely for the bathroom' or 'today, the green group will identify a triangle' and 'stop, breathe, and smile after every few sentence..

The class excelled at accomplishing these little goals, and slowly, our big goal of 'an amazing classroom with remarkable academic gains' started to materialize.

"[In one year], the students went from believing they were 'bad at math' to being the #1 4th-grade class in the state. 100% of them passed the state math test, with 90% of them earning the top score. In the Bronx as a whole, only 28% of 4th graders passed the state math test.

ACME

UNIVERSITY OF ALBERTA

"Bottom line, with the right mindset for ourselves as teachers – teaching is an amazing profession and an absolute privilege ... [But] if we don't believe in our own ability to do things to support our students' motivation, what reason do our students have to believe that they can succeed?"

One Canadian researcher committed to equipping teachers to support student motivation is Dr. Lia Daniels at the University of Alberta. She directs the The Alberta Consortium for Motivation and Emotion (ACME), a group that talks to both pre-service and practicing teachers regularly about their own mindsets and feelings of responsibility for student motivation.

Amongst pre-service and practicing teachers in Edmonton, beliefs about how much the abilities of a teacher can grow vary greatly. Interestingly, this belief didn't vary with years of teaching experience. Importantly, the more strongly teachers believed good teachers could be made the more efficacious they felt in terms of creating a motivating classroom for their students.

"sometimes it's just being aware of the tiniest, little things that we can do to support them"

Similar results have been found in the United States where Greg Gero, a school principal, showed in his dissertation work that teachers who had a growth mindset themselves were more likely to support students' mastery motivation and more open to opportunities for professional development.

In his review of Dweck's book, Bill Gates states that "Dweck's research [has] had a big impact on our thinking. In the years since [reading the book], Dweck and her research have helped my foundation colleagues and me understand more about the attitudes and habits that allow some students to persevere in school despite big challenges."

Famous actor Will Smith has also articulated how a growth mindset was key in his own rise to success with statements such as "skill is only developed with hours and hours and hours of beating on your craft" and "your talent is going to fail you if you don't believe you can get better every single day."

Similar statements are also made by teachers and principles about students in their classrooms. For example, Alice, a teacher in Edmonton, Alberta with 30 years of experience said:

Students who are motivated and have a growth mindset, take initiative, they move forward, and then maybe take a step back to analyze things, they pick it up and work with it again. and really there is no limit to this type of student.

For us teachers, to support them with this mindset, we can do so much and sometimes it's just being aware of the tiniest, little things that we can do to support them.

Overall, it seems that both professional experience and empirical evidence are pointing to an answer to the question about student motivation and it teachers are central to that answer because, yes, teachers can enhance students' growth mindsets and motivation.