frontiers | Frontiers in Education

TYPE Original Research
PUBLISHED 02 February 2023
DOI 10.3389/feduc.2023.1040996

OPEN ACCESS

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SPECIALTY SECTION
This article was submitted to Educational Psychology, a section of the journal Frontiers in Education

RECEIVED 09 September 2022
ACCEPTED 09 January 2023
PUBLISHED 02 February 2023

CITATION
Radil AI, Goegan LD and Daniels LM (2023) Teachers' authentic strategies to support student motivation.
Front. Educ. 8:1040996.
doi: 10.3389/feduc.2023.1040996

Teachers' authentic strategies to support student motivation

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Introduction: Most theories of motivation have largely developed from the work of scholars rather than the perspectives of teachers. This means that although researchers have many recommendations to guide the way teachers motivate students, there is little understanding of what teachers naturally do to support student motivation. The purpose of this study was to prioritize teachers' perspectives by asking them, separate from theory, what they do to motivate students.

Methods: Forty-two practicing teachers completed an open-ended online survey in which they described their personal strategies for motivating students. We used thematic analysis to identify codes and themes from practicing teachers' responses in a qualitative descriptive design.

Results: We identified 36 discrete codes that gave rise to nine themes: relevance, interest, relationships, effort, safe environment, goals, student self-regulated learning, delivery, and rewards. Member checks were completed to provide evidence of confidence in the results.

Discussion: All of the strategies that teachers described align with recommendations motivation researchers would make with the exception of rewards, which, from a research perspective, are often discouraged. We discuss the results in light of motivation design principles and their relevance to partnering with teachers as a ubiquitous influence on student motivation.

KEYWORDS

teachers motivation strategies, student motivation, design principles, qualitative description, cross-theoretical

1. Introduction

Although curriculum, pedagogy, and assessment are the core canon of the teaching profession, teachers also report that supporting student motivation is one of their main responsibilities (Lauermann and Karabenick, 2013). To meet their professional obligations, including that of motivating students, teachers combine their personal histories and beliefs (Pajares, 1992) with professional learning in areas such as content expertise, pedagogical decisions, assessment practices, and classroom management strategies. If teachers choose to access edited volumes, books, dissertations, and journal articles on motivation (e.g., Graham and Weiner, 2012; Corno and Anderman, 2015; Wentzel and Miele, 2016; Elliot et al., 2017), they largely encounter constructs, theories, and applications to practice rooted in research and quite separate from classrooms and teachers. This lack of application to the classroom has been a longstanding concern in the field of motivation (Pintrich, 2003), however, more recently concerns have also be leveraged about the origin of motivation theories as largely "products of White researchers, mostly male, living and working in the United States during the mid-20th century" (Nolen, 2020, p. 2). This origin stands in contrast to the typical demographics of the teaching profession and the classroom full of students

they motivate (Matthews and López, 2020). Out of both professional responsibility and daily necessity, teachers use strategies to exert an influence on student motivation. It is unknown the extent to which these strategies resemble scholarly perspectives. Knowing the extent to which teachers' natural motivation practices converge with scholarly perspectives, can help researchers balance external intervention with strategies to augment teachers' natural practices. The aim of the current research was to prioritize currently practicing teachers' perspectives on student motivation over the top–down perspectives of discrete motivation theories. Toward this end, we used an exploratory qualitative design to answer the following research question: How does a sample of practicing teachers describe motivating their students?

1.1. Teachers and researchers

There are two potential differences between researchers and teachers that could influence the way they view student motivation. First, researchers and teachers experience student motivation under fundamentally different conditions. In pursuing motivation as a scholarly construct, researchers focus on drafting theories, operationalizing constructs, designing surveys, and accumulating evidence (Punch and Oancea, 2014). In other words, motivation researchers are at times very far from the complexity of classrooms (Pintrich, 2003). In contrast, teachers live student motivation in the classroom everyday. Thus, whatever teachers do to motivate students to engage, exert effort, study, and meet outcomes is the embodied reality of motivating students regardless of its evidence. Second, researchers and teachers have different accountability structures. The work of researchers is protected by the principles of academic freedom (Horn, 1999) which allow and even expect researchers to continuously seek new information and insights in their area of expertise. Teachers do not have academic freedom. Rather they are largely governed by accountability structures (Linn, 2006) that ensure they teach a prescribe curriculum so that students meet certain standards. These two differences may introduce constraints on the motivation strategies teachers use, leaving motivation theories potentially far removed from the natural practices of teachers.

These concerns are not new. In 2003, Pintrich insisted that because motivational science was "focused on student motivation in academic settings, the need for use-inspired basic research or work in Pasteur's quadrant is paramount. We [researchers] should be striving for both goals of contributing to basic scientific understanding of motivation as well as developing useful ideas and design principles to improve motivation in educational and other teaching and learning settings" (p. 669). This admonition would never apply to teachers who cannot ignore the daily utility of their actions and may focus on that over evidence. Daniels et al. (2020) demonstrated this differential focus showing that elementary school teachers were more likely to endorse a hypothetical motivation intervention on the basis of qualitative than experimental evidence. In a similar vein, Reeve and Cheon (2016) showed that teachers' belief that motivation interventions are easy to implement even with the classroom complexity and demands was a "functional necessity" (p. 185) for successful implementation.

1.2. Achievement motivation theories

When encountering the literature on motivation, teachers are likely to encounter a field that seems more complicated than simple in its potential to support them in motivating students. In part this is because there are simply so many theories of motivation including but not limited to achievement goal theory (Elliot, 1999), interest theory (Renninger et al., 1992), self-efficacy (Bandura, 1999), expectancy-value theory (Eccles and Wigfield, 1995), self-determination theory (Ryan and Deci, 2000), mindset theory (Dweck, 2008), and attribution theory (Weiner, 1986). The ongoing relevance of these theories to the field of motivation can be highlighted through their inclusion in special issues over the span of two decades (Alexander, 2000; Wigfield and Koenka, 2020).

Although an in-depth review of each of these theories is well beyond the scope of this paper, it is important to recognize that each theory regards motivation as not only quantifiable (i.e., how much motivation) but also as having a quality (i.e., what kind of motivation). By extension, each theory delineates certain qualities of motivation that tend to be associated with beneficial outcomes for students and other qualities that tend to be less adaptive (Elliot et al., 2017). These associations are now largely supported by results of meta-analytic studies that allow researchers to "provide information on average effects with far more statistical power than that of individual studies" (Patall, 2021, p. 142). Mastery-approach goals have been shown to have comparable associations with achievement as performance-approach goals (Mean Pearson $rs = 0.10$ and 0.13 respectively; Huang, 2012). However, mastery-approach goals have stronger positive associations with pleasant emotions (Mean Pearson $r = 0.42$; Huang, 2011), self-efficacy beliefs (Mean Pearson $r = 0.45$; Huang, 2016), and mastery goal structures (Mean $r = 0.49$; Bardach et al., 2020) than other types of goals. This tends to lead researchers to recommend mastery-approach goals relative to other types. In Self-determination Theory, more internally regulated forms of motivation tend to have stronger associations with adaptive outcomes than externally regulated forms. For example, Howard et al. (2021) used bivariate correlations adjusted for scale reliability in her meta-analysis showing that intrinsic motivation has stronger associations with self-reported and objective grades ($\rho s = 0.32$ and 0.13 respectively), effort ($\rho = 0.54$), positive affect ($\rho = 0.52$), negative affect ($\rho = -0.29$), and enjoyment ($\rho = 0.69$) than other forms. Interventions derived from Attribution Theory and Mindset Theory are designed to shift perceived causes from uncontrollable to controllable (Haynes et al., 2009) and mindsets from fixed to growth (Yeager et al., 2019) because of the associated benefits with these cognitions relative to the others. As such, motivation researchers recommend strategies associated with certain qualities of motivation (e.g., intrinsic, effortful, growth-focused, mastery, etc.) and discourage other ones such as rewards and incentives even though there are occasions when such practices can be effective motivators (e.g., Hulleman et al., 2010).

1.3. The evolution of motivation design principles

More than ever before, motivation researchers are acknowledging that the field is "plagued by the diversity of constructs and theoretical approaches" (Pekrun and Marsh, 2022, p. 3) and that the advantages of identifying similarities is important. Leading this call nearly 20 years ago, Pintrich (2003) offered the first set of what he called motivational "generalizations" – or principles that are "supported by good empirical evidence in line with theoretical and conceptual reasoning about the

nature of motivation" (p. 668) and have relevance to designing classrooms. Pintrich highlighted five principles based on adaptive self-efficacy and competence beliefs (Bandura, 1999), attributions and control beliefs (Weiner, 1986; Skinner, 1996), interest and intrinsic motivation (Renninger et al., 1992; Ryan and Deci, 2000), value (Eccles and Wigfield, 1995), and goals (Dweck and Leggett, 1988; Elliot, 1999). For each principle Pintrich offered instructional design recommendations to enact the principle in a way that supports adaptive student motivation and outcomes relative to less adaptive forms. For example, he recommended that teachers "design tasks that offer opportunities to be successful but also challenge students" (p. 672) as a way to build self-efficacy and competence. To enhance interest and intrinsic motivation he suggested "provid[ing] content material and tasks that are personally meaningful and relevant to students" (p. 672). No research, however, presented these design principles to teachers or sought teachers' perspectives on enacting them to support student motivation.

Building on Pintrich's ideas, Urdan and Turner (2005) used achievement goal theory (Elliot, 1999), interest and intrinsic motivation (Renninger et al., 1992), self-efficacy (Bandura, 1999), expectancy-value theory (Eccles and Wigfield, 1995), self-determination theory (Ryan and Deci, 2000), and attribution theory (Weiner, 1986) to develop a list of eight classroom practices theorized to enhance students' adaptive forms of motivation. Their eight recommendations were:

1. Develop and assign academic tasks and activities that are personally meaningful and relevant for students.
2. Develop and assign moderately or appropriately challenging tasks and materials.
3. Promote perceptions of control and autonomy by allowing students to make choices about classroom experience and the work in which they engage. Also, encourage students to view intelligence, learning, and performance as personally controllable by attributing performance to controllable factors such as effort and strategy use. Avoid controlling or coercive language and instructional practices.
4. Encourage students to focus on mastery, skill development, and the process of learning rather than just focusing on outcomes such as test scores or relative performance.
5. Help students develop and pursue proximal, challenging, achievable goals.
6. Infuse the curriculum with fantasy, novelty, variety, and humor.
7. Provide accurate, informational feedback focused on strategy use and competence development rather than social-comparative or simply evaluative feedback.
8. Assess students' confidence, attributional tendencies, and skill levels to help meet their preferences for challenge and to help students approach tasks with realistic expectations and cope with difficulties adaptively (p. 306–307).

For each recommendation, Urdan and Turner identified sources of empirical evidence demonstrating how the principle enhances student motivation and related cognitive, affective, and performance outcomes. They also identified the two most common shortcomings in the research as a reliance on correlational evidence and limited involvement of actual classrooms or observations of teachers' actual practices. Indeed, Urdan and Turner highlighted that teachers had little involvement in this work and stated this as an obstacle that must be overcome for research to make authentic progress.

Most recently, Linnenbrink-Garcia et al. (2016) added the control-value theory of emotions (Pekrun, 2006) to the set of social-cognitive theories important to consider when making generalized recommendations about supporting student motivation. They state that their five design principles are based on "themes [that] run across the discrete theoretical perspectives and research traditions" (p. 232). Linnenbrink-Garcia et al. (2016) focused on reviewing experimental data from intervention studies (Elliot et al., 2017) to support the positive causal effects of design principles on student motivation and outcomes. The five principles are as follows:

1. Support competence through well-designed instruction, challenging work, and informational and encouraging feedback
2. Support students' autonomy through opportunities for student decision making and direction
3. Select personally relevant, interesting activities that provide opportunities for identification and active involvement
4. Emphasize learning and understanding and de-emphasize performance, competition, and social comparison
5. Support feelings of relatedness and belonging among students and with teachers.

The evolution of design principles highlights both the stability of constructs like competence, control, and value as well as a wax and wane of constructs like goal setting and fantasy for emotions and relatedness. Linnenbrink-Garcia et al. (2016) proposed design principles are based on data that shows positive associations amongst students' perceptions of classrooms that are caring, autonomy supportive, enthusiastic, mastery-focused, and relevant and adaptive outcomes such as intrinsic motivation, pleasant emotions, persistence, creativity, and achievement (see Elliot et al., 2017). Despite accumulating evidence, Urdan and Turner (2005) explained that "if principles of motivation research are to be applied in the classroom, teachers will have to endorse them" (p. 312). Although we do not disagree with this statement, an alternative approach to consider how teachers' natural motivation strategies align with existing theories. In other words, motivation researchers could prioritize teachers' perspectives by starting with their strategies rather than the theories. In doing so, both parties could better understand how wide or narrow the disparity is between teachers' natural practices and those based on empirical data.

1.4. Teachers' perspectives on motivational practices

Although motivation researchers offer these recommendations to support students' motivation, a fairly small portion of the studies on student motivation have examined teachers' authentic motivational practices in the classroom and most of them adhered to a single motivation theory. For example, Patrick et al. (2001) used a combination of self-report and observations to identify how teachers implicitly and explicitly communicated mastery or performance goals to students. Students completed self-reports on the perceived mastery and performance structure of their classroom and these reports allowed Patrick and colleagues to identify four classrooms that differed in combinations of mastery and performance goals (i.e., high/low on each domain). Next, Patrick and colleagues applied an observation protocol to determine what types of instructional practices occurred in the

different types of classrooms. Their results demonstrated that teachers in high mastery classrooms focused on learning as active by requiring participation and effort from students and scaffolding those expectations with high levels of social–emotional support for students' wellbeing and progress. Using a similar procedure Anderman et al. (2011) showed that students perceive a classroom as motivational when teachers provided constant support for their understanding, applied skilled classroom management practices, and built strong rapport.

Using discourse analysis Turner et al. (2003) found that when a teacher communicated "constant and explicit support for autonomy and intrinsic motivation, positive affect, and collaboration" (p. 357) students appeared more motivated and showed less negative affect and self-handicapping. A similar series of practices were associated with greater mastery approaches to instruction and fewer performance approaches to instruction in an observational study conducted during the first days of school (Patrick et al., 2003). In addition, Reeve and Cheon (2014) identified a total of 14 specific instructional practices that are used differently by autonomy-supportive teachers compared to controlling teachers to support student autonomy following a self-determination theory framework (e.g., controlling language, choice, etc.).

As an exception to the single-theory approach, Hardré and Sullivan (2008) used a mixed methods design to examine how rural public high school teachers' individual differences and perceptions influenced the motivation strategies that they use in their classrooms. In the quantitative portion of their study, they included a wide range of measures including interpersonal style, mastery and performance goals, teacher and peer factors, as well as a range of motivational strategies. For the qualitative portion, Hardré and Sullivan used written narratives and interviews to shed additional light on the quantitative results. From these sources, Hardré and Sullivan identified the four most common motivation strategies used by teachers as (a) building relationships, (b) providing encouragement, (c) promoting relevance, and (d) giving verbal praise. They also found that the majority of teachers interviewed admitted that they did not know how to motivate their students, they tended to use more intuitive strategies.

1.5. The current study

Motivating students is a daily part of teachers' work. However, little is understood about the strategies teachers choose to meet this task because the discrete theories of achievement motivation were developed by researchers who likely have different priorities than teachers based on their context and accountability. Thus, the purpose of this research was to prioritize teachers' perspectives by exploring the practices they authentically use to motivate their students. One major advantage of this atheoretical approach at the level of data collection is that teachers' lived expertise and skills are not curtailed or constricted to a limited set of motivation constructs.

2. Method

We used a qualitative descriptive design to answer the following research question: How do practicing teachers describe motivating their students? Qualitative descriptive designs are appropriate when the objective is to produce "straightforward descriptions of experiences and perceptions [and] do not require a deeply theoretical context" (Doyle et al., 2020, p. 444). The design allowed us to increase researchers' understanding of what teachers report doing to support student motivation without imposing *a priori* any specific motivation theory on their practices. The procedure was approved by the University's Human Ethics Research Board and had a cooperative activities approval from the school board.

2.1. Participants, procedure, and materials

Teachers were recruited through a snowball sampling procedure that involved circulating the survey link through a variety of social media and email platforms and requesting recipients complete an online questionnaire and forward the link to other eligible participants. Eligibility was stated as being a currently practicing teacher of compulsory level schooling. Daycare providers and post-secondary instructors were not eligible. Forty-two teachers responded consisting of 71.8% women teachers and 28.2% men teachers, with a mean age of 33 years. No ethnicity data was collected at the stipulation of the school board. Teachers had an average of 7.5 years of teaching experience and taught English ($n = 24$), Math ($n = 21$), Science ($n = 19$) or multiple subjects ($n = 27$). Sixty-four percent of participants taught elementary school and considered themselves generalists. Participants wrote responses to one open-ended question *What do you do to motivate your students?*

2.2. Research team positionality

The research team represents one mid-career motivation research and two graduate student authors as well as members of a larger motivation research laboratory who provided informal support and perspectives on the project and analyses. Prior to undertaking any analyses, the three authors sought to identify and make explicit our beliefs and biases (Pietkiewicz and Smith, 2014). First, we believe that teachers are at least partially responsible for student motivation and use a wide range of practices to support motivation. Second, we recognize that teachers may use motivational strategies that we as researchers would not consider beneficial for student motivation. However, no members of the research team are schoolteachers, and therefore we do not assume to know the realities of classrooms in compulsory levels of schooling in terms of motivational demands and sought to openly accept all approaches to student motivation. Third, we have considerable expertise in discrete motivation theories (e.g., Weiner, 1985; Elliot, 1999; Deci and Ryan, 2000; Pekrun, 2006) as well as the associated instructional design recommendations (e.g., Linnenbrink-Garcia et al., 2016). We balanced this expertise with an open mind such that we analyzed teachers' responses without seeking to confirm any specific theoretical orientation.

2.3. Rationale for analysis

As is common in qualitative descriptive designs, we analyzed participants' responses according to a general inductive thematic method (Doyle et al., 2020) following five steps (Thomas, 2006). The first author led the analyses. She began by open coded the written responses and attaching specific codes to each segment. Each code was entered into a codebook (DeCuir-Gunby et al., 2011) that consisted of four columns: codes, definition (i.e., what the code means), anti-definition (i.e., what the code is not), and examples of verbatim quotes that represent the code (see

Supplementary materials). The codebook was shared with the second and third authors and that conversation facilitated the combining of individual codes into themes. Themes were entered into the codebook which was presented to all members of the research laboratory for critique and comment to increase confidence in the process and the results. After the qualitative data was analyzed, interviews were conducted with four practicing teachers as member-checks to establish confidence in the thematic categories. Recruitment for the member-checks similarly used a social media post with interested teachers contacting the first author. The individual interviews were semi-structured, lasted approximately 1 h, and were audio-recorded. Participants received an information letter and signed a consent form. The interview began with each teacher describing her own motivation practices. Next, each participant reviewed the list of themes and provided their thoughts on its accuracy.

3. Results

The inductive thematic analysis resulted in 36 discrete codes that gave rise to the following nine thematic categories: relevance, interest, relationships, effort, safe environment, goals, student self-regulated learning, delivery, and rewards (Table 1). Each thematic category is described in detail next.

TABLE 1 Results of qualitative data analysis: themes, definitions, and codes.

Theme	Definition	Codes
Relevance	Making learning meaningful and relevant to students	Choice
		Make outcomes salient
		Make real world connections
		Point out relevance
Interest	Modeling enthusiasm and sustaining students' interest on activities and tasks	Engage
		Fun
		Good attitude
		Model enthusiasm
		Technology
Relationships	Trying to establish and maintain relationships across domains of their students' lives	Accept emotions
		Validate
		Show interest in personal life
		Develop personal rapport
		Peer support
		Home-school partnerships
Effort	Acknowledging student work without placing value on that same work	Acknowledge accomplishments
		Acknowledge improvements
		Encourage effort
Safe environment	Focusing on making students feel comfortable in the classroom and willing to take risks	Encourage questions
		Safe place to make mistakes
		Decrease stress
Goals	Focusing on setting goals with students	Attainable goals
		Create goals
Student self-regulated learning	Practices used that are focused on students developing self-regulated learning	Self-reflection
		Support students
		Encourage higher order thinking
Delivery	Delivering content in a way that allows students to best engage	Differentiate
		Interactive activities
		Provide additional material
		Variety in teaching
		Use as an example
Rewards	Using accolades, both tangible and intangible, to motivate students	Behavior Plan
		Competition
		Use of tokens
		Praise
		Reward with recognition

3.1. Description of thematic categories

3.1.1. Relevance

Teachers described practices that focused on the meaning and relevance of learning as ways to motivate their students. Relevance was used both in the short term such as letting "them know the importance of the information and how it relates to their every-day [life]" as well as in the long term by focusing on a "sense of accomplishment or post-secondary opportunities." Teachers also used "current and relevant examples" to help students see how topics relate to the real world.

3.1.2. Interest

Teachers used a variety of practices, including their own enthusiasm, as a way to model and sustain students' interest in activities and tasks. For example, teachers described supporting student motivation through their own "general good attitude toward students" and by modeling enthusiasm for subjects or tasks. Statements such as building students' motivation by "teach[ing] with energy and enthusiasm and try[ing] to convey passion about subject matter" were common. Teachers also discussed facilitating student interest in activities by "[attempting] to create engaging activities which spark student interest." They also emphasized the importance of knowing "what [students] like and [trying] to incorporate it into my [classroom]."

3.1.3. Relationships

Teachers used relationships with students and their families as a motivational strategy. Teachers described the importance of validating students and making them feel that their thoughts and feelings are important. One teacher noted that they "[assure students] that their inquiry is always valid" and another encouraged students to "talk openly about the fact that it's totally natural. … to feel frustrated and uncomfortable during learning." Many teachers indicated that they try to develop personal relationships with students and their parents in genuine and caring ways. For example, a teacher focused on "[making] personal connections with students" and also "[developing] a communication path between teacher-student-parents." Teachers also focused on relationships within the classroom, particularly between peers: "I give students opportunities to share their learning with one another."

3.1.4. Effort

Teachers viewed focusing on effort as a way to motivate their students. For some teachers the focus on effort was explicit with statements such as "encourage [students'] efforts" by reassuring them as they attempt work that can be difficult and focusing on effort separate from outcomes. For other teachers the focus on effort was less direct and they wrote about motivating students by recognizing their progress separate from grades or formal standards: "encouragement and acknowledging [students'] progress and accomplishments" and "point[ing] out improvement."

3.1.5. Safe environment

Teachers described how a safe environment was necessary for student motivation. For example, teachers wrote directly that they motivate by ensuring "students feel safe to ask questions" or by "creating a safe and empathetic environment with students where they know it is ok to make mistakes and take risks." In creating this environment, teachers also described decreasing stress in their classrooms, or working to actively lower the level of distress in their classroom.

3.1.6. Goals

Teachers used different types of goal setting to motivate students. First, teachers wrote about creating and setting goals with their students individually and as a whole class. For example, a teacher wrote about motivating students by "making and tracking goals, both individual and as a class." Moreover, teachers wrote about the quality of goals that motivate students, highlighting that goals need to be meaningful and achievable: "[setting] challenging, yet attainable learning goals."

3.1.7. Student self-regulated learning

Teachers described how helping students develop self-regulated learning can be used as a motivational strategy. For example, teachers focused on equipping students with specific skills such as "self-assessing current behaviors, work, and results" that they viewed would in turn help motivate the student. Teachers also described how "encouraging students to look critically [at] what they are participating in" can be used as a motivational strategy. Finally, teachers described these aims as eventually contributing to students' capacity to take on these tasks themselves by supporting students to "build their confidence in their own abilities."

3.1.8. Delivery

Teachers listed a variety of ways they shaped the delivery of their content to motivate their students. These strategies included "[implementing] differentiated tasks," "construct[ing] interactive activities," and "try[ing] to offer as many [hands]-on activities as I can." Teachers also reported specific strategies to sustain the motivation that students bring to class themselves. For example, one teacher wrote "If a student makes a point about something, I'll try to match it with research or an article that furthers their understanding about that point." Teachers also noted using a variety of media and teaching techniques in their practice to help motivate students including "technology, small-group learning, learning centers, and in-class discussions," or "DVDs, corny YouTube videos, and music."

3.1.9. Rewards

Teachers listed a variety of accolades, both tangible and intangible, as part of their motivational strategies. Numerous teachers described using point systems to motivate students. For some teachers, points were used to create "a competition with others in the class" whereas for others the points served more an individual function – for example "[it] is obvious that it is an internal reward for them because they often call out proudly how many points they have." Teachers rewarded students with things other than points. For example, teachers noted "reward[ing] success with recognition and calls home," and "[taking] time to point out instances of good" student outcomes that they wanted other students to model.

3.2. Confidence in thematic categories

Four women practicing Canadian teachers consented to be part of the member checking process, which involved an individual interview. Each participant reviewed the list of themes and provided her thoughts on its accuracy. Participants all indicated a high level of agreement with the thematic categories and described practices that they use in their classrooms that supported each thematic category. Participants noted that they felt that the categories were exhaustive. For example, one teacher said "You hit on all of it" referring to the things she does to motivate her students. Moreover, they did not suggest additional categories or practices to add to the findings when provided with the opportunity to do so: "It's covered a broad level of the main practices that we [teachers] use and that are used in the classroom. I cannot really think of anything that I would add." We take these participants' high level of agreement with the thematic categories, their acknowledgement that the categories felt like an exhaustive categorization of their practices, and their disinclination to add additional practices to the findings as evidence of confidence in the results.

4. Discussion

Our results showed that teachers described nine broad strategies to motivate students. The nine themes we selected represent our interpretation of teachers' descriptions while intentionally putting aside *a priori* theoretical frameworks. The main advantage to this approach is that it allowed us to recognize the important work teachers do everyday to motivate students and the substantial breadth of strategies they bring to bear on that task without constraining or curtailing their responses. We recognize, however, that these are not the only possible combinations of results. In particular, if we had used any number of discrete motivation theories to inductively analyze the data the results could have easily been brought to conform to the theory. For example, it will be obvious to SDT researchers that autonomy, competence, and relatedness are strongly present in teachers' descriptions. Applying SDT exclusively, however, would have ignored that teachers themselves did not provide descriptions alluded to motivation theory or fit under a single theoretical perspective. This underscores the importance of researchers considering a wide range of theories and constructs when partnering with teachers because their practices may not fit neatly into theoretical boundaries.

To facilitate the discussion of deductively produced themes and anchor the ideas generated by teachers to research, we use Linnenbrink-Garcia et al. (2016) design principles as a scaffold. We chose the notion of design principles as a middle ground to make comparisons between teachers' natural strategies and common motivation principles. To help visualize the convergence between our results and these recommendations, we undertook a mapping exercise in which we linked our nine thematic categories to the six design principles (Figure 1). All but one of the

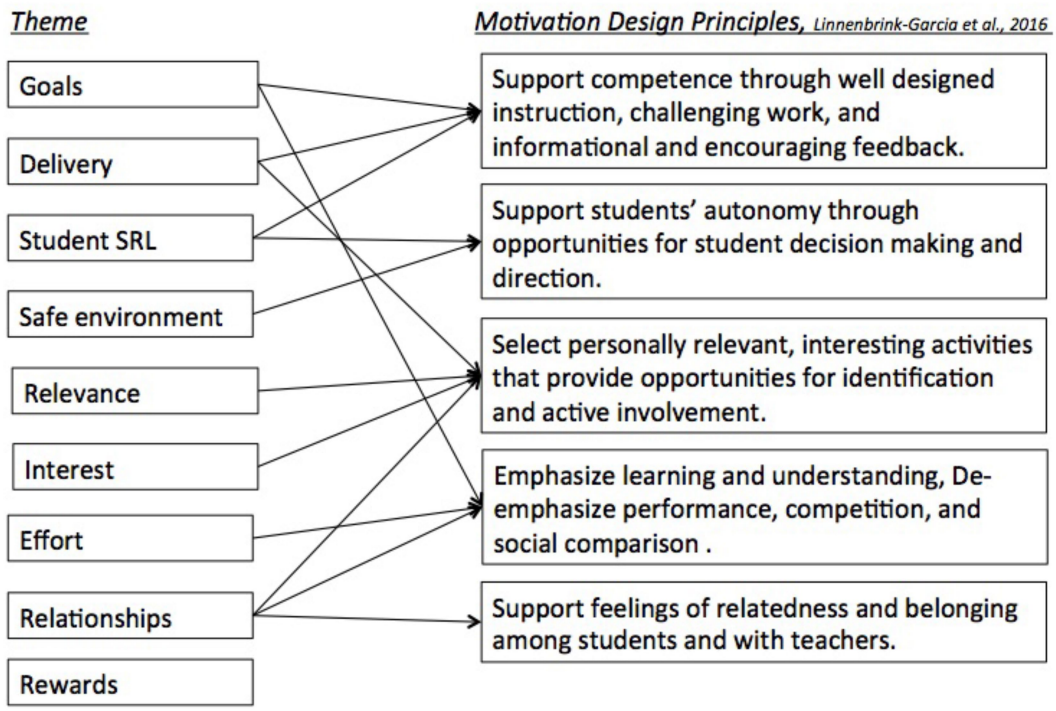

FIGURE 1
Mapping of teachers' authentic motivation practices with motivation design.

thematic categories of motivation strategies could be mapped onto the design principles and some strategies supported more than one principle. Based on our results, we also suggest that although motivation theories have largely scholarly origins, they seem to reflect the practices offered authentically by this sample of practicing teachers.

4.1. Convergence between authentic reports and design principles

The first design principle suggests that teachers can support student motivation by focusing on competence, well-designed instruction, challenging work, and information and encouraging feedback (Linnenbrink-Garcia et al., 2016). This principle reflects elements of three themes identified in teachers' authentic descriptions of how they motivate students. In particular, teachers' descriptions related to Goals, their Delivery, and developing Students' Self-Regulated Learning are consistent with this design principle. However, there were no teacher statements about using feedback to motivate students. This was surprising because formative and self-referent feedback have become common in teacher education and professional development and have been shown to not only improve student performance but also the quality of motivation (e.g., Butler, 1988; Koenka et al., 2019). Some research suggests that indeed teachers' general approaches to assessment can be described from an Achievement Goal Theory perspective and tend to parallel their preferences for mastery and performance approaches to instruction (Daniels and Poth, 2017). Future research into the tension between motivation and all types of assessment will be important to better understand how teachers consider their assessment practices specifically in light of student motivation (see Daniels et al., 2021 for a discussion).

The second design principle suggests that high quality student motivation is sustained when teachers support students' autonomy through opportunities for student decision making and direction (Linnenbrink-Garcia et al., 2016). Researchers (e.g., Reeve et al., 2008) have linked autonomy supportive teaching with many positive educational outcomes including both academic performance and more intrinsic motivation. These principles were most clearly captured by the ways in which teachers wrote about developing Students' Self-Regulated Learning. This connection can be seen in the broader literature where some researchers have argued that autonomous motivation is a specific form of self-regulation. Specifically, Reeve, Ryan, Deci, and Jang explain that "[t]he regulation of behavior when people's interests and self-endorsed values are the reason for acting is said to be *autonomous*" (2008, p. 224). Thus, linking teachers' authentic description of supporting students' autonomy through the development of self-regulated learning seems well justified.

The third design principle suggests teachers can support students' motivation by selecting personally relevant, interesting activities that provide opportunities for identification and involvement (Linnenbrink-Garcia et al., 2016). Teachers wrote not only about using Interest and Relevance directly to motivate students, but also the many ways that they use their Delivery to build interest. They also articulated how having Relationships with students in the sense of knowing what is important to them is necessary in order to maximize interest and involvement. In other words, four themes from teachers' described practices converge with this design principle. Teachers' practices here are consistent with Hidi and Renninger's (2006) four phase model of interest development, namely that they acknowledge there are different ways and strategies that they use to catch and then hold students' interest based on what they know about students. At times, teachers may opt to use strategies that spark student interest in new material, while at other

times, they may use the knowledge they have about students' personal lives to connect learning to their lives or to provide opportunities for additional knowledge development in these areas. Catching and holding student interest is an important concept for motivation as it is associated with the development of mastery goals and, over time, continued exploration of the same material (Harackiewicz et al., 2008).

The fourth design principle has two somewhat contrasting parts: (1) emphasize learning and (2) de-emphasize performance, competition, and social comparison (Linnenbrink-Garcia et al., 2016). In terms of emphasizing learning, this principle mapped onto teachers' statements regarding Goals and Effort. Teachers emphasized intra-individual competence as opposed to inter-individual competence and in doing so, focused on increasing student understanding and mastery of topics. These notions are core to a mastery approach to instruction (Maehr and Zusho, 2009), which encourages students to pursue mastery goals. Mastery goals, in turn, are associated with better understanding of material and desire for more challenging material (Meece et al., 2006; Senko et al., 2012; Paulick et al., 2013) as they encourage students to continue to set goals and focus on progress in learning. Teachers did not write explicitly about de-emphasizing performance, competition, and social comparison in their authentic strategies and thus there was no match in their statements for this portion of the design principle. One reason for this is that participants were explicitly asked to provide examples of what they *do* to support student motivation and any actions they avoid or minimize may not have been captured by these instructions. The extent to which emphasizing learning is naturally paired with de-emphasizing performance and competition is an open area for future research.

Finally, the last design principle focuses on supporting students' feelings of relatedness and belonging among students and with teachers (Linnenbrink-Garcia et al., 2016). Teachers expanded on this principle in their written comments by not only describing relationships with their students, but also relationships among peers and with students' families. Current literature seems to be focusing on the importance of meaningful and caring relationships between teachers and students. For example, Butler (2012), noting that "teaching is an interpersonal endeavor" (p. 727), and has added relational goals to her Goal Orientations for Teaching measure (Butler, 2007). She demonstrated that teachers' goals to create personal and caring relationships with students in their class are distinct from performance and mastery goals. Moreover, teachers who were more relational were more socially supportive of students and likely to acknowledge effort more than teachers who tended toward performance or mastery goals. When thinking of teachers' engagement, Klassen et al. (2013) argued that teaching has a unique demand in terms of requiring social engagement, both with students and with colleagues. In other qualitative research discussing teachers' feelings of responsibility for motivation, Daniels et al. (2018) revealed that teachers perceive relationships as almost foundational to student motivation.

4.2. Divergence between authentic reports and design principles

Teachers described using Rewards in their classrooms to motivate students. As mentioned, the use of Rewards runs contrary to nearly all social-cognitive theories of motivation and is often thought to undermine existing internal forms of motivation (e.g., Deci and Ryan, 1994; Ryan and Deci, 2000). Teachers listed several types of rewards as part of their authentic motivation strategies including teacher and peer recognition, points and tokens, and competition. There is recent empirical research from the perspective of neuroscience that may help negotiate the tension between researchers who suggest avoiding rewards and teachers who seem to continue to rely on them (Hidi and Renninger, 2019). Hidi and Renninger would argue that rewards are a natural part of how humans' brains are wired and that neglecting them ignores a major way that students are neurologically motivated in their environments. The fact that teachers organically discuss Rewards reinforces their relevance in the educational domain and is an important consideration for researchers to reconcile this practical reality with evidence to the contrary.

4.3. Implications

This research makes important contributions to both theory and practice. First, our results reinforce the importance for researchers to recognize that teachers' approaches to motivation may not align precisely with one theory of achievement motivation but are largely what would be conisdered "adaptive" practices. Although motivation researchers have extensive expertise in constructs and theories, teachers' expertise is accumulated in front of students. As such, when researchers ask teachers to complete surveys or conduct observations according to a single theory, they may inadvertently force teachers' responses or practices to conform to the parameters of the theory. Motivation researchers who want to work with teachers need to acknowledge the advantages and limitations of a singularly theory-driven approach.

Second, in terms of practice, teachers appear to use a wide range of strategies to support student motivation, the vast majority of which align with motivation design principles. Perhaps it would be beneficial to encourage teachers in their current practices rather than suggesting a new approach is required thereby balancing practices and classroom realities. In particular, this would be helpful in showing teachers that enhancing student motivation may not be hard or a major change to their typical practice (Reeve and Cheon, 2016). The one exception to this is in regards to the use of Rewards. Although researchers may acknowledge a role for Rewards as a motivating strategy, it is important for teachers to understand the nuances of this particular approach. Targeting the use of Rewards precisely might be an option for professional development. Alternatively, researchers may need to partner closely with teachers to understand Rewards as a motivational strategy in the complex classroom.

4.4. Limitations and directions for future research

It is important to note three main limitations of this research. First, teachers described their motivation practices *via* written responses to an open-ended questionnaire. This is relatively superficial way to collect qualitative accounts related to motivational practices because although some participants wrote a descriptive and detailed account of their practices, others provided point-form comments. To overcome this weakness, we conducted four in-person interviews as a form of member checking. Although those interviews provided depth of conversation and confirmed the themes we identified, we did not use any specific convergence process to gain a strong measure of the level of agreement. Similarly, we recognize that the nine themes we selected are not the only possible combinations of codes. In a field where the theoretical constructs are so well established, the temptation to superimpose theoretical structure to naturally occurring practices is strong. We encourage researchers to continue to weigh the balance of theory and authenticity in future research and partnerships with teachers and schools.

Second, while the thematic results conservatively describe *what* teachers do to motivate their students, they do not link to *when* or *how* teachers use these practices. The contextual aspect of the application of these practices is missing and would again have benefited from in-depth interviews or focus groups. Although it is outside the parameters of the current research to examine these additional questions, they provide interesting avenues for future research of a similar nature or using other methodologies. For example, teachers might use different practices depending on what they are attempting to motivate their students to do. Nolen and Nicholls (1994) asked teachers about increasing or sustaining their students' motivation and found that teachers responded in different ways to the same items, depending on the prompt. More specifically, teachers reported using three strategies when they wanted to increase student motivation and two different strategies when their goal was to sustain existing motivation. These findings suggest that teachers may use different practices depending on the context and underscore the importance of expanding our understanding not only of which motivation practices teachers use, but when and how they employ them.

Finally, the researchers asked teachers to describe what they do to motivate students thereby assuming that the participants viewed student motivation as their responsibility. Indeed, there may be a selection bias with participants who chose to participate being teachers who prioritize student motivation. This assumption needs to be considered because teachers' responsibility for student motivation consistently scores as the lowest of four domains of personal responsibility (Lauermann and Karabenick, 2013; Eren, 2015; Daniels et al., 2016, 2017). One reason for the low score in the area of motivation may be because of its complexity. Both quantitative and qualitative researchers may need to give more attention to the dynamic and complex nature of the classroom in order to understand teachers' role in student motivation – and arguably students' role in teachers' motivation (Frenzel et al., 2021). If researchers acknowledge that teachers and students co-create the motivational climate within classrooms then they should adjust their research methods and questions accordingly (Kaplan and Patrick, 2016). Employing methodologies that allow for naturalistic observation or *in situ* research could provide an important additional illustration of these relationships. These are important areas for future research to bring further precision to understanding teachers' motivational practices.

5. Conclusion

Teachers' perspectives were given priority in this research by allowing them to openly describe the practices that they apply in their classrooms to motivate students. They described a variety of practices, which provided a balanced view of classroom practices that includes both practices that converge with and diverge from motivation theory and current design principles (Linnenbrink-Garcia et al., 2016). However, they are not consistent with any one discrete theory; instead, it appears that a cross-theoretical perspective, focused on broad design principles, is most helpful in understanding the motivational practices that teachers apply in their classrooms and that this perspective should be recognized in research with teachers.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by University of Alberta Research Ethics Board 2. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Funding

This work was supported by a Social Sciences and Humanities Research Council of Canada (SSHRC) Insight Grant (435-2015-0216) awarded to LD and SSHRC graduate fellowships to AR and LG.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2023.1040996/full#supplementary-material

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