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School of Education  
Center for Engagement-Driven  
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THE 2022-2023 STATE OF ENGAGEMENT REPORT:

# Teachers' Practices of Engaging Students



STATE OF ENGAGEMENT • 2022–2023

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## Author Note

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*In completing the survey, I realized there were more practices I wanted to incorporate, and others I would like to use less. Part of why they are used is just because that was how I was taught. Without collaboration with an experienced PLC [professional learning community], you might not be aware of things you can do to make the topic more relatable and hands-on. My first year, I just repeated the explore activities and exercises in their textbooks. We don't necessarily know how to do things differently until we see it done successfully, or ask questions because we realize that we are struggling.*

- 7th grade math teacher

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# Abstract

Despite the importance of engagement for learning, teachers routinely report student engagement is an ongoing concern. Fortunately, an extensive assortment of educational strategies that support or thwart engagement through various motivational mechanisms (e.g., autonomy, competence, and relatedness) have been identified. To better understand teachers' methods of student engagement, an online survey with a convenience sample of over 1,400 full-time United States teachers from all 50 states was conducted in May and June of 2022 with the purpose of cataloging: 1) the extent to which full-time United States teachers report exposing students to engaging practices, 2) their beliefs about the importance of various practices, 3) their perceptions of the factors affecting practice use, and 4) their perceptions of engagement among their students. Results suggested teachers reported very frequently using many, but not all, engaging practices in 2022, with elementary school teachers generally reporting higher use than secondary school teachers, and science and math teachers reporting somewhat lower use. Of concern, practices that thwart engagement (e.g., control and suppression, busywork, emphasis on grades) were reported to be used regularly in 2022. Results suggested public school teachers and teachers serving diverse learners reported using supportive practices more frequently than counterparts at private schools or those serving fewer diverse learners. Teachers reported practice effectiveness was most influential and having training was least influential in determining which practices they used. Consistent with patterns for the reported use of engaging practices, secondary and science teachers perceived their students to be less engaged relative to other groups of teachers. All supportive practices were positively correlated with teacher perceptions of students' engagement; teacher control and suppression were negatively correlated. The implications for instructional practice are discussed.

# Executive Summary

For learning to occur, students need to be motivated and engaged in the learning process (Linnenbrink-Garcia et al., 2016). Despite the central role engagement plays in learning, teachers routinely report student engagement is an ongoing concern that has only increased in the wake of the COVID-19 global pandemic (EdWeek Research Center, 2021). Fortunately, educational and psychological research have identified an extensive assortment of educational strategies that support or thwart motivation and engagement through a variety of mechanisms, including through students' experiences of autonomy, competence, and relatedness (Patall et al., 2022a).

With that in mind, researchers from the Rossier School of Education at the University of Southern California (USC) and GoGuardian collaborated to conduct the 2022–2023 State of Engagement Report, an online teacher survey distributed nationally in late May through June of 2022 with the purpose of cataloging: 1) the extent to which full-time United States teachers report exposing students to engaging practices, 2) their beliefs about the importance of various practices, 3) their perceptions of the factors affecting practice use, and 4) their perceptions of engagement among their students. A convenience sample of over 1,400 elementary and secondary teacher respondents from all 50 states was sourced through multiple GoGuardian channels. In order for our results to better represent teachers in the United States, raking was used to weight responses according to national statistics on the demographic characteristics of full-time United States teachers. Results suggested ten key takeaways.

1. Teachers reported frequently using many engaging practices in 2022. In particular, 87% of teachers or more reported using caring and relationship building, high expectation setting, perspective taking, personally relevant rationales, and enthusiasm expression often or very often. However, teachers reported using other engagement-supportive practices less often. For example, only between 48% and 62% of teachers reported using culturally relevant teaching, provision of choice, incorporating student interests and goals into learning activities, and contextualized teaching practices often, with a portion of teachers rarely or never using these practices. Of concern, practices that thwart engagement were used somewhat regularly in 2022, with no less than 45% of teachers reporting they used control or suppression of student perspectives, assigned busywork, or emphasized grades at least sometimes.
2. Elementary-level teachers reported using seven of the 15 supportive practices (incorporating student interests, culturally relevant teaching, storytelling, individualized challenge, teacher caring, student collaboration, and community building) to a greater extent in 2022 than secondary level teachers, and reported using an emphasis on grades less than secondary school teachers.
3. Overall, math and science teachers tended to report using supportive practices less often compared to other groups of teachers in 2022. The one exception to this pattern was that science teachers used more student collaboration.
4. There were limited differences in teachers' reported practice use or attitudes between public and private school teachers, or depending on the characteristics of the students teachers served. However, the differences that did emerge generally suggested supportive practices occurred more at public schools than private schools, and among teachers with more, compared to fewer, diverse learners. For example, public school teachers reported providing more choices and informational feedback, as well as using less control and suppression of student perspectives than private school

<sup>1</sup>Organizational aspects of this research were supported by USC Rossier Center EDGE.

teachers. Likewise, teachers who served more diverse learners reported using more culturally relevant teaching, personally relevant rationales, informational feedback, incorporation of student interests, and self-regulation instruction than teachers who served fewer diverse learners.

5. There were also limited differences in teachers' reported use of engaging teaching practices depending on the characteristics of the teachers themselves. The few differences that were found suggested women reported using more supportive and less thwarting practices than men in 2022. Findings were mixed based on teachers' age and experience.
6. Teachers believed that enthusiasm, high expectations, and practices that bring about relatedness or focus on students' interests and perspectives were among the most important in 2021–2022, and will continue to be important in 2022–2023.
7. Teachers reported the most influential factors impacting their use of various engagement-relevant practices were: the effectiveness of the practice, their familiarity with the practice, and the extent to which the practice interferes with their current routine. Training (e.g., professional development) was perceived to be the least influential factor.
8. Eighty-two percent of teachers perceived their students to be at least sometimes behaviorally engaged (e.g., being attentive, putting in effort, participating), and 98% of teachers perceived students to be at least sometimes agentic engaged (e.g., offering input and collaborating to influence instruction and learning). Consistent with the pattern of teachers' reported use of engaging practices varying by school level and subject, secondary and science teachers perceived their students to be less engaged relative to other groups of teachers.
9. All engagement-supportive practices were positively correlated with teacher perceptions of students' behavioral and agentic engagement. In other words, teachers who reported using more engagement-supportive teaching strategies also reported higher levels of student engagement. The magnitude of the correlations with supportive practices ranged from 0.09 to 0.37. Results also suggested teacher

control and suppression of student perspectives was significantly related to lower engagement among students, a concerning finding given 47% of teachers report using this practice at least sometimes.

10. Of all the engagement-supportive teacher strategies, expressing enthusiasm and soliciting student perspectives and discussion were the most strongly correlated with teachers' reports of both behavioral and agentic engagement among their students. Providing opportunities for student collaboration and choice were also among the strongest correlates of behavioral engagement, and teacher caring or relationship-building and incorporating student interests and goals into learning activities were among the strongest correlates of agentic engagement. Practices designed to support engagement via students' experience of autonomy emerged as particularly important at the middle school level. Of note, some of the practices most highly correlated with engagement (e.g., provision of choice and incorporating students' interests) were also among the supportive practices teachers reported using relatively less often.

Clearly, many teachers are using a wide array of motivating strategies to help engage students. Taken together with prior research, results underscore opportunities for teachers across many contexts, particularly at the secondary level, to further support students' engagement by incorporating more engaging practices and avoiding thwarting practices.

# Introduction

Exposure to instruction is an important but often insufficient catalyst for learning; often, for learning to occur, students need to be motivated and engaged in the learning process (Linnenbrink-Garcia & Patall, 2015; Lei et al., 2018; Jang et al., 2012). Teachers routinely report student engagement in the classroom is a concern (Guthrie et al., 2012). For many teachers, concerns about student engagement only increased in the wake of the disruption to teacher and student lives as a result of the COVID-19 global pandemic in mid-March 2020 (EdWeek Research Center, 2021; U.S. Department of Education, 2021). Even before the pandemic, 30–70% of secondary students reported being disengaged from school based on national survey results of close to 1 million U.S. students (Gallup Student Poll, 2016), with 50% of students and 88% of teachers saying students are less motivated to do their best work in 2020 compared to prior to the pandemic (EdWeek Research Center, 2021).

***Fortunately, student engagement, and in turn, achievement, can be cultivated in the classroom with the right contextual support (Tao et al., 2022).***

Educational and psychological research have identified an extensive assortment of educational approaches and strategies that support and thwart motivation and engagement through a variety of mechanisms, including through students' experiences of autonomy, competence, and relatedness (Patall et al., 2022a; Linnenbrink-Garcia et al., 2016; Reeve, 2009).

With that in mind, we conducted an online teacher survey in late May through June of 2022 with the purpose of cataloging the extent to which United States teachers report exposing students to engaging strategies and perceive their students to be engaged. A second purpose of this survey was to examine teachers' beliefs about which practices are most important, and the factors contributing to why they use some practices more or less. We investigated the following research questions.

1. To what extent did teachers in the United States use various practices that support or thwart engagement in 2022?
2. Which of these practices do teachers in the United States believe were most important during the 2021–2022 school year, and which do they anticipate will be most important in the future (the 2022–2023 school year)?
3. To what extent do teachers in the United States believe various factors (e.g., time, resources, effectiveness, etc.) contributed to why they used some practices more or less?
4. To what extent are teachers' reported use of practices related to teacher perceptions of student engagement in 2022?

We begin this report with a brief overview of the motivation theory and research that guided the current investigation and briefly discuss practices that can be integrated into instruction to support student engagement. We then report on the methods and results for the current investigation, and conclude with a discussion of how we interpret the results and their significance for stakeholders.



# The Fundamentals of Student Engagement

Broadly, **student engagement** in the classroom is defined by students' involvement in tasks or activities (Fredricks et al., 2004). It is an important mechanism through which students make academic progress, as engagement is predictive of learning and achievement (e.g., Jang et al., 2012; Ladd & Dinella, 2009; Skinner et al., 2009) and disengagement is linked with poor school outcomes (e.g., Alexander, Entwisle, & Horsey, 1997; Finn & Rock, 1997; Marks 2000; Voelkl 1997).

Engagement is not a narrow construct. It is multidimensional, including **behavioral** (e.g., attention, effort, participation), **emotional** (e.g., positive affect, interest, enjoyment), **cognitive** (e.g., use of learning strategies and regulation), and **agentic** components (e.g., offering input and collaborating to influence instruction and learning) (e.g., Fredricks et al., 2004; Reeve, 2013; Sinatra et al., 2015). From the perspective of other people, including teachers or peers, a student's behavioral and agentic engagement are most directly observable, while emotional and cognitive engagement reflect more internal experiences. As one educator who participated in the 2020 State of Engagement report (Aguilar et al., 2020) said: "Engagement can be hard to describe, but you know it when you see it. You can just feel it."

The quality of students' engagement can vary from one class to another, from one day to the next, or even one moment to the next. In one class, students may be attentive and interested, but in another, the same students may put forth little effort and feel bored. This variation is influenced by the motivational support students receive from teachers (Linnenbrink-Garcia et al., 2016; Patall et al., 2022a). Environments and teacher practices that catalyze students' internal motivational resources support student engagement (e.g., Reeve, 2009).

## **student engagement**

*students' involvement in tasks or activities*

## **behavioral engagement**

*students' involvement in classroom tasks in terms of their attention, effort, or participation*

## **emotional engagement**

*students' involvement in classroom tasks in terms of their positive affect, interest, or enjoyment*

## **cognitive engagement**

*students' involvement in classroom tasks in terms of their use of learning strategies and self-regulation*

## **agentic engagement**

*students' involvement in classroom tasks in the form of offering input and collaborating with the teacher or others to influence instruction, motivation, and learning*

According to **self-determination theory**, a macro theory of human motivation, these internal sources of motivation can be boiled down to three fundamental psychological needs all students (and people) have for **autonomy**, **competence**, and **relatedness**; these needs underlie motivation, engagement, and well-being (Ryan & Deci, 2000). That is, students thrive when they feel: their behavior emanates from an understanding of self (i.e., autonomy); successful in interacting with the environment (i.e. competence); and connected with other individuals (i.e., relatedness) (e.g., Jang et al., 2016). Through their instructional practice, teachers can support, thwart, or be apathetic to those needs and motivational resources, and this has consequences for student engagement (Patall et al., 2022a). Beyond this basic tenet of self-determination theory, numerous other motivation theories also emphasize the importance of supporting students' experiences of autonomy, beliefs about competence, and connection to others as a means to enhance various forms of motivation, engagement, and learning. For example, the importance of supporting competence beliefs is highlighted in the emphasis on self-efficacy in social-cognitive theory (Bandura, 1997; Schunk & DiBenedetto, 2020) and achievement expectancies in expectancy-value theory (Eccles & Wigfield, 2020), as well as in mindset theory (Dweck & Molden, 2017), achievement goal theory (e.g., Urdan & Kaplan, 2020), attribution theory (e.g., Graham & Taylor, 2016), goal-setting theory (Locke & Latham, 2002), and academic self-concept theories (Marsh & Martin, 2011). The importance of experiencing autonomy, and the corresponding personal values and interests it reflects, is emphasized in social cognitive theory, which sees students as agents capable of shaping their learning environments for their own benefit (Bandura, 1997), and in developmental theories that identify establishing autonomy as a key developmental task (e.g., Hill & Holmbeck, 1986). Likewise, it is seen in the importance attributed to various forms of personal value for determining behavior in expectancy-value theory (e.g., Eccles & Wigfield, 2020), in the emphasis on interest for learning in interest theories (e.g., Renninger & Hidi, 2020), and in the significance of tapping culturally meaningful experiences according to culturally relevant and responsive education theories (e.g., Aronson & Laughter, 2016).

### **self-determination theory**

*a macro theory of human motivation that posits that innate psychological needs for autonomy, competence, and relatedness underlie people's motivation, engagement, and well-being*

### **need for autonomy**

*need to feel behavior emanates from an understanding of self*

### **need for competence**

*need to feel successful in interacting with the environment*

### **need for relatedness**

*need to feel connected with other individuals*

Finally, the fundamental importance of relatedness is emphasized in developmental and social psychological theories of attachment (e.g., Ainsworth & Bowlby, 1991) and the belongingness need (e.g., Baumeister & Leary, 1995), both of which assert humans have an innate and pervasive drive to form and maintain positive interpersonal relationships, and that drive — and the resulting connections — influence many areas of functioning.

## Classroom Practices That Support Student Engagement

Motivation theories and their corresponding empirical research have led to a long list of promising **engagement-supportive practices** and motivating approaches (see Patall et al., 2022a for a review).

*Teachers can support autonomy, as well as interest and value, by offering choices, encouraging students to work in their own way, soliciting students' perspectives, and attempting to structure course activities around students' interests when possible.*

They can help students feel they want to engage by contextualizing instruction to make it meaningful to students, providing personally relevant rationales (or encouraging students to generate their own rationales) to explain the importance of even “boring” course activities, or by expressing enthusiasm about teaching and learning (e.g., Keller et al., 2014; L'Heureux et al., 2022; Lepper & Henderlong, 2000; Patall & Zambrano, 2019; Reeve, 2009; Reeve & Jang, 2006). Building on multicultural theories of education, teachers can also support autonomy, interest, and value by drawing on students culturally- or community-informed experiences in learning activities, or using storytelling to illustrate the personal relevance of content to students' lives (e.g., Gay, 2002; Ladson-Billings & Tate, 1995; MacLean & Wason-Ellam, 2006; Szurmak & Thuna, 2013). Longitudinal, experimental, descriptive, and qualitative evidence converge to suggest these practices predict enhanced autonomy, interest, value, and

### **engagement-supportive practices**

*Strategies teachers can use in their instruction to intentionally enhance the motivation and engagement of students. A variety of practices exist. Practices may support engagement through various or multiple motivational mechanisms, including by supporting students' feelings of autonomy, competence, and relatedness.*

engagement, with many also supporting competence beliefs and feelings of relatedness, too (e.g., Aronson & Laughter, 2016; Byrd, 2016; Cheon, Reeve, & Moon, 2012; Hulleman & Harackiewicz, 2009; Gaspard et al., 2015; Jang et al., 2016; Keller et al., 2014; Patall et al., 2017; 2018a; Patall & Zambrano, 2019; Reeve et al., 2004). For example, in a longitudinal experience sampling study, Patall and colleagues (2017; 2018a) found urban high school students experienced an increase in their autonomy, autonomous motivation, and overall engagement on days when they perceived that their science teachers provided more choices and rationales, were more considerate of their perspectives, or structured activities around their interests or preferences more than usual. Similarly, Parker and colleagues (2021) found teacher autonomy support, broadly defined by multiple practices, predicted Black high school students' agentic behavior, and in turn, their overall engagement in class.

Teachers can support student beliefs about competence (and willingness to put forth effort) by setting up a predictable context in which students can successfully navigate the learning environment and make progress in their learning goals (e.g., Jang, Reeve, & Deci, 2010).

***Students feel most efficacious and competent when they have past experiences of success, have seen peers similar to themselves succeed, understand others have confidence in their ability to be successful, and when their emotional and physiological state reflects positive emotions or well-being and low levels of anxiety or stress (e.g., Bandura, 1997).***

Most generally, emphasizing messages, tasks, or evaluations that convey that ability is malleable, and therefore, one should put forth effort and accept mistakes in the process, provides the foundation on which students can maintain a sense of competence even in the face of obstacles (e.g. Ames, 1992; Good, Aronson, & Inzlicht, 2003; Meece et al., 2006; Mueller & Dweck, 1998; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Yeager et al., 2019). More specifically, organizing the classroom with predictable routines or procedures, clearly expressing specific, high (but realistic)

expectations or goals, and regularly providing feedback rich with information about current or continuing progress are central to a well-structured classroom in which students believe they can academically succeed (Aelterman et al., 2019; Muenks et al., 2018; Skinner & Belmont, 1993). Teaching students strategies for regulating their learning also strengthens competence beliefs (Pintrich, 2004). Moreover, educators can support students' competence beliefs with challenged-aligned tasks designed to slightly exceed students' existing skills (Csikszentmihalyi, 1990; Vygotsky, 1978), incrementally increasing in challenge over time, and by providing opportunities for discussion and student responding to scaffold progress (Gordon & Bridgall, 2006; Hmelo-Silver et al., 2007). Evidence supports the use of these strategies to enhance engagement (e.g., Archambault et al., 2020; Jang et al., 2010; Meece et al., 2006; Sierens et al., 2009; Skinner & Belmont, 1993; Skinner et al., 2008; Tessier et al., 2010; Yeager et al., 2019; 2014). For example, Skinner and colleagues (e.g., Skinner & Belmont, 1993; Skinner et al., 2008) found elementary and middle school students who experienced their teachers as providing clear expectations, contingent responses, strategic help, and adjusted teaching strategies earlier in the school year were more interested, effortful, and persistent later in the school year. Archambault and colleagues (2020) found providing instruction on self-regulated learning strategies predicted behavioral engagement among low socioeconomic status elementary school students when paired with autonomy support.

It is often apparent to students when teachers do not challenge them, have low expectations for them, or provide an excessive amount of teacher-dominated scaffolding (Shumow & Schmidt, 2014). They often interpret these as signs that the teacher is not confident about their ability to be successful (Rattan et al., 2012). While these instructional features can undermine all students' competence beliefs, and in turn, their engagement, they can be particularly problematic for students who routinely contend with negative stereotypes about their ability, including Black and Latino students or women in science and math classes (e.g., Chen & Weseley, 2011; Lazarides & Watt, 2015). By the same token, informational feedback that explicitly conveys confidence in students as justification for the feedback may be particularly effective for marginalized students. For example, Yeager et al.

(2014) found middle schoolers who received critical feedback paired with confidence in the student's ability to meet high expectations were more likely to revise their work and later had higher overall achievement, with the strongest effects for Black students who reported greater mistrust in school.

Belonging is important for all students (e.g., Ryan & Deci, 2017; Roorda et al., 2011). However, students of color are often more prone to lacking feelings of belonging in academic settings (e.g., Walton & Cohen, 2007) due to experiences with racism and discriminatory school disciplinary practices (e.g., Bottiani et al., 2017). As a result, teacher practices that support relatedness among students of color are particularly important (e.g., Gray et al., 2018).

***Correlational and qualitative research suggest some of the key practices teachers can use to support relatedness and students' sense of belonging include intentionally building relationships with students based on care and respect (Anderman, 2003; Ellerbrook et al., 2014; Kiefer et al., 2015; Patrick et al., 2007; Roorda et al., 2011), creating opportunities for peer teaching or group work so students can connect with each other (Benware & Deci, 1984; Keyes, 2019; Isaac et al., 1999; Patrick et al., 2007; Johnson & Johnson, 2009), and encouraging a sense of community and shared responsibility among peers within a classroom (Anderman, 2003; Furrer & Skinner, 2003; Kiefer et al., 2015; Patrick et al., 2007; Wentzel et al., 2010).***

Additionally, most of the previously discussed autonomy and competence supportive practices also enhance feelings of belonging (e.g., Ryan & Deci, 2017). In fact, the interconnected nature of experiences of autonomy, competence, and relatedness mean most of the practices discussed support engagement via primary and secondary relationships with all three psychological needs.

Finally, despite good intentions, some teacher practices run the risk of undermining students' motivation and engagement by thwarting students' experiences of autonomy, competence beliefs, or feelings of relatedness and belonging (Reeve, 2009; Ames, 1992). We highlight here just a few particularly common

### **engagement-thwarting practices**

*Strategies teachers may use in their instruction that diminish the motivation and engagement of students. A variety of thwarting practices exist. Practices may thwart engagement through various or multiple motivational mechanisms, including by thwarting students' feelings of autonomy, competence, and relatedness.*

**engagement-thwarting practices.** Extensive evidence suggests approaches to teaching that emphasize pressure and coercion in order to elicit desired student behaviors, including the use of commands, controlling rationales, suppression of student opinions, forcing meaningless activities or busywork, and rewards and threats that pressure students to think, feel, or behave in specific teacher-determined ways, tend to undermine experiences of autonomy, and in turn, engagement (e.g., Assor et al., 2002; Jang et al., 2016; Patall et al., 2017, 2018a, Reeve, 2009). Similarly, evidence suggests messages, evaluation, and recognition practices that emphasize the importance of grades or relative ability (e.g., grading on a curve) can lead students to focus on demonstrating rather than developing their competence as a key goal of school, leaving students vulnerable to disengagement when they inevitably face obstacles (e.g., Ames, 1992; Koenka et al., 2021; Lau & Nie, 2008; Mueller & Dweck, 1998). These practices not only thwart autonomy and competence but can also thwart students' experiences of relatedness or belonging.

## Student Engagement and Teacher Practice Dilemmas

Theory and research on motivation and engagement in education is quite extensive in its identification of promising practices and their links with students' motivation, engagement, and learning outcomes. However, less is known about the current state of reported use of engagement-relevant practices among teachers in the United States, the extent to which self-reported use corresponds with teachers' perceptions of their students' engagement, or teachers' beliefs about the importance of various practices and reasons affecting their use of such practices. We also know little about the current extent to which the use of engagement-relevant practices vary by characteristics of schools and classrooms, the students served, and the teachers themselves in the United States. Nevertheless, several distressing patterns routinely identified in education research make cataloging current variations in teachers' reported practice critical.

First, a concerning pattern consistently found in education research is that student motivation and engagement in school,

across a variety of indicators, decline across grade levels (Fredricks & Eccles, 2002; Jacobs et al., 2002; Lepper et al., 2005; Wang & Eccles, 2012). Given evidence that declines happen only during the school year (Shim, Ryan, & Anderson, 2008), social scientists routinely point to the school environment and lack of fit between students' increasing motivational needs for autonomy, competence, and relatedness with teaching practices (e.g., Epstein & McPartland, 1976; Eccles et al., 1993; Wigfield et al., 2006). Influential research on this stage-environment fit perspective from the 1980s and 1990s suggested that even as students' motivational needs increase, middle and high school teachers foster fewer personal connections, provide fewer opportunities for student decisions, emphasize more competition, exert more control, and provide less challenging work compared to elementary school teachers (Eccles et al., 1993; Feldlaufer, Midgley, & Eccles, 1988; Midgley, Feldlaufer, & Eccles, 1989; Midgley & Feldlaufer, 1987; Simmons & Blythe, 1987). Since this early work, others have made similar observations (e.g., Barber & Olsen, 2004; Katz et al., 2009; Larson, 2000; Lepper & Henderlong, 2000; Pianta & Allen, 2008; Roeser et al., 1998; Wang, 2009). However, there is limited recent evidence on the extent to which teachers across the United States widely use various specific motivating and engaging strategies in their instruction, or the extent to which the use of engaging strategies systematically varies across school levels.

Second, persistent racial and income disparities in measures of academic success (e.g., Magnuson & Waldfogel, 2008; McDonough, 2015; Reardon, 2013) that widen across grade levels (Reardon, Robinson-Cimpian, & Weathers, 2015) remain a pressing concern. A history of racism and social stratification has resulted in restricted access to a wide-array of high-quality educational inputs for Black, Hispanic/Latinx, and low-income students. Research has documented various ways access to high-quality inputs varies (Darling-Hammond, 1995; 2005; Hill, 2007; Krei, 1998, Goldhaber, Lavery, & Theobald, 2015; Lankford, Loeb, & Wyckoff, 2002; Nye, Konstantopoulos, & Hedges, 2004). For example, students from these groups often have limited access to highly-qualified and credentialed teachers (Darling-Hammond, 1995; 2005; Krei, 1998, Lankford, Loeb, & Wyckoff, 2002), are disproportionately exposed to teachers who have less subject-specific knowledge (Hill, 2007), and have unequal access to

teachers that demonstrably improve student achievement (i.e., Goldhaber, Lavery, & Theobald, 2015; Nye, Konstantopoulos, & Hedges, 2004). Compared to their white and higher-income peers, evidence also suggests Black, Hispanic/Latinx, and low-income students experience less positive motivational school contexts (e.g., Murdock, 1999; Solomon, Battistich, & Hom, 1996), including lower teacher expectations (e.g., Harber, 1998; Harber et al., 2012), poorer quality feedback (e.g., Yeager et al., 2017), harsher disciplinary action (e.g., Gregory et al., 2010; Okonofua & Eberhardt, 2015), and less positive student-teacher relationships (e.g., Farrell, 1990; Gray et al., 2018; Murdock, 1999). The current study builds on this past research to examine the extent to which teachers across the United States vary in their reported use of an assortment of the most central specific motivating and engaging strategies by the demographics of students they serve.

Third, engaging students in science, technology, engineering, and mathematics (STEM) continues to remain a significant challenge to educators. The national and global market demand for workers with STEM knowledge and skills has grown, along with the threat that other nations will surpass the United States in STEM innovation and production (National Science Board, 2018). However, the challenge of enhancing students' engagement in science is not easily met. Although students express value for science outside the school context (e.g., Osborne et al., 2003), evidence also consistently indicates declines in students' motivation and engagement for studying science in school are particularly steep relative to other domains and reach a low point in high school (e.g. Gottfried et al., 2001; 2009; Potvin & Hasni, 2014). This pattern is particularly pernicious for women and non-Asian students of color (Legewie & DiPrete, 2012; Patali et al., 2018b; Sadler et al., 2012; Osborne et al., 2003). At the college level, the percentage of students studying and earning degrees in nearly all STEM fields has remained stable or declined over time (Maltese & Tai, 2011; Organization for Economic Co-operation and Development, 2006). While we know a great deal about the practices that support student motivation in science and the disparities across groups (e.g., Patali et al., 2018a; 2018b), less is known about the extent to which teachers in the United States use various specific motivating strategies in science, math, and other subject domains.

***The current study contributes to our understanding of this declining engagement in science by focusing on its classroom antecedents and examining the extent to which teachers across the United States vary in their reported use of specific motivating and engaging strategies depending on subject domain.***

Beyond these key issues, as we attempt to identify areas of strength and opportunities for improvement, a variety of other related factors are likely to be important in the effort to better understand the extent to which teachers in the United States use core motivational strategies in their classrooms. These factors include the type of school (private and public), the gender of the teacher, the age and experience of the teacher, and the linguistic/immigration background of the students they serve. For example, heightened state and federal regulations of curriculum and practice may lead to different motivation practices across public and private schools. Additionally, teaching remains an overwhelmingly woman-dominated field, with only 24% of United States public school teachers being men (NCES, 2022). Stereotypes of women as agreeable, nurturing, and communal and men as agentic and competence-focused may lead to differences in the use of various motivational strategies across teacher gender (e.g., Sczesny et al., 2019). Greater experience may be associated with greater use of many motivational strategies for engaging students, as more experienced teachers may have greater capacity for incorporating motivational strategies into their instruction provided they maintain high levels of motivation (and low levels of burnout). Alternatively, the more recent training experienced by younger teachers may be associated with the greater use of many motivational strategies given the ever-evolving state of applied motivation research, and its incorporation into teacher training programs. Finally, students who are English language learners, who often come from immigrant families, may face similar challenges to that of students of color and low-income students. As such, similar variation in teacher practices might be associated with the extent to which teachers serve English language learners. An investigation into the extent to which these factors may relate to teachers' reported use of strategies that are supportive or thwarting of engagement is warranted.



# The Current Investigation

To better understand the extent to which teachers in the United States expose students to engaging practices, we conducted an online teacher survey in late May through June of 2022 to catalog teachers' self-reported use of key motivational strategies, breaking down use by various factors, including school level; racial, income, and linguistic characteristics of the students served; subject; type of school; and teacher gender, age, and experience. Moreover, we explored whether self-reported engaging practice is correlated with teachers' perceptions of their students' engagement as an opportunity to validate the existing research on promising motivating practices (e.g., for reviews see Patall et al., 2022a; Linnenbrink-Garcia et al., 2016). Finally, this survey provided the opportunity to explore teachers' beliefs about the importance of various practices now and in the future, as well as the extent to which various factors, including time, resources, effectiveness, openness/rigidity, familiarity, professional development, and support/discouragement from colleagues, contribute to their use of practices. We included this focus because a better understanding of teachers' own views about importance and the factors influencing their use of motivating strategies is helpful for developing training opportunities on engaging educational practices. We ask the following broad exploratory research questions:

1. To what extent did teachers in the United States use various practices that support and thwart engagement in 2022?
2. Which of these practices do teachers in the United States believe were most important during the 2021–2022 school year and which do they anticipate will be most important in the future (2022–2023 school year)?
3. To what extent do teachers in the United States believe various factors (e.g., time, resources, effectiveness, etc.) contributed to why they used some practices more or less?
4. To what extent are teachers' reported use of practices related to teacher perceptions of student engagement in 2022?



# Methods

## Survey Design

In order to gain a better understanding of teachers' use of and beliefs about key motivational strategies, we developed a teacher survey with 135 questions that included four sections. These four sections included: a) descriptive questions about the teachers, their students, and the school setting, b) questions about students' average engagement, c) questions about teachers use of and attitudes towards 21 engagement relevant practices, and d) questions about covariates of engagement relevant practices.

As for the descriptive information we collected, questions about setting included the name and location of the school, the school district, the district size, the census designation of the school (i.e., urban, suburban, town, rural), and the funding type of the school (i.e., traditional public, public charter, religious private, non-religious private, or other). The descriptive information we collected about the teachers included: race, gender, age, type of degree, number of years in the profession, and full-time status. The descriptive information we collected about the classes teachers chose to report on included: grade level, subject, course name, special designations (i.e., gifted, honors, advanced, accelerated, remedial, developmental education, special education, English language learners, typical class section), the total number of students in the class, the percentage of students in the class that were students of color, the percentage of students who spoke a language other than English at home, and the percentage of students who were eligible for free or reduced-price lunch. We describe the contents of other sections next. This survey can be found in [Appendix A](#).

# Measures

## *Teacher Report of Student Engagement*

Teachers provided information about their students' engagement in response to two scales. We used the Rochester Assessment Package for Schools (Institute for Research and Reform in Education, 1998) to measure teacher perceptions of students' behavioral engagement and adapted three items from the Agentic Engagement Scale (Reeve, 2013) to measure teacher perceptions of students' agentic engagement. Teachers rated the extent to which students in their class, on average, demonstrated the behavior described in each item on a 5-point Likert scale ranging from rarely (1) to very often/always (5).

Confirmatory factor analyses (CFA) conducted in Mplus v.8 (Muthén & Muthén, 2017), using maximum likelihood estimation with robust standard errors (MLR) indicated a two factor model of engagement fit the data well ( $\chi^2 = 13.50$ ,  $df = 8$ ,  $p = .10$ , CFI = .996, RMSEA = .022, SRMR = .016) and standardized loadings for items were greater than 0.54 on their respective factors. The correlation between the agentic and behavioral engagement factors was  $r = .66$ ,  $p < .001$ . The data fit a single engagement factor model poorly. Additional engagement scale information, including Cronbach's  $\alpha$ , can be found in [Table 1](#).

## *Teacher Reported Use of Practices That Support or Thwart Engagement*

We assessed teachers' reported use of practices that prior research has indicated support or thwart engagement, with a measure designed explicitly for use in this study and based on theory and prior measures used in motivating practice research. The measure was initially designed to assess 21 practices (eight autonomy support practices, six competence support practices, three relatedness support practices, and four thwarting practices), with three items for each practice and 63 items total (see survey in Appendix A). Teachers rated the extent to which they engaged in each behavior on a 5-point Likert scale ranging from rarely (1) to very often/always (5).

Initial CFAs using MLR indicated several changes to our practice measures were necessary. First, initial CFAs indicated items designed to assess "soliciting student perspectives" and "opportunities for responding and discussion" were highly correlated and should be combined with the three most highly loading items on a single factor. Second, one item on the "busywork" scale was found to load poorly ( $<.30$ ) on its factor and needed to be excluded from the final model. Third, one item designed to assess "control and pressure" and one item designed to assess "suppression of perspectives" did not load well on their respective factors, and a model in which the remaining four items loaded on a single factor "control and suppression" fit the data better. After making these changes, our final CFA with 57 items indicated a 19 factor model of teacher practices (rather than 21 factors) fit the data well ( $\chi^2 = 3163.14$ ,  $df = 1368$ ,  $p < .001$ , CFI = .923, RMSEA = .031, SRMR = .048) and standardized loadings for all but one item greater than 0.46 on their respective factors. The standardized loading for one item from the "emphasis on mastery/effort" factor was lower than others at .35. A list of the final 19 practices, organized by category of support, reliability info (Cronbach's  $\alpha$ ), the sources of scale items, and example items can be found in [Table 1](#). Given the poor reliability (Cronbach's  $\alpha$ ) of the "emphasis on mastery/effort" scale that was not improved by excluding the low loading item, we did not include this scale in additional analyses.

(See [Main Tables, Table 1, Engagement and Teacher Practices Scale Information](#))

## ***Attitudes Toward Practices That Support or Thwart Engagement***

Two questions asked about teachers' perception of the importance of various practices. Teachers were asked to indicate which three practices of the original 21 practices (see [Appendix A](#) for list in survey) were most important for supporting student engagement during the 2021–2022 school year, and which three practices they expected to be most important in the next school year.

Teachers were also asked to indicate which two practices (of the original 21) they used most, and then rate the extent to which seven factors (sufficient time, sufficient resources, effectiveness, opportunity to try something new, familiarity, received professional development training, and colleagues support using practice) influenced why they used each practice the most on a 5–point Likert scale, ranging from does not influence at all (1) to extensively influences (5). Similarly, teachers were asked to indicate which two practices they used least often and then to rate on the same 5–point Likert scale, the extent to which seven corresponding factors (insufficient time, insufficient resources, ineffectiveness, interferes with routine, unfamiliarity, no professional development training, and colleagues discourage using practice) influenced why. This section ended with an open-ended question asking teachers to explain why they use some practices more than others for engaging students.



## ***Practice Covariates***

Sixteen additional questions assessed teachers' experiences of burnout (three items adapted from the Maslach Burnout Inventory, Maslach & Jackson, 1981, 1986), their motivation to teach (five items adapted from the Self-Regulation Questionnaire, Ryan & Connell, 1989), their perceptions of the school climate (three items, one autonomy support item from the Work Climate Questionnaire, Baard et al., 2004; one relatedness item adapted from the Basic Need Satisfaction and Frustration Scale, Chen et al., 2015; and one competence support item adapted from the Perceived Administrative Support subscale of the Teacher Burnout scale, Seidman & Zager, 1987), their perception of sufficient planning time (one original item) and resources for teaching (one original item), and their perceptions of their students' motivation (one original item), mental health (one original item), and behavior (one original item) during COVID–19. These items and scales were not used for the purposes of the current report. Interested readers can find the survey that includes these items in [Appendix A](#).

# Survey Procedures

Full-time elementary and secondary teachers of any subject currently (in 2022) providing classroom instruction in the United States were recruited to participate in the survey. The survey was administered using Qualtrics and remained open from May 19, 2022, to June 20, 2022. A convenience sample of respondents was sourced through multiple channels, including by contacting subscribers of GoGuardian's suite of products by email, through digital application cues, through newsletters, and reaching out to GoGuardian social media followers. Total outreach is estimated to have attempted contact with over 1.2 million educators connected with GoGuardian in some form. Respondents were incentivized to participate by being informed that all valid and complete surveys would be submitted in a raffle for one of 25 gift cards valued at \$150 each. In addition, respondents had an additional opportunity to win \$50 in another raffle if they referred someone who completed the survey and won the first raffle (Pickard et al., 2011).

## Sample

Initially, 4,567 responses were included in the dataset. Of these, 166 respondents were not given access to survey items after indicating in response to a screening question that they were not full-time elementary or secondary classroom teachers currently providing instruction in the United States. To ensure the data included only valid responses, we used a series of authenticity checks detailed in the list below.

Responses were considered invalid and excluded if they met any of the following criteria:

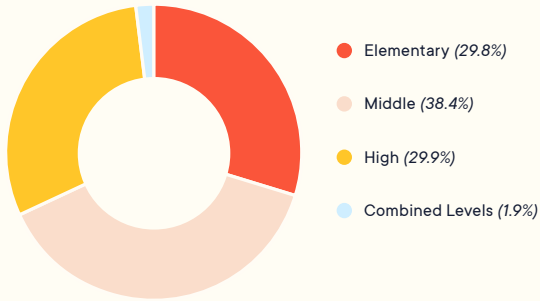
- The email listed for the purpose of the lottery was duplicated across multiple entries. (Cases in which the same email appeared just two or three times were closely examined, and the first or most complete entry was retained if the entries appeared to be the same person, given demographic information, completing the survey more than once.)

- Time to complete the survey was less than four minutes.
- The open-ended text response included only nonsense, profanity, gibberish, or was not in English.
- Responses to non-demographic items were completely duplicated for entries spaced within five minutes apart.
- The open-ended response and course name were identical to another respondent.
- Straight-line responding (identical responses for all non-demographic questions).
- Failed attention checks that asked responses to select a particular answer.
- Incongruent responding across city and state questions (e.g. city is not located within state).
- Respondents who indicated they were not full-time teachers.
- Respondents who indicated they did not teach in an elementary or secondary school in the United States.

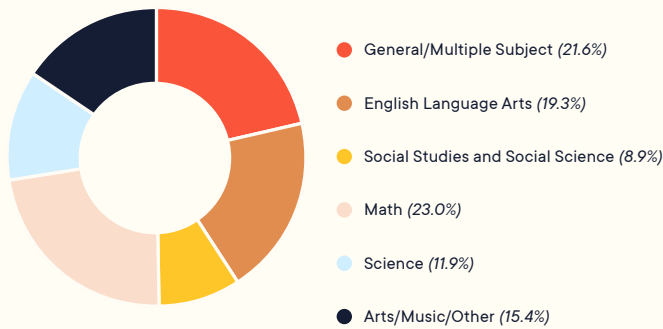
After this authentication process, there were 1,449 total valid responses (not excluding cases with missing data), with 31 of these teachers providing no additional data beyond consent and a response to the screening question. Teachers came from 1,134 schools across all 50 states and the District of Columbia.<sup>2</sup> [Table 2](#) describes the sample by key demographics. The characteristics of teachers who participated in the current study were similar to those of nationally representative data on full-time teachers in the United States from the National Center for Education Statistics (NCES) 2017–2018 National Teacher and Principal Survey (NTPS; see [Table 2](#)). NCES data was used to fill in missing information for district size and type of community (urban, suburban, town, rural) if the name of the district was provided.

<sup>2</sup>Among the 1,134 schools, for 1,059 schools, only one teacher provided a response from the school. Two teachers were nested within 68 schools and three teachers were nested in seven schools.

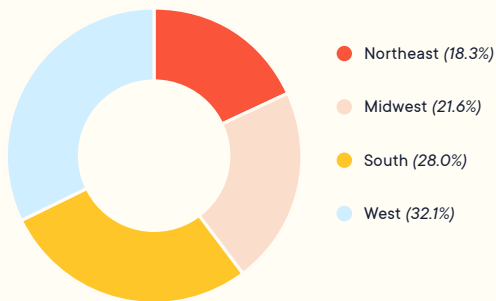
### Percent of Teacher Sample by School Level



### Percent of Teacher Sample by Subject Taught



### Percent of Teacher Sample by Region of Country



(See Part 2 for Table 2. Characteristics of Current Study and Nationally Representative Data Comparison for full table)

### Survey Details

- **Surveys Administered:**  
May 19 - June 20, 2022
- **Survey content (135 questions) – Four sections:**
  - Descriptives
  - Students engagement
  - Teachers’ use of/attitudes towards towards engagement relevant practices
  - Covariates of engagement relevant practices
- **Target population:**  
Currently active K-12 full-time teachers in the United States
- **Recruitment:**  
GoGuardian channels
- **Convenience sample:**  
1,449 public and private school educators (79% women; 66% white) from 50 states and the District of Columbia, including:
  - 423 elementary school teachers
  - 545 middle school teachers
  - 424 high school teachers

# Weighting and Analysis

In order for our results to better represent teachers in the United States, we used raking to weight responses according to the national statistics on the demographic characteristics of full-time teachers. Information on the characteristics of the full-time teacher population in the United States was taken from the 2017–2018 National Teacher and Principal Survey (<https://nces.ed.gov/surveys/ntps/>). To implement raking, we used the R 'survey' package (version 4.1-1) to create and apply the weights to the descriptive statistics, frequencies, and inferential statistics. Raking is an iterative post-stratification method that matches sample marginal distributions to known population margins. We used the following variables for raking: teacher age, teacher gender, school level, subject, teacher years of experience, teacher degree, teacher race, school type, region, community type, and whether students in the teachers' class were greater than 50% Black, Indigenous, or People of Color (BIPOC) (see Table 2). In order to match our data to the NTPS data so raking could be implemented, we had to combine categories for school type (public versus private), teacher race/ethnicity (white teacher versus teacher of color) and course subject (general education, ELA, STEM and social studies, and other) when using these variables for raking. We also excluded participants from our sample that identified as "another identity" or indicated "prefer not to say" for gender and taught in a "combined" level school, since these were not response options in the NTPS data. After removing these responses and observations with missing covariate information, we had 1,153 observations (from 1,061 schools) in the sample we used to generalize to the population of full-time K–12 teachers in the United States. Tables reporting unweighted versions of all analyses (described next) are available in [Appendix C](#).

To examine research question 1, we computed raked means and standard errors for all engagement relevant practice scales. For each practice, we also computed frequencies of scores that fell in each of five categories: Never/Not at all (1 to <1.5), Rarely (1.5 to <2.5), Sometimes (2.5 to <3.5), Often (3.5 to <4.5), Very often/Always (4.5 to 5). In addition, we computed these same values by nine key factors, including the school level, racial, income, and linguistic characteristics of the students served, subject, type of school,

and teacher gender, age, and experience. We also conducted raked Wald tests and t-tests to examine whether teachers' use of each practice varied depending on these characteristics.

To examine research question two, we computed the raked percent of the sample that selected each of the 21 engagement relevant practices as one of their three most important practices now and in the coming year. Again, we computed these same values by six factors, including the school level, racial, income, and linguistic characteristics of the students served, the subject, and the type of school.

To examine research question three, we computed the raked percent of the sample that selected each of the 21 practices as one of their two most or two least used. We averaged across ratings for the two most used practices and computed raked means and standard errors for each of the potential factors that might contribute to use (time, resources, effectiveness, opportunity (openness)/interferes (rigidity), familiarity, professional development, support/discouragement from colleagues). We also computed the frequencies of scores that fell in each of five categories: Does not influence at all (1 to <1.5), Influences very little (1.5 to <2.5), Somewhat influences (2.5 to <3.5), Influences quite a bit (3.5 to <4.5), Extensively influences (4.5 to 5). The same approach was used for ratings of the two least used practices. Raked paired t-tests were used to examine whether teacher ratings across the factors contributing to why they used some practices the most or least varied.

To examine research question four, we computed raked means and standard errors for both engagement scales. We also computed frequencies of scores that fell in each of five categories: Never/Not at all (1 to <1.5), Rarely (1.5 to <2.5), Sometimes (2.5 to <3.5), Often (3.5 to <4.5), Very often/Always (4.5 to 5). In addition, we computed these same values by three key factors, including the school level, subject, and type of school. Finally, we computed raked correlations between each engagement relevant practice scale and both types of engagement. We also computed raked correlations between each practice and both types of engagement broken down by school level.

# Results

## Teachers' Reported Use of Engagement Relevant Practices

On average, teachers reported using most supportive practices sometimes to very often and thwarting practices sometimes (see Table 3)<sup>3</sup>. The most used supportive practices, on average, were teacher caring and relationships (96.9% reported using often or very often/always), high expectations (94.2% reported using often or very often/always), soliciting student perspectives and discussion (94.4% reported using often or very often/always), personally relevant rationales (88.9% reported using often or very often/always), and teacher enthusiasm expressivity (87.7% reported using often or very often/always). Among these practices used the most, approximately 60% of teachers reported they used caring very often/always, 52% reported using high expectations very often/always, 48% reported using soliciting perspectives very often/always, 37% of teachers reported using enthusiasm very often/always, and 35% of teachers reported using personally relevant rationales very often/always. In line with these findings, teachers also emphasized these practices in response to the open-ended item asking for thoughts about why some practices are used more or less. For example, teachers said the following:

***“For me, establishing relationships is key to student success. Therefore, the practices I used emphasize that first over everything else. Once I have that established, engagement and learning become much easier.”***

- 6th grade math teacher

***“Many of my students have been repeatedly told they couldn’t do something or weren’t smart enough to do well. I hold my students to high expectations and help them reach them. Students live up or down to what is expected of them. By communicating that I hold them responsible for giving their best effort and will help them, they learn they can be successful and do much more than they thought they could.”***

- 9th grade English teacher

***“The incorporation of the students’ perspective in the lesson plan is pivotal in order to create a positive environment in which the students will engage in the lesson and learn the material more efficiently.”***

- 11th and 12th grade computer science teacher

***“To fully engage my students, it is crucial for my students to feel connected to their learning, and to feel the content is relevant to their lives. Students should gain enduring understanding in order to be able to transfer their learned skills to different contexts.”***

- 5th grade math teacher

***“...if I am not enthusiastic about a subject, how can I expect my students to be?”***

- 5th grade multiple subject teacher

<sup>3</sup>Unweighted results can be found in [Appendix C](#). See [Table C1](#) for descriptive information for overall use of teacher practices. Descriptives and ranking is similar across weighted and unweighted results.



Relatively lesser used supportive practices, on average, included culturally relevant education (48.1% reported using often or very often/always), choice provision (56.8% reported using often or very often/always), incorporating student interests or goals into activities (60.2% reported using often or very often/always), and contextualized teaching (62.4% reported using often or very often/always). In contrast to caring, high expectations, soliciting student perspectives, rationales, and enthusiasm, for which no less than 35% of teachers reported using the practice very often or always, only 16% or less of teachers reported using culturally relevant education, choice provision, incorporating student interests, and contextualized teaching very often or always. Moreover, a portion of teachers reported never or rarely using these practices (between approximately 3% and 14%). Culturally relevant teaching stood out as the supportive practice with the greatest portion of teachers reporting the practice was never or rarely used (13.7%). Storytelling, individualized challenge adjustment, student collaboration, community building and shared responsibility, informational feedback, and self-regulation instruction were frequently used, but slightly less often than the top four practices, with 82% to 72% of teachers reporting they used these practices often or very often. While most comments from teachers supported the use of these practices as well, some comments provided insight into why teachers might use these less. For example, one teacher said the following:

***“It has been very difficult/time-consuming for me to try to supplement our curriculum to include relevance to my diverse students and their interests. I’m aware the teaching practice of giving students choices can increase engagement, but I have found math education needs to be linear and scaffolded.”***

- 9th grade math teacher

Although used less on average, it was still concerning that teachers reported using thwarting practices at least sometimes (55% of teachers reported sometimes, often, or very often/always emphasizing grades, 46.9% reported using suppression/control sometimes, often, or very often/always, and 45.2% reported assigning busywork sometimes, often, or very often/always), with 14.6% reporting they used an emphasis on grades often or very often, 3.8% of teachers reporting they use control and suppression often or very often, and 6.7% reporting they use busywork often or very often. Many comments from teachers highlighted the risks of these practices. Others provided insight as to why these practices may be used despite risks. Teachers said the following:

***“I rarely use student choice because I don’t always trust that the process will result in student learning the way I want it to. I like to maintain teacher control because I feel comfortable knowing that my students are learning the way that I want them to.”***

- 3rd grade multiple subject teacher

***“Additionally the students like structured content. Book work is structured and a routine that students can follow.”***

- 9th, 10th, and 11th grade foreign language teacher

***“When it comes to teacher control, I have tried to move my teaching to be more student controlled. At times it is difficult because some students are less motivated to learn on their own than others. I do like to use informational feedback, but I feel I am hit or miss using the feedback to help drive my teaching. I find it difficult to integrate their feedback when I have planned lessons already. I also feel uncomfortable not having a plan, so my lessons are less flexible. I do not know how to move to lessons that are more flexible.”***

- 10th, 11th, and 12th grade science teacher



Given the finding that most practices were used frequently by teachers, it is not surprising teachers also commented on the importance of using multiple practices. For example, one teacher said the following:

***“My pedagogical toolbox is expansive. There is a plethora of teaching methodology that increases student engagement and growth. Choosing what tool to use and when is the art and science of teaching. It all depends on the group of students I’m teaching, the skills I’m teaching, or the content I’m teaching.”***

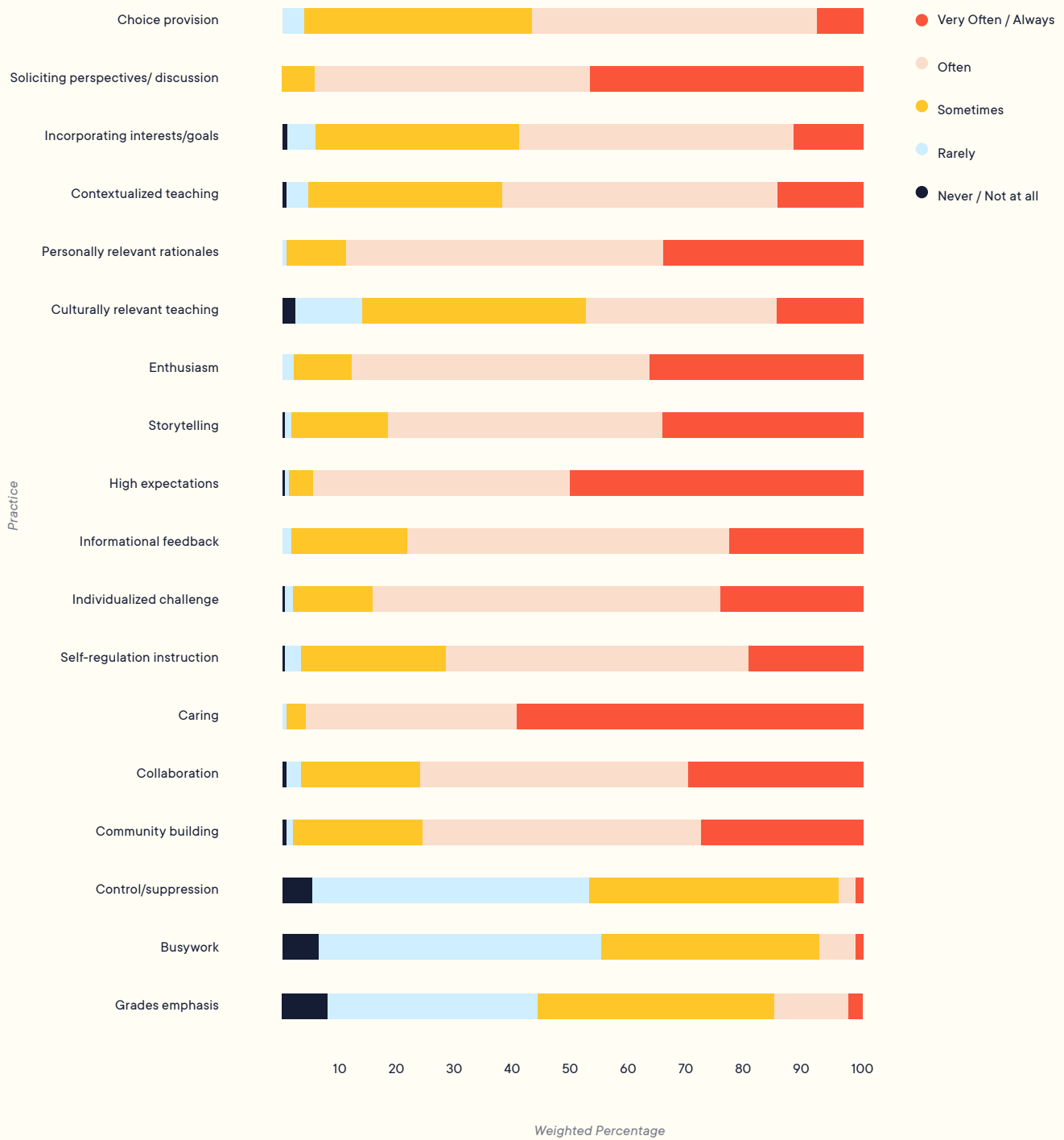
- 9th grade English teacher



***Practices Ranked in Order from Most to Least Teacher-Reported Use (Mean Use in Parentheses)***

1. Teacher caring and relationships (4.52)
2. High expectations (4.43)
3. Soliciting student perspectives and discussion (4.39)
4. Personally relevant rationales (4.23)
5. Teacher enthusiasm expressivity (4.20)
6. Storytelling (4.12)
7. Individualized challenge adjustment (4.05)
8. Student collaboration (4.05)
9. Community building and shared responsibility (4.03)
10. Informational feedback (4.00)
11. Self-regulation instruction (3.87)
12. Contextualized teaching (3.73)
13. Incorporating student interests and goals (3.69)
14. Choice provision (3.60)
15. Culturally relevant teaching (3.48)
16. Emphasis on grades (2.65)
17. Control and suppression (2.35)
18. Busywork (2.23)

**Percentage of Teachers Reporting They Never, Rarely, Sometimes, Often, or Always Use Practices**



(See Part 2 for Table 3. Descriptive Information (Weighted) For all Teacher Reported Practices)

# Variation in Use by School, Student, and Teacher Characteristics

Next, we computed weighted means, standard errors, and frequencies and tested for differences for the 18 practices by nine key factors: school level, subject, type of school, racial, income, and linguistic characteristics of the students served, and teacher gender, age, and experience (see [Tables 4–6](#) for summary; see Appendix B Tables B1–B9 for complete results). Differences in the use of practices emerged across these factors.<sup>4</sup>

## School or Class Characteristics

For school and class characteristics (see [Table 4](#)), Wald tests indicated teachers varied in their reported use of nine practices by school level. Specifically, teachers varied in their reported use of incorporating student interests and goals ( $F_{2,1150} = 7.35, p < .001$ ), culturally relevant teaching ( $F_{2,1150} = 10.26, p < .001$ ), storytelling ( $F_{2,1150} = 5.75, p = .003$ ), individualized challenges ( $F_{2,1150} = 16.38, p < .001$ ), teacher caring and relationships ( $F_{2,1150} = 11.66, p < .001$ ), student collaboration ( $F_{2,1150} = 4.06, p < .02$ ), community building ( $F_{2,1150} = 5.64, p < .005$ ), busywork ( $F_{2,1150} = 11.61, p < .001$ ), and emphasis on grades ( $F_{2,1150} = 3.27, p < .001$ ) by school level. Secondary (middle and high) school teachers reported using culturally relevant teaching, storytelling, teacher caring, community building, and busywork less frequently than elementary teachers and an emphasis on grades more frequently than elementary school teachers. There were no differences between middle and high school teachers in the reported use of these six practices. High school teachers also reported incorporating student interests and using student collaboration less often than elementary school teachers, but mean differences between middle school teachers and the other groups were not statistically significant on these two practices.

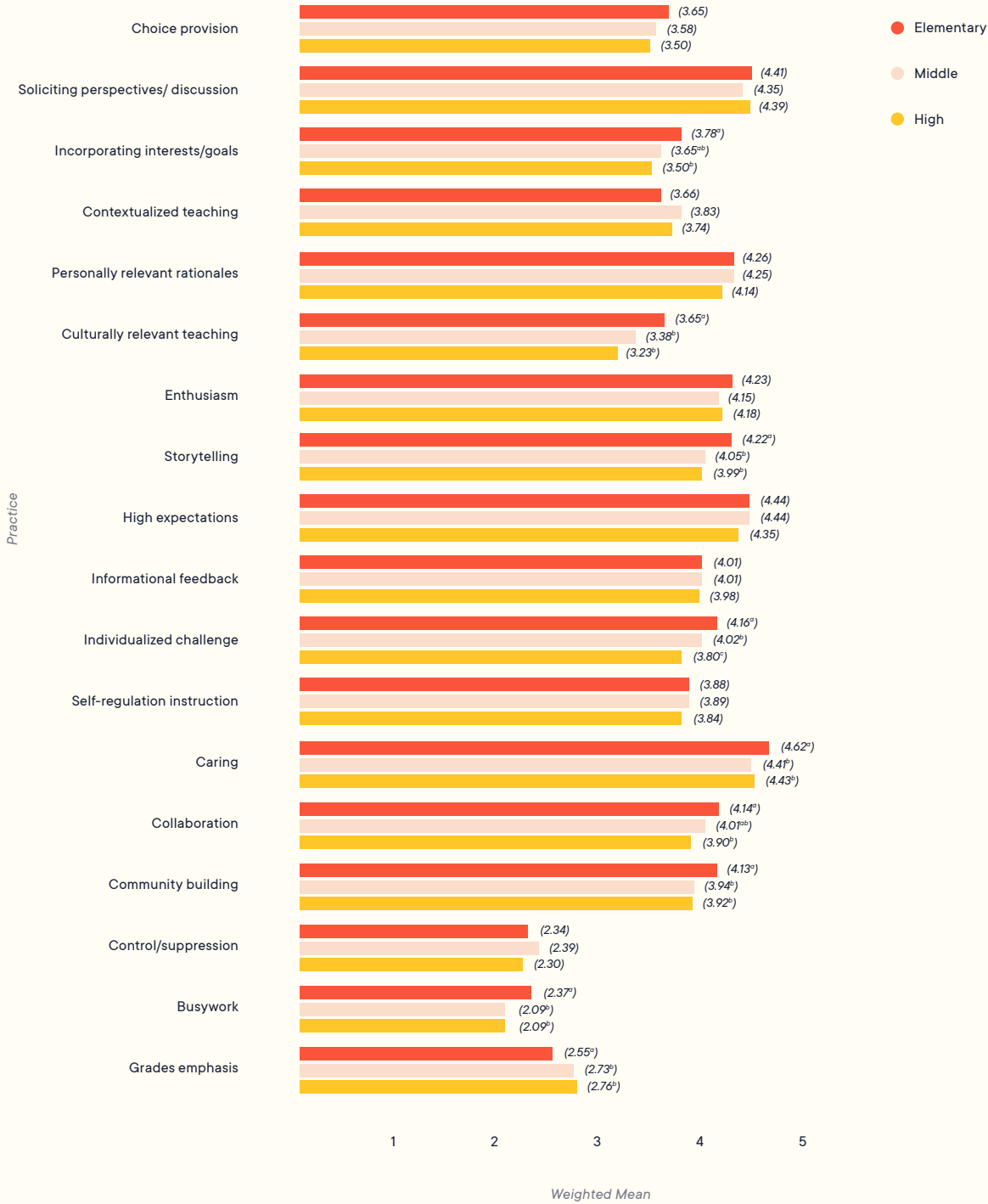
<sup>4</sup>Unweighted results can be found in [Appendix C](#). See [Table C2, C3, and C4](#) for unweighted means reported by the nine school, student, and teacher characteristics. The pattern of means of results is similar to weighted results. See [Appendix C](#).

Reported use of individualized challenge significantly declined across all three grade levels, from elementary to high school.

There were also differences depending on the subject. Among autonomy supports, teacher reported use varied for seven of eight practices, including provision of choices ( $F_{5,1147} = 3.42, p = .004$ ), soliciting perspectives ( $F_{5,1147} = 4.39, p = .001$ ), incorporating interests ( $F_{5,1147} = 4.39, p = .001$ ), contextualized learning ( $F_{5,1147} = 10.47, p < .001$ ), personally relevant rationales ( $F_{5,1147} = 2.79, p < .02$ ), culturally relevant teaching ( $F_{5,1147} = 18.28, p < .001$ ), and storytelling ( $F_{5,1147} = 10.24, p < .001$ ). The specific pattern varied depending on the practice (see [Table 4](#)). However, overall the trend across these practices was that reported use was significantly lower for either or both science or math teachers (and sometimes social studies/science teachers) compared to either (or all of) English language arts (ELA) teachers, multiple subject teachers, and other subject teachers (see [Table 4](#)). The same trend emerged for all four competence supportive practices as well, with the specific pattern depending on the practice (see [Table 4](#)). That is, teacher reported practice use varied for individualized challenges ( $F_{5,1147} = 4.48, p < .001$ ), informational feedback ( $F_{5,1147} = 3.76, p < .002$ ), individualized challenge ( $F_{5,1147} = 5.61, p < .001$ ), and self-regulation instruction ( $F_{5,1147} = 2.26, p < .05$ ). Likewise, this trend emerged for one of the three relatedness supportive practices, specifically teacher caring ( $F_{5,1147} = 5.95, p < .001$ ). However, for student collaboration ( $F_{5,1147} = 2.42, p < .04$ ), science teachers reported greater use of the practice compared to ELA, math, and social studies/science teachers, and for busywork ( $F_{5,1147} = 3.77, p < .002$ ), math teachers reported greater use compared to ELA, science, and other subject teachers. Other differences also emerged (see [Table 4](#)).

Teachers reported use of practices also varied depending on the type of school they taught at for three practices, the provision of choice ( $F_{2,1150} = 3.46, p < .04$ ), informational feedback ( $F_{2,1150} = 4.28, p < .02$ ), and control/suppression ( $F_{2,1150} = 3.05, p < .05$ ). Teachers at public and charter schools reported more frequently providing choices and informational feedback to students and using less control and suppression compared to private school teachers.

**Teacher Reported Use of Practices by School Level  
(Weighted Means)**



(See Part 2 for Table 4. Variation in Teacher Reported Use of Practices by School level, Subject, and School Type (Weighted Means))

## ***Student Characteristics***

For student characteristics (see *Table 5*), t-tests indicated teachers varied in their reported practice use by the percent of students of color for both culturally relevant teaching ( $t_{1151} = 2.25, p = .025$ ) and an emphasis on grades ( $t_{1151} = 2.54, p = .01$ ). Specifically, teachers reported using both practices more frequently if their class included at least or more than 50% students of color. T-tests also indicated teachers varied in their reported practice use by the percent of students eligible for free- or reduced price lunch for personally relevant rationales ( $t_{1146} = 2.98, p = .003$ ), informational feedback ( $t_{1146} = 2.54, p = .011$ ), and grades emphasis ( $t_{1146} = 1.98, p = .047$ ), with reported use being greater for teachers with at least 50% or more free- or reduced-price lunch eligible students in their class. Finally, t-tests also indicated teachers varied in their reported use by the percent of students speaking a language other than English at home for incorporating students' interests and goals into learning activities ( $t_{1150} = 2.11, p = .035$ ), providing students with personally relevant rationales for engaging in learning activities ( $t_{1150} = 2.96, p = .003$ ), and self-regulation instruction ( $t_{1150} = 2.11, p = .035$ ). Specifically, teachers reported using all three practices more frequently if their class included at least or more than 50% students who spoke a language other than English at home.

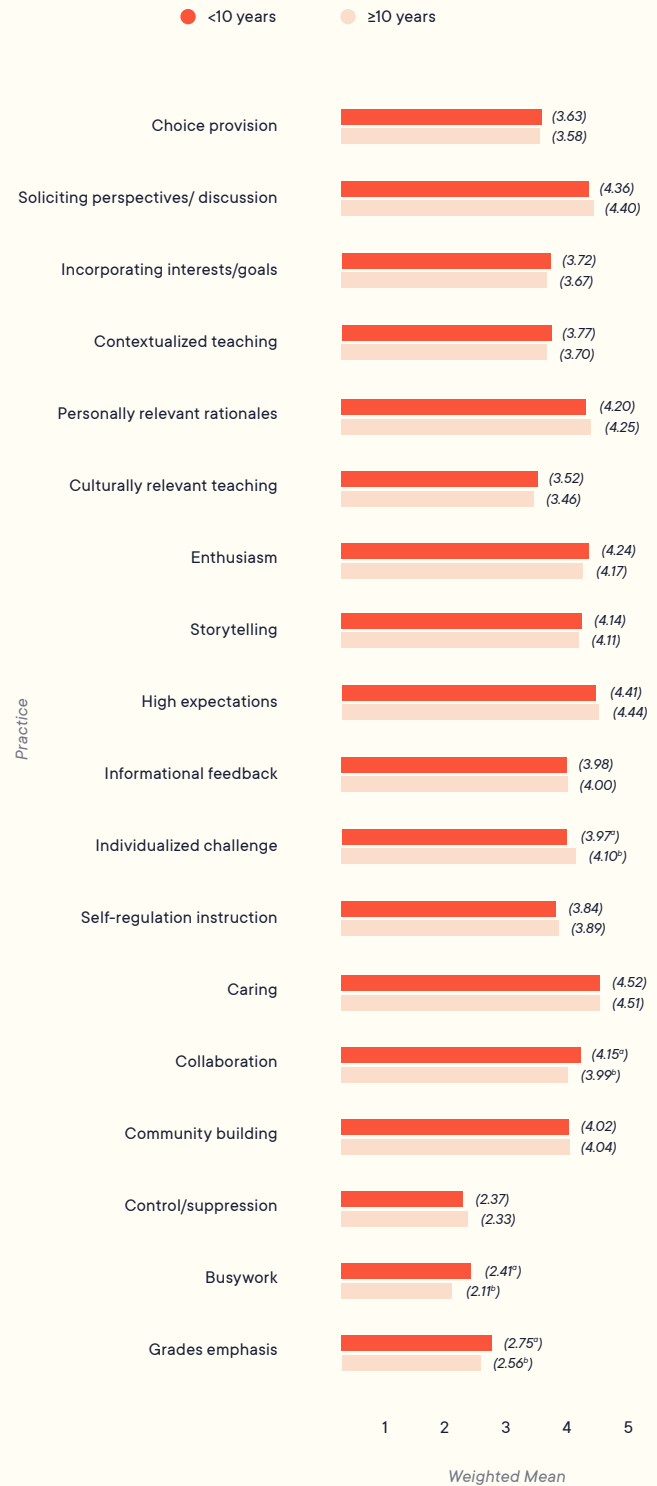
(See *Part 2 for Table 5. Variation in Teacher Reported Use of Practices by Student Race, Income, and Linguistic Characteristics (Weighted Means)*)

## Teacher Characteristics

For teacher characteristics (see [Table 6](#)), Wald and t-tests indicated teachers varied in their use of practices depending on gender, experience, and age. T-tests indicated women reported more frequently incorporating students' interests and goals into learning activities ( $t_{1151} = 1.98, p = .048$ ), expressing enthusiasm ( $t_{1151} = 2.75, p = .006$ ), providing individualized challenges ( $t_{1151} = 5.74, p < .001$ ), and providing teacher caring ( $t_{1151} = 2.94, p = .003$ ) compared to men, and less frequently using control and suppression of student perspectives ( $t_{1151} = -3.67, p < .001$ ) and an emphasis on grades ( $t_{1151} = -4.95, p < .001$ ) compared to men. Teachers with more than 10 years of teaching experience more frequently provided individualized challenge compared to teachers with less than 10 years of teaching experience ( $t_{1151} = 2.39, p = .017$ ). However, teachers with less than 10 years of teaching experience more frequently provided opportunities for student collaboration ( $t_{1151} = -2.56, p = .01$ ), busywork ( $t_{1151} = -5.24, p < .001$ ), and an emphasis on grades ( $t_{1151} = -2.29, p = .02$ ) compared to teachers with more than 10 years of teaching experience. Finally, we also found variation in teachers' reported use of culturally relevant teaching ( $F_{4, 1148} = 2.40, p = .048$ ), expressing enthusiasm ( $F_{4, 1148} = 3.97, p = .003$ ), student collaboration ( $F_{4, 1148} = 2.95, p = .02$ ), and busywork ( $F_{4, 1148} = 7.34, p < .001$ ) by age. Pairwise comparisons revealed teachers aged 30 to 39 reported significantly more frequently using culturally relevant teaching compared to older teachers aged 50 to 59. Moreover, younger teachers (under 30) reported expressing enthusiasm, provided student collaboration, and used busywork significantly more frequently compared to older teachers (see [Table 6](#) for comparisons).

(See [Part 2 for Table 6. Variation in Teacher Reported Use of Practices by Teacher Gender, Experience, and Age \(Weighted Means\)](#) for full table)

## Teacher Reported Use of Practices by Teacher Experience (Weighted Means)



# Teachers' Beliefs About the Importance of Practices

To address our question about which engagement relevant practices United States teachers believe are currently most important in 2022 and will be most important in the future (2023), we computed the percentage of teachers that selected each of the 21 listed practices as among their “top three most important” practices (see [Table 7 through 10](#)).<sup>5</sup>

## Overall Most Important Practices for 2022

Across all teachers (see [Table 7](#)), expressing enthusiasm (33%), collaboration (31%), and incorporating student interests or goals into activities (31%) were the top three most selected “important” practices in 2022. Next most frequently selected were teacher caring (30%), high expectations (27%), and opportunities for student responding and discussion (25%). However, when we combined the teachers who selected either opportunities for responding and discussion or soliciting perspectives, given the similarity of the two practices (as indicated by our measurement analyses described in the methods section), then soliciting perspectives and discussion (32%) emerged as the second most frequently chosen practice across all teachers.

The supportive practices chosen the least often as being important in 2022 were providing personally relevant rationales (6%), contextualized teaching (7%), soliciting student rationales (alone, 7%), storytelling (8%), self-regulation instruction (8%), and individualized challenge (9%). Across all teachers, thwarting practices were rarely chosen (<3%) as among the most important practices to use in 2022.

<sup>5</sup>See [Table C14 through C17](#) in [Appendix C](#) for unweighted percentages of teachers that selected each factor as among their “top three most important” practices.



## ***Most Important Practices for 2022 by Teacher, Student, and School Characteristics***

Somewhat different practices emerged as “most important” in 2022 for teachers at various school levels, subject domains, types of schools, and depending on student populations served (see [Table 7 and 8](#)). However, enthusiasm expression, incorporating student interests and goals, student collaboration, teacher caring, and high expectations consistently appeared among the top most selected practices across various teacher demographics, as did soliciting perspectives and discussion if we combined the teachers who selected opportunities for responding and discussion and soliciting perspectives. Noteworthy differences in the practices most frequently identified as “most important” in 2022 included the following. First, incorporating student interests into learning activities was selected more frequently as among the most important practices among elementary and middle school teachers relative to high school teachers. Second, high expectations rose to the top of the three most selected “important” practices in 2022 specifically for math teachers and teachers working at charter schools. Third, while enthusiasm and collaboration were among the top most selected practices across teacher demographics, science teachers seemed particularly likely to select these practices. Fourth, art, music, and other subject teachers placed particular emphasis on incorporating student interests and goals, while social studies and social science teachers emphasized this practice less than other groups and instead placed a particular emphasis on storytelling and soliciting student perspectives or creating opportunities for discussion. Fifth, math and charter school teachers appeared more likely to select individualizing challenges as a top practice compared to other groups. Sixth, regarding what was least often selected, compared to other teachers, math and science teachers stood out as very rarely selecting culturally relevant teaching.

## ***Top Three Practices Selected by Teachers as “Most Important in 2022” by Subject***

Note: Percentage of teachers selecting practices as one of the three “most important” practices in 2022 in parentheses. Italics are used to indicate when the combination of soliciting student perspectives and opportunities for discussion and responding would be ranked in the top three practices *if the two practices were combined* and treated as the unified practice.

### **Multiple Subject Teachers**

1. Collaboration (33%)
2. Enthusiasm (32%)
3. *Solicit Perspectives / Opportunities for Discussion* (32%)
4. Caring (31%)

### **English Language Arts Teachers**

1. *Solicit Perspectives / Opportunities for Discussion* (36%)
2. Incorporate student interests/goals (32%)
3. Enthusiasm (30%)
4. High expectations (29%)

### **Social Studies and Social Science Teachers**

1. *Solicit Perspectives / Opportunities for Discussion* (61%)
2. Opportunities for responding (37%)
3. Caring (32%)
4. Enthusiasm (30%)

### **Mathematics Teachers**

1. High expectations (36%)
2. Enthusiasm (33%)
3. Collaboration (31%)

### **Science Teachers**

1. Enthusiasm (47%)
2. Collaboration (45%)
3. Caring (28%)

### **Other Subject Teachers**

1. Incorporate student interests/goals (46%)
2. Enthusiasm (34%)
3. Caring (30%)

(See [Part 2 for Table 7. Number and Percentage of Teachers Selecting Practices as One of the Three “Most Important” Practices in 2022 by School Level and Subject \(Weighted\)](#) and [Table 8. Number and Percentage of Teachers Selecting Practices as One of the Three “Most Important” Practices in 2022 by Student Characteristics and Type of School \(Weighted\)](#))



## ***Overall Anticipated to Be Most Important Practices for 2023***

Across all teachers (see [Table 9](#)), high expectations (34%), teacher enthusiasm (28%), and teacher caring (28%) were the top three most selected as anticipated to be “important” practices in 2023. The next most frequently selected were incorporating student interests and goals into learning activities (27%), student collaboration (27%), and community building (23%). However, when we combined the teachers who selected either opportunities for responding and discussion or soliciting perspectives, given the similarity of the two practices, then soliciting perspectives and discussion (26%) emerged as the sixth most frequently chosen practice across all teachers.

***A key difference between current and anticipated most important practices was that teachers selected high expectations, as well as caring and community building, more frequently when anticipating the upcoming school year.***

They also selected expressing enthusiasm and collaboration slightly less frequently. Overall, the practices selected as “most important” were the same for the current and future school, though the rankings slightly shifted.

Much like with practices selected as currently most important, the supportive practices chosen the least often as anticipated to be important in 2023 were providing storytelling (4%), contextualized teaching (4%), soliciting student perspectives (alone, 6%), and personally relevant rationales (7%). Across all teachers, thwarting practices were rarely chosen (<3%) as among the anticipated most important practices to use in 2023.

## ***Anticipated Most Important Practices for 2023 by Teacher, Student, and School Characteristics***

Somewhat different practices emerged as “most important” for 2023 across teachers at various school levels, subject domains, types of schools, and depending on the student populations served (see [Table 9 and 10](#)). However, high expectations, in particular, consistently emerged as among the top most selected practices across teacher demographics, as did teacher caring, enthusiasm expression, student collaboration, and soliciting perspectives and discussion. Noteworthy differences in the practices most frequently identified as potentially “most important” for 2023 included the following. First, relative to other teachers, social science and social studies teachers more frequently selected soliciting perspectives and discussion as an important practice for 2023, and they less frequently selected providing choices as important for 2023. This trend was also apparent in 2022. Second, charter school teachers stood out as selecting the incorporation of student interests and goals into learning activities more rarely than other groups. Third, math and private school teachers stood out as selecting culturally relevant teaching as a potentially important practice for 2023 more rarely than other groups; however, math and charter school teachers stood out as more frequently selecting high expectations. Moreover, private school teachers selected providing informational feedback as important for 2023 more frequently compared to other groups, a trend that somewhat contrasts with our finding that self-reported use of informational feedback was lower for private school teachers than public and charter school teachers in 2022 (see [Table 4](#) in prior section). Fourth, elementary (multiple subject) teachers more frequently selected community building compared to other groups, while private school teachers selected this practice less frequently than other groups. Fifth, elementary school (multiple subject) teachers were also particularly unlikely to select contextualized teaching as a most important practice for 2023. Sixth, teachers serving

more students of color selected culturally relevant teaching more often than teachers serving fewer students of color. Finally, private school teachers selected teacher control and minimizing students' negative expression as an important practice for 2023 more often compared to teachers at other types of schools.

### ***Top Three Practices Selected by Teachers as Anticipated to Be “Most Important for 2023” by Subject***

Note: Percentage of teachers selecting practices as one of the three anticipated to be “most important” practices in 2023 in parentheses. Italics are used to indicate when the combination of soliciting student perspectives and opportunities for discussion and responding would be ranked in the top three practices *if the two practices were combined* and treated as the unified practice.

#### **Multiple Subject Teachers**

1. Community building (34%)
2. High expectations (32%)
3. Caring (30%)

#### **English Language Arts Teachers**

1. High expectations (35%)
2. Collaboration (31%)
3. Enthusiasm (28%)

#### **Social Studies and Social Science Teachers**

1. *Solicit perspectives/ opportunities for discussion (60%)*
2. Opportunities for responding (37%)
3. Caring (33%)
4. Incorporate student interests/goals (28%)

#### **Mathematics Teachers**

1. High expectations (41%)
2. Collaboration (34%)
3. Enthusiasm (30%)

#### **Science Teachers**

1. High expectations (35%)
2. Collaboration (32%)
3. Enthusiasm (31%)

#### **Other Subject Teachers**

1. High expectations (33%)
2. Incorporate student interests/goals (31%)
3. Collaboration (29%)

(See [Part 2 for Table 9. Number and Percentage of Teachers Selecting Practices as Anticipated to Be One of the Three “Most Important” Practices for 2023 by School Level and Subject \(Weighted\)](#) and [Table 10. Number and Percentage of Teachers Selecting Practices as Anticipated to Be One of the Three “Most Important” Practices for 2023 by Student Characteristics and Type of School \(Weighted\)](#))

## Teachers' Beliefs About the Factors Contributing to Use

We computed the percentage of teachers that selected each of the 21 listed practices as among their “top two most used” practices and “top two least used” practices (see [Table 11](#)).<sup>6</sup> Partly consistent with the ranking that emerged based on the multi-item practice scales, teacher caring (25%), high expectations (24%), student collaboration (24%), and teacher enthusiasm (24%) were selected by teachers most frequently as one of the two “most used” practices. Not surprisingly, and consistent with the ranking that emerged based on the multi-item practice scales, teachers most frequently selected the four thwarting practices (worksheets/book work [47%], grades emphasis [44%], teacher control [22%], and minimize student negative expression [21%]) as “least used.” However, among the supportive practices, instruction on self-regulated learning (9.4%), culturally relevant teaching (8.7%), choice provision (7.5%), and storytelling (7.5%) were most frequently selected as “least used.” The means (indicating frequency) on the culturally relevant teaching and choice provision multi-item scales were also among the three lowest (see section on “Teachers Reported Use of Engagement Relevant Practices”).

(See [Part 2 for Table 11. Number and Percentage of Teachers Selecting Practices as Among the Two “Most Used” or Two “Least Used” Practices \(Weighted\)](#))

<sup>6</sup>See [Table C18 in Appendix C](#) for unweighted percentages of teachers that selected each factor as among their “top two most used” and “top two least used” practices.

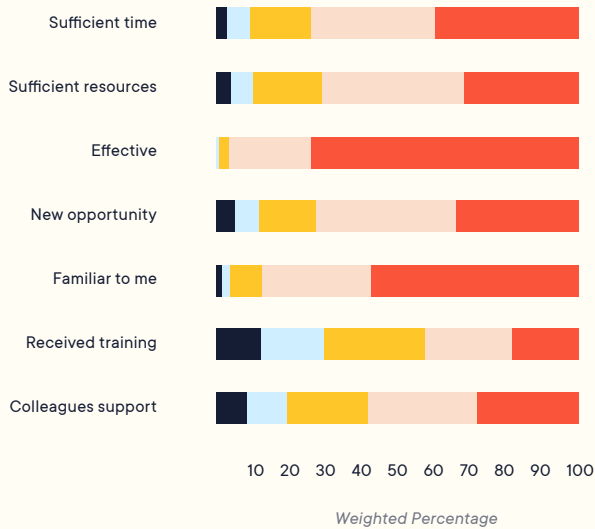
<sup>7</sup>See [Table C19 in Appendix C](#) for unweighted descriptives for reasons influencing the two practices selected as most and least used.

To address our question about the extent to which various factors (e.g., sufficient/lack of time, sufficient/lack of resources, practice effectiveness/ineffectiveness, practice is a new opportunity (openness)/interference with routine (rigidity), sufficient/lack of familiarity with practice, received/did not receive training on practice, practice encouraged/discouraged by colleagues) are perceived by United States teachers to contribute to why they use some engagement relevant practices the most or least, we computed and compared the means for each potential factor. We collapsed across ratings for the two most used practices to create one set of averages describing the extent to which teachers felt each factor influenced practices they used the most. Likewise, we collapsed across ratings for the two least used practices to create a second set of averages describing the extent to which teachers felt each factor influenced practices they use the leasts (see [Table 12](#)).<sup>7</sup> Teachers perceived the effectiveness (96.9% reported it influences quite a bit or extensively) and familiarity of the practice (88.5% reported it influences quite a bit or extensively) to be most influential as to why they used some practices the most. Paired t-tests indicated the mean rating for the influence of effectiveness and familiarity were significantly different from each other, and significantly greater than all other factors ( $ps < .001$ ). Having sufficient time for the practice (73.6% reported it influences quite a bit or extensively) and the opportunity to try something new (72.1% reported it influences quite a bit or extensively) were rated by teachers as the next most influential factors, followed by having sufficient resources (69.8% reported it influences quite a bit or extensively) and support from colleagues (56.8% reported it influences quite a bit or extensively). Among these four reasons, the ratings for having sufficient time, resources, and colleague support were all significantly different from each other in paired t-tests ( $ps < .001$ ). The opportunity to try something new was rated significantly higher as a factor influencing what practices teachers used most compared to support from colleagues ( $p < .001$ ). However, it was not significantly different from teacher ratings of either the influence of sufficient time or resources.

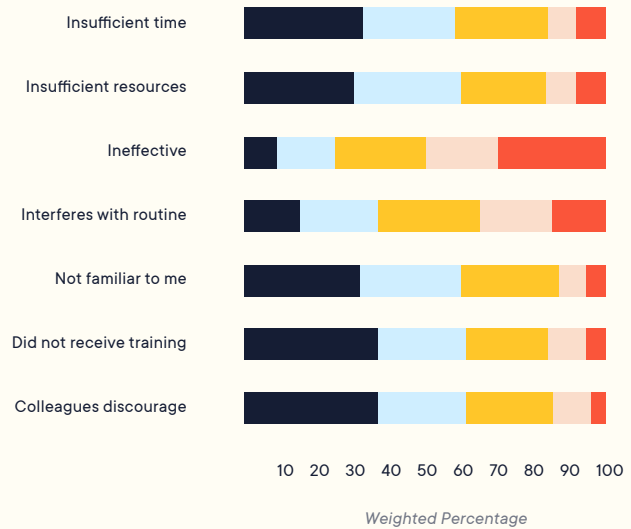
**Reasons Influencing the Two Practices Selected as Most Used and the Two Practices Selected as Least Used Practice (Weighted Percentage)**

● Extensively influences    ● Influences quite a bit    ● Somewhat influences  
 ● Influences very little    ● Does not influence at all

**Reasons Why Most Used**



**Reasons Why Least Used**



**Having received training (41.9% reported it influences quite a bit or extensively) was perceived as the least influential factor for why they used some practices the most.**

Paired t-tests indicated the mean rating for the influence of receiving training was significantly lower than all other factors ( $p < .001$ ).

Teachers perceived the ineffectiveness of the practice (50.4% reported it influences quite a bit or extensively) and the interference of the practice with the teachers' routine (34.7% reported it influences quite a bit or extensively) to be most influential to why they used some practices the least. Paired t-tests indicated the mean rating for the influence of these factors were significantly different from each other and significantly greater than all other factors ( $p < .001$ ). There were no significant differences among teachers' ratings of the influence of other factors (15% to 17% reported lack of time, resources, familiarity, training, or encouragement influences quite a bit or extremely).

(See [Part 2 for Table 12. Descriptive Information for Reasons Influencing the Two Practices Selected as Most Used and the Two Practices Selected as Least Used Practice \(Weighted\)](#))

The impact of these factors and others was evident in teacher comments. For example, related to effectiveness, one teacher said:

***“I stay updated on current teaching research and can see what practices are proven to be effective. Then once I see the benefit in my own classes, I stick with this approach. There are practices that work regardless of the changing in students and learning climate.”***

- 3rd grade English language arts teacher

Many also commented on familiarity as well, often connecting it to issues of time, training, and routine:

***“I use some of the practices more than others because I am more familiar with them or more comfortable with the practices...”***

- 3rd grade multiple subject teacher

***“I’m busy - three different courses, two extracurricular activities I sponsor, my own children/family life. I tend to continue using methods and materials that are familiar because a 50 minute planning period is not nearly enough to research and implement ground-breaking or even just unfamiliar methods/materials very often.”***

- 9th grade science teacher

***“Some practices are more familiar to me and I’ve had training on how and when to implement it. I also find when things are effective, I continue it, but if it’s not effective, I’ll stop doing it. Other practices seem like they would be effective, but I haven’t had training and I don’t know how to implement it. Other times, I’m not sure how to fit it in my schedule due to time.”***

- 4th grade multiple subject teacher

Some teacher comments also suggested completing the survey served as a reflective activity as they thought about which practices they might use more or less, but models were needed to try less familiar practices.

***“In completing the survey, I realized there were more practices I wanted to incorporate, and others I would like to use less. Part of why they are used is just because that was how I was taught. Without collaboration with an experienced PLC [professional learning community], you might not be aware of things you can do to make the topic more relatable and hands-on. My first year, I just repeated the explore activities and exercises in their textbooks. We don’t necessarily know how to do things differently until we see it done successfully, or ask questions because we realize that we are struggling.”***

- 7th grade math teacher

# Teachers' Perceptions of Student Engagement and Correlations With Practices

To better understand teachers' perceptions of their students' behavioral and agentic engagement, we first examined the means and frequencies (see [Table 13](#)) for teachers' reports of both types of engagement. On average, teachers reported their students were "sometimes" to "often" engaged both behaviorally and agentially. That is, they felt their students were sometimes or often paying attention, participating and working hard and/or asking questions, expressing opinions, and making suggestions in order to influence the instruction and their own motivation and learning. For behavioral engagement, 28.7% of teachers felt their students, overall, were often or very often engaged, while 18.1% of teachers felt their students were rarely or never engaged. For agentic engagement, 72.3% of teachers felt their students, overall, were often or very often engaged, while only 1.7% of teachers felt their students were rarely or never engaged. Wald tests indicated teachers' perceptions of agentic engagement varied depending on grade level ( $F_{2, 1150} = 3.62, p < .03$ ) and subject ( $F_{5, 1147} = 5.35, p < .001$ ), while perceptions of behavioral engagement varied by grade level ( $F_{2, 1150} = 12.65, p < .001$ ; see [Table 14](#) and Appendix Table B10 through B12 for complete results).<sup>8</sup> Pairwise comparisons indicated elementary school teachers perceived their students to be more behaviorally and agentially engaged than middle and high school teachers, who did not differ in perceptions of engagement. Pairwise comparisons also indicated science teachers perceived their students to be less agentially engaged than all other groups (multiple subject, ELA, social studies/social science, math, and other). Moreover, math, ELA, and other subject teachers perceived their students to be less agentially engaged than multiple subject teachers.

<sup>8</sup>Unweighted results for teachers' reports of student engagement can be found in Appendix C in Tables C20, C21, C22, C23, and C24. The pattern of means is similar to weighted results.

**Percentage of teachers reporting students were never, rarely, sometimes, often, or always engaged**



(See [Part 2](#) for [Table 13](#). Descriptive Information for Engagement (Weighted) and [Table 14](#). Variation in Engagement by School Level, School Type, and Subject (Weighted Means))

To answer our question about the extent to which teachers' reported use of practices related to teacher perceptions of student engagement, we computed correlations between each practice and the two forms of engagement (see [Table 15](#)).<sup>9</sup>

**Overall, collapsing across grade levels, every supportive practice was significantly positively correlated with both behavioral and agentic engagement.**

For thwarting practices, one of the three thwarts (teacher control and suppression) was significantly negatively correlated with both forms of engagement. Across both types of engagement, the magnitude of the correlations with supports ranged from 0.09 to 0.37 and the magnitude of the correlations with thwarts ranged from -0.003 to -0.16. In other words, teachers' reported use of engagement-supportive strategies had a positive relationship with perceptions of their students' behavioral and agentic engagement. Across grade levels, the strongest support correlates of behavioral engagement were collaboration ( $r = .25$ ), expressing enthusiasm ( $r = .23$ ), soliciting perspectives and discussion ( $r = .22$ ), and providing choices ( $r = .19$ ). The strongest support correlates of agentic engagement were soliciting perspectives and discussion ( $r = .37$ ), expressing enthusiasm ( $r = .36$ ), incorporating student interests and goals into learning activities ( $r = .30$ ), and teacher caring ( $r = .30$ ). While busywork and an emphasis on grades had small non-significant negative correlations with engagement ( $r = -.003$  to  $-.05$ ), control and suppression of student perspectives had somewhat larger significant negative correlations with both behavioral ( $r = -.08$ ) and agentic engagement ( $r = -.16$ ).

Breaking down correlations by school level (see [Table 15](#)), revealed different key correlates of engagement. At the elementary level, student collaboration ( $r = .30$ ), teacher enthusiasm ( $r = .29$ ), and soliciting perspectives and discussion ( $r = .28$ ) were the strongest supportive correlates of behavioral engagement and soliciting perspectives and discussion ( $r = .48$ ), teacher enthusiasm ( $r = .39$ ), and caring ( $r = .36$ ) were the strongest supportive correlates of agentic engagement. Control and suppression was the strongest thwarting correlate for both, but it was only significantly correlated with agentic engagement ( $r = -.27$ ) at the elementary level.

At the middle school level, community building ( $r = .23$ ), choice provision ( $r = .22$ ), and soliciting perspectives and discussion ( $r = .22$ ) were the strongest supportive correlates of behavioral engagement ( $r = .23$ ). Soliciting perspectives and discussion ( $r = .29$ ), incorporating student interests and goals into learning activities ( $r = .27$ ), and choice provision ( $r = .25$ ) were the strongest supportive correlates of agentic engagement. Teacher control and suppression was significantly correlated with both behavioral ( $r = -.14$ ) and agentic engagement ( $r = -.15$ ) at the middle school level.

At the high school level, enthusiasm ( $r = .28$ ), high expectations ( $r = .25$ ), and collaboration ( $r = .22$ ) were the strongest supportive correlates of behavioral engagement. Enthusiasm ( $r = .43$ ), community building ( $r = .35$ ), and collaboration ( $r = .29$ ) were the strongest supportive correlates of agentic engagement. Unlike at other school levels, busywork ( $r = -.12$ ) and an emphasis on grades ( $r = -.11$ ) significantly negatively correlated for behavioral engagement at the high school level, but teacher control and suppression did not. None of the thwarting practices were significantly correlated with agentic engagement at the high school level.

(See [Part 2 for Table 15. Correlations \(Weighted\) Between Practices and Engagement Overall and by School Level](#))

<sup>9</sup>See [Table C25 in Appendix C](#) for unweighted correlations.



# Discussion

For the 2022–2023 State of Engagement Report, we sought to address four aims. First, we wanted to assess the extent to which United States K–12 teachers used various practices during the 2021–2022 school year that prior research has identified as supportive or thwarting of engagement. Second, we wanted to identify which practices teachers in the United States believed were most important during the 2021–2022 school year, and which practices they believe will be most important in the 2022–2023 school year. Third, we wanted to assess the extent to which teachers perceive various factors (like time and resources) to contribute to why they use some engagement-relevant practices more or less than others. Fourth and finally, we wanted to assess the extent to which teachers’ reported use of practices was related to their perceptions of students’ engagement during 2022. To address these aims, we conducted an online national teacher survey at the end of the 2021–2022 school year, collecting data from a convenience sample of K–12 teachers across all 50 states. Our results revealed novel insights we organized into ten key takeaways.

# Key Takeaways

1. In 2022, teachers reported using many key engaging practices (e.g., high expectations, caring and relationship building) frequently, and some other supportive practices (e.g., choice provision, incorporating student interests, and culturally relevant teaching) less often. Although teachers reported using thwarting practices somewhat regularly in 2022, it was far less often than they reported using engaging-supportive practices. Results suggest teachers routinely used a wide variety of motivating practices that support engagement during the 2021–2022 school year. In particular and consistent with the 2021–2022 State of Engagement Report (Aguilar et al., 2021), teachers reported using caring and relationship building, high expectation setting, perspective taking, personally relevant rationales, and enthusiasm expression the most often. No less than 87% of teachers reported using these practices often or very often/always. In contrast, the supportive practices teachers reported using relatively less often included culturally relevant teaching, choice provision, incorporating student interests and goals into learning activities, and contextualized teaching. Between 48% and 62% of teachers reported using these four practices (i.e., culturally relevant teaching, choice provision, incorporating student interests, and contextualized teaching) often or very often/always, and a portion of teachers rarely or never used these practices. Culturally relevant teaching stood out as the supportive practice with the greatest portion of teachers reporting the practice was never or rarely used (13.7%). Given extensive evidence on the effectiveness of these practices, and all the supportive practices examined in this study, (Patall et al., 2022a; Linnenbrink-Garcia et al., 2016), we believe students would benefit if teachers incorporated these practices into their instructional approach even more frequently. While teachers reported using thwarting practices more often than what we would consider ideal — with no less than 45% of teachers reporting they use control or suppression of student perspectives, assign busywork, or emphasize grades at least sometimes — their prevalence was far less than engagement supportive practices.
2. Elementary school teachers reported being, overall, more supportive of student engagement across a variety of practices compared to secondary school teachers in 2022. Elementary level teachers used seven of the 15 supportive practices (incorporating student interests, culturally relevant teaching, storytelling, individualized challenge, teacher caring, student collaboration, and community building) to a greater extent in 2022 than secondary level teachers, and used an emphasis on grades less than secondary school teachers. We note school level differences were found within all three categories of support, including support for autonomy, competence, and relatedness. The one exception to this trend was elementary school teachers reported assigning busywork more often than secondary level teachers, which we note may be developmentally appropriate. This trend is consistent with prior research suggesting declines in students' motivation and engagement across school levels may co-occur with declines in teachers' use of motivating practices (e.g., Eccles et al., 1993; Wang & Eccles, 2012). This trend is unfortunate and important to address because developmental theory and evidence suggest students need more (not less) support for autonomy and relatedness in particular, including strategies that can support identity development (e.g., incorporating student interests, culturally relevant teaching), as they enter adolescence (e.g., Assor, 2018; Erikson, 1968; Wigfield et al., 2006). Taken together with prior research, results underscore the importance of prioritizing support for secondary teachers' efforts to incorporate motivationally-supportive strategies into their instruction.
3. Overall, math and science teachers reported using supportive practices less often compared to other groups of teachers in 2022. Consistent with evidence suggesting student engagement is particularly low within the domains of science and math (e.g., Maltese & Tai, 2011; Potvin & Hasni, 2014), our results indicated math and/or science teachers reported using 12 of the 15 supportive practices less often in 2022 relative to some other teacher groups and used busywork more often. The one exception to this pattern

was science teachers reported using more collaboration, a strategy consistent with the ethos of the science domain (Gotian, 2021). In particular, math and science teachers stood out as using culturally relevant teaching less and being less likely to select it as an important practice for 2022 or for 2023, a concerning pattern given the increasing racial diversity of United States schools (U.S. Government Accountability Office, 2022). Given the ever-growing need for STEM experts (National Science Board, 2018), we suggest interventions that target improvements in the motivational practices of STEM teachers should be a priority.

4. There were limited differences in teachers' reported practice use or attitudes between public and private school teachers depending on the characteristics of the students that teachers served. However, the differences that did emerge generally suggested supportive practices occurred more at public schools and among teachers who served more diverse learners. Teachers at public and charter schools reported more frequently providing choices and informational feedback to students in 2022 and using less control and suppression compared to private school teachers. Private school teachers also selected teacher control and minimizing students' negative expression as a potentially important practice in 2023 more often compared to teachers at other types of schools. Likewise, teachers reported more frequently using culturally relevant teaching if they served a greater number of students of color and using personally relevant rationales and informational feedback more frequently if they served a greater number of students eligible for free- or reduced-price lunch. They also reported providing personally relevant rationales, self-regulation instruction, and the incorporation of student interests more often if they served a greater number of students who spoke a language other than English at home. The one exception to this adaptive pattern was teachers reported emphasizing grades more frequently when they served a greater number of students of color or students who were eligible for free- or reduced-price lunch.

5. There were limited differences in teachers' reported practice use depending on the characteristics of the teachers themselves. The few differences we found suggested women reported using more supportive and less thwarting practices in 2022, but differences were mixed based on teachers' age and experience. Specifically, women reported using individualized challenge, enthusiasm, teacher caring, and the incorporation of student interests more frequently than men. Women also reported using control and suppression of student perspectives and an emphasis on grades less often than men. For some practices, teaching experience seemed to have benefits, as teachers with more experience reported providing more individualized challenge, assigning less busywork, and emphasizing grades less frequently. However, younger and/or less experienced teachers reported using other practices like culturally relevant teaching, enthusiasm, and collaboration more often than older or more experienced teachers. We suspect differences stem from two sources: a) exposure as a result of what has been recently emphasized in teacher training and education programs (e.g., culturally relevant teaching) and b) the benefits of experience for strategies that may require practice (e.g., individualized challenge) or the development of alternative strategies (e.g., to replace busywork and emphasizing grades).

6. Teachers reported believing that enthusiasm, high expectations, and practices that bring about relatedness or focus on students' interests and perspectives were among the most important in 2021–2022 and will be important in 2022–2023. Although the exact ranking shifted between academic years, teachers selected enthusiasm, high expectations, collaboration, incorporating student interests, teacher caring, and soliciting perspective or discussion as the most important practices for both academic years. This was consistent across teacher demographics.

7. Teachers perceived the effectiveness of a practice, their familiarity with a practice, and the extent to which a practice interferes with their current routine to be most influential in determining which practices they used most or least. Among the reasons teachers might use some practices to engage

students more than others, teachers rated the effectiveness of the practice and being familiar with a practice as most influential. They rated these reasons as more influential than having sufficient time, sufficient resources, the opportunity to use new practices (e.g., being open), encouragement from colleagues, or training. Training was perceived to be the least influential factor for using a practice the most. Similarly, teachers rated believing the practice was ineffective and interferes with their existing routine (e.g., rigidity) as most influential in determining which practices they avoided using to motivate students. Ineffectiveness and interference were rated as more influential than insufficient time, insufficient resources, a lack of familiarity with the practice, discouragement from colleagues, or training. These results suggest efforts need to be put towards finding ways to persuade teachers of the benefits of practices that have been demonstrated to be effective and removing barriers to implementation in teachers' existing routines.

8. Overall, teachers reported perceiving engagement from students to be fairly high, especially agentic engagement. However, secondary and science teachers perceived their students to be less engaged relative to other groups of teachers. Eighty-two percent of teachers perceived their students to be at least sometimes behaviorally engaged and 98% of teachers perceived students to be at least sometimes agentially engaged. Although it is reassuring the vast majority of teachers find their students to be at least somewhat engaged, this finding may be inconsistent with students' own reports, particularly related to agentic engagement (e.g., Zambrano et al., 2022). Moreover, teachers' perceptions of student engagement by school level and subject were consistent with patterns found for their use of engaging practices. Specifically, secondary teachers perceived their students to be less frequently engaged than elementary school teachers, a pattern consistent with the lower use of motivating practices at the secondary level and extensive data documenting declining motivation across school levels (e.g., Eccles et al., 1993; Wang & Eccles, 2012). Likewise, science teachers perceived their students to be less agentially engaged relative to other groups of teachers,

consistent with trends suggesting low student motivation in STEM areas is a particular concern (e.g., Maltese & Tai, 2011; Potvin & Hasni, 2014). Taken together with other evidence from this report, as well as prior research, we recommend attention be given to supporting secondary teachers in the development of engaging practices in the classroom and better supporting students' agency in science classes in particular (e.g., see Patall et al., 2022b for an example of a student-focused intervention supporting students' agentic engagement).

9. All engagement supportive practices were positively correlated with teacher perceptions of students' behavioral and agentic engagement and one of the three thwarts (control and suppression) was negatively correlated with both forms of engagement. These associations are consistent with extensive evidence documenting the benefits of practices that support students' experiences of autonomy, competence, and relatedness for student motivation, engagement, and learning (e.g., Patall et al., 2022a; Linnenbrink-Garcia et al., 2016). Results also suggested teacher control and suppression of student perspectives was significantly related to lower engagement among students, a concerning finding given 47% of teachers report using this practice at least sometimes. Related to thwarts, we were not surprised to find the other thwarts (busywork and an emphasis on grades) were not significantly correlated with engagement, as prior research suggests thwarts tend to relate to undesirable student outcomes (e.g., disengagement) more so than desirable outcomes (e.g., Patall et al., 2018a).
10. Relatedness and autonomy supportive practices were among the most highly correlated with teacher perceptions of student engagement, with autonomy supportive practices being important at the middle school level in particular. Of all the engagement-supportive teacher strategies, expressing enthusiasm and soliciting student perspectives and discussion were among the most strongly correlated with teachers' reports of both behavioral and agentic engagement among their students. Collaboration and providing choices were also among the strongest correlates of behavioral engagement and teacher caring and

incorporating student interests were among the strongest correlates of agentic engagement. Several points are worth noting. First, it is important to note some of the practices most highly correlated with engagement, specifically the provision of choice and incorporating students' interests, were supportive practices teachers reported using relatively less often. We also believe the correlations with engagement across all the supportive practices highlight the importance of teachers using a diverse set of motivating practices that not only includes, but goes beyond support for relatedness to also include support for autonomy and competence as well. We note this given a theme of this report and the prior State of Engagement Reports (Aguilar et al., 2020; 2021) that suggests that overall, teachers' prioritize caring, relationship building, and enthusiasm as their primary strategy for engaging students, perhaps giving less consideration for how to incorporate other engaging practices. Finally, our results suggested a shift at the middle school level, such that teachers' use of autonomy supportive practices emerged as the strongest correlates of teachers' perceptions of early adolescent engagement. Again, this is consistent with the developmental theory that suggests achieving autonomy and independence are key milestones of adolescence (e.g., Erikson, 1968; Eccles et al., 1993). These trends point to opportunities to enhance student engagement by increasing opportunities for teachers to incorporate autonomy supportive practices into their instructional approach.

## Implications, Limitations, and Future Directions

This investigation makes an important contribution by being the first to explore teachers' use of and attitudes toward a wide variety of motivating and engaging practices in a national sample of teachers in the United States. The findings of this investigation can be used to precisely target practices and contexts for support or intervention as we work towards maximizing the motivation and engagement of all students. We believe these results highlight the value of interventions and initiatives that target teachers' use of multiple practices. We also believe it would be wise for new initiatives to focus on secondary level teachers and particularly target practices teachers report using less frequently (e.g., incorporating student interests and goals into learning activities, choice provision, contextualized teaching, culturally relevant teaching, self-regulation instruction) and reducing practices that thwart engagement (e.g., control and suppression of student perspectives).

Along with other seminal work, we hope this investigation will provide a base for replication and extension. A number of limitations of the current investigation should be noted. One particular limitation is the exclusive reliance on teacher self-reports, given concerns about response-bias, including socially desirable and acquiescent responding, and shared-method variance (e.g., Paulhaus, 1991; Podsakoff et al., 2003). Ideally, future research would corroborate teachers' self-reports with classroom observations and student reports. Incorporating reports from and observations of students regarding their engagement is another critical direction for future research. Although the current investigation drew a national convenience sample and we used weighting to approximate the population of full-time teachers in the United States, it remains limited by self-selection bias, particularly because the survey was distributed via GoGuardian channels.



# Conclusions

As one teacher who participated in this investigation wrote:

***“Student engagement is the gateway to understanding. It is imperative students are engaged in order to get the information to ‘stick.’”***

This report demonstrates many teachers are using a wide array of motivating strategies to help engage students in order to get new skills and information “to stick.” Indeed, we found many bright spots in this report related to the widespread use and endorsement of engaging practices. This report highlights that teachers perceive practices that support relatedness, emphasize high expectations, and focus on students’ perspectives to be particularly central to their practice. It also points to opportunities for teachers to further support students’ engagement by incorporating engaging practices they tend to use to a lesser extent and avoiding thwarting practices that continue to be used despite the risks to students’ motivation and engagement. We encourage researchers and educators to continue to explore the possibilities of engaging classroom practices and prioritize students’ engagement and the motivational climate of the classroom in education reform efforts.

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Excited to share what engagement practices you use in your classroom? We’d love to hear from you! To build on the data in this report, Center EDGE is creating a resource depository where teachers like you can share examples and reflections of effective engagement practices to learn from one another. To share your best engagement strategies, click [here](#).

***Please find Part 2 – References, Tables, and Appendices [here](#).***