

Motivation for Learning Review

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Executive summary

This review was commissioned by the South Australian Department for Education (DfE) to better understand how motivation influences student learning, engagement, and wellbeing at school. Drawing from contemporary research across psychology and education, the review explores how motivational processes unfold in real-world classrooms and how these processes can be shaped through teaching practices, school culture, curriculum, and assessment design. The findings are intended to support the DfE's strategic goal of developing effective learners and to offer evidence-informed guidance on how policies and practices might be refined to better foster motivation at scale.

In recent years, education systems worldwide have shifted their attention from purely academic outcomes to broader indicators of student development, including resilience, persistence, and emotional well-being. These attributes are shaped not only by curriculum content but also by how students experience learning and how they interpret their ability to influence outcomes. The concept of motivation sits at the centre of this shift. It determines how learners direct their attention and sustain effort. How they respond to challenge is also deeply shaped by their motivational beliefs and the supports they encounter. In South Australian schools, where improvement efforts must serve a highly diverse student population, the ability to support motivation across varied learning contexts becomes a foundational concern.

The review highlights that motivation is shaped by perceptions of autonomy, competence, and relatedness, which are in turn shaped by the environments in which students learn. Motivation is not static. It fluctuates depending on developmental stage, context, and the meaning students attribute to tasks. During the middle years, students experience a noticeable drop in motivation, suggesting a need for more targeted support during these years. Motivation also connects closely with self-regulated learning. When students are supported to reflect on their goals, monitor their progress, and adapt their strategies, they are more likely to persist through difficulty and sustain their engagement over time.

Findings from longitudinal and intervention studies demonstrate that motivation can be strengthened through shifts in how learning environments are structured. Approaches that support student initiative, encourage meaningful conversations around goals, and emphasise the learning process over outcomes have been shown to foster more resilient and engaged learners. However, not all strategies are equally effective across contexts. Developmental stage, subject matter, and individual experiences of success or failure all affect how students respond. This reinforces the need for responsive, flexible approaches to practice.

Recommendations

In terms of school-level practices, the review identifies three areas where change is most likely to support sustained motivation. First, curriculum design can promote student agency by building in meaningful choices and connections to students' lives. Second, assessment approaches that include formative elements and invite student reflection on learning processes tend to reinforce motivation more effectively than those focused solely on performance comparisons. Third, professional learning opportunities that equip teachers with knowledge of motivational processes and practical strategies are important for building school-wide capacity.

For classroom teachers, several specific practices stand out. Providing structured opportunities for student choice and collaboration, using feedback to promote selfefficacy, and embedding opportunities for goal-setting and reflection into lessons can all contribute to more motivated learners. Teachers can also support motivation by maintaining high expectations alongside clear guidance, attending to student voice, and creating a climate in which effort is recognised as a key part of learning.

The recommendations emerging from this review align closely with existing strategic goals in South Australia. By viewing motivation not as an individual trait, but as a set of experiences shaped by the learning environment, educators are better positioned to support all students, particularly those at risk of disengagement. This approach offers a promising direction for schools seeking to strengthen learning engagement, improve wellbeing, and foster more equitable learning outcomes over time.

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1. Introduction

This report was commissioned by the South Australian Department for Education (DfE) to examine how motivation shapes student learning, engagement and well-being. Research into the mechanisms of motivation can inform how educators design learning environments that promote sustained engagement and support learner development. As such, motivation directly supports the development of learners who are not only academically capable, but also emotionally resilient and confident in their abilities.

The DfE has explicitly prioritised the development of "effective learners" within its Public Education Strategic Plan (2023-2026). According to this strategy, effective learners are characterised by their ability to think critically, persist when faced with difficulty, regulate their own learning, and maintain high levels of well-being and resilience. Each of these characteristics is fundamentally connected to student motivation, which acts as the catalyst for initiating and maintaining the effort required to achieve these outcomes.

Motivation influences how students approach learning tasks and also how they respond to setbacks and challenges, shaping their academic trajectories and long-term success. By understanding the underlying motivational processes, educators and school leaders can create targeted interventions and supportive environments.

This report explores various theoretical and practical perspectives on motivation in education, highlighting how different motivational constructs, such as intrinsic and extrinsic motivation and goal-oriented behaviours, can inform classroom practices and broader educational strategies. In doing so, the findings presented here support the DfE's ambition to nurture effective learners who thrive academically, socially and emotionally.

1.1 Definition

Motivation has succinctly been defined by Schunk et al. (2014) as "the process whereby goal-directed activities are instigated and sustained" (p.5). In schools, goal-directed activities are centred on learning, influencing how students begin, maintain, and regulate their behaviours (Urhahne & Wijnia, 2023) — ultimately impacting their long term outcomes. As such, the study of motivation is essential to understanding why some students actively engage while others disengage from school participation. From the research, most models of motivation within education are dynamic, shaped by context, and centred on feedback (Wigfield & Koenka, 2020). They describe the environments that support motivation for learning, the impediments and enablers of motivation and the internal processes which drive student focus and effort. Whilst each theory brings different perspectives to the consideration of motivation (explored in section 4), there are some

common concepts explored in multiple theories. We explore these foundation ideas in the following sections.

1.2 Intrinsic vs extrinsic motivation

Sometimes referred to as interest value (Eccles & Wigfield, 2020), and associated with the concepts of situational and personal interest (Lee et al., 2014), **intrinsic motivation** describes "performance of activities for their own sake, in which pleasure is inherent in the activity itself" (Gottfried et al., 2001, p.3). Intrinsic motivation has been identified as underpinning curiosity (White, 1959), and is also associated with experiences of flow (Pekrun, 2024). Researchers have focused on intrinsic motivation as it is a medium to strong predictor of academic achievement (Fong et al., 2024; Lee et al., 2014) whilst also supporting wellbeing (Bradshaw et al., 2022)

Extrinsic motivation, driven by expectations of positive outcomes or avoidance of negative outcomes (Deci & Ryan, 2008; Pekrun, 2024), has long been a cornerstone of behaviourist explanations of motivation (Macmillan & Forness, 1970). Behavioural neuroscientists further describe extrinsic motivation as the exploitation of the environment, contrasting with intrinsic motivation, which is characterised by exploration driven by interest in the unknown (Addicott et al., 2017; Anselme & Hidi, 2024; Cockburn et al., 2022). In western cultures, extrinsic motivation has often been portrayed as both negatively impacting wellbeing (Bradshaw et al., 2022) and as potentially undermining intrinsic motivation by leading individuals to attribute their engagement to external rewards rather than to the inherent enjoyment of the task itself (Lepper et al., 1973).

Both intrinsic and extrinsic motivation however can support behavioural change and recent research suggests that a combination of the two may have an additive effect (Anselme & Hidi, 2024). More contemporary conceptualisations of motivation move beyond the simplistic dichotomy of intrinsic and extrinsic motivation, focusing instead on how a student's perception of their own agency plays a crucial role in shaping their motivation. This shift in thinking has led researchers to emphasise the importance of autonomy (how freely a student engages in a task) as a more powerful predictor of motivation than whether the task is driven by internal or external rewards. This perspective is explored further in the next section, which distinguishes between autonomous and controlled forms of motivation.

1.3 Autonomous vs. controlled motivation

Autonomous motivation relates to the perception that outcomes, whether they be intrinsic or extrinsic, are a direct result of one's actions. This does not imply that you cannot rely on others or that you are singularly responsible for the outcome, but rather that you

have agency (Deci & Ryan, 2008; Patzak & Zhang, 2025). Autonomous motivation is clearly linked to self-discipline, self-control, willpower and behavioural and emotional regulation (Skinner, 2023). There is also significant evidence suggesting that autonomous motivation contributes towards academic success (Girelli et al., 2018; Guay et al., 2010; Santana-Monagas et al., 2025) and autonomy-supportive environments are predictive of student well-being (Vite et al., 2024) and agentic engagement in class (Reeve et al., 2020).

According to some theories of motivation, such as Self Determination Theory (Ryan & Deci, 2000), the level of autonomy is often more important that the intrinsic or extrinsic nature of the antecedents of a behaviour. Intrinsic goals are inherently autonomous as they originate from within; however, internalised extrinsic goals can also have a degree of agency. This process of internalisation occurs when such goals align with personal aspirations (Dinsmore, 2018) or when students recognise the relative importance of a task, motivating them to self-regulate their cognition or behaviour (Deci et al., 2008). Importantly, however, this will only take place when students perceive themselves to be competent in achieving their goals and their needs for autonomy are met (Vansteenkiste et al., 2020). Repetitive internalisations of extrinsic goals, as achieved through positive feedback on agency in goal attainment therefore have the potential to lead to integration (Deci & Ryan, 2012; Skinner, 2023).

Various theorists have also identified and characterised certain autonomous extrinsic task values. These include the utility value of a task, defined as "how well a particular task fits into an individual's present or future plans" (Eccles & Wigfield, 2020, p.5); attainment value, often described as the personal importance of completing the task (Jud et al., 2023); and social value, which involves students forming predictions about the outcomes of actions based on the vicarious experiences of others (Schunk & DiBenedetto, 2020)

Conversely, **controlled motivation** relates to a perception that consequences of actions are unattributable to one's own actions (Filippello et al., 2019; Núñez-Regueiro, 2024). Often associated with demotivational forces, superficial learning and low achievement (Ryan & Deci, 2020), controlled motivation can refer to external regulation such as rewards and punishment when they are perceived to not reflect effort. Lack of agency can also result in internalisation of external influences through feelings such as shame and anxiety (Dinsmore, 2018) leading to withdrawal, disengagement (Graham, 2020) and potentially oppositional defiance (Vansteenkiste et al., 2020). These types of deactivating emotions and maladaptive behaviours can reduce students' motivation to engage in their learning, particularly among certain groups such as males (Opdenakker, 2021).

1.4 Goal-directed behaviour

Goal-directed behaviour is central to most models of motivation. While earlier research often focused on singular academic goals, recent studies have recognised that multiple goals from different aspects of a student's life (e.g., social, emotional, cognitive resource management) can influence behaviour in both synergistic and conflicting ways (Kim et al., 2023). The consideration of goals is particularly important, as a student's assessment of their goals' worthiness, along with the perceived gap between their current progress and goal achievement, can significantly influence the amount of effort they invest (Schunk & DiBenedetto, 2020). Further nuance as to the different types of goals is explored in section 4.

2. The importance of motivation to education

Motivation is a strong predictor of academic outcomes across a wide range of educational contexts. Intrinsically motivated students tend to show greater engagement and higher levels of academic performance (Froiland & Worrell, 2016; Taylor et al., 2014; Toste et al., 2020). These students are more likely to use metacognitive strategies, take initiatives in their learning and view effort as instrumental to success (Zimmerman & Schunk, 2011). Extrinsic motivation, when well-structured and aligned with students' goals, can also support academic achievement, particularly when it is internalised or perceived as meaningful (Cerasoli et al., 2014). For example, students may be motivated by the utility of learning content for future aspirations (e.g., career goals) or by recognition and social validation. While extrinsic motivation has sometimes been viewed as undermining intrinsic engagement, research suggests that when learners feel a sense of ownership over externally-driven goals, performance can be enhanced without compromising well-being (Anselme & Hidi, 2024; Cerasoli et al., 2014). The key lies in how external rewards or expectations are perceived. If they support autonomy and competence, they complement rather than compete with intrinsic motivation (Ryan & Deci, 2020).

In addition, students with autonomous motivation are more likely to engage meaningfully with tasks, persists through setbacks and regulate their own behaviour (Ryan & Deci, 2020). Autonomous motivation has also been linked to higher levels of engagement and metacognitive strategy use in longitudinal studies (Schuitema et al., 2016; Skinner et al., 2008; Stroet et al., 2013). In contrast, controlled forms of motivation, especially when students feel pressured or only externally rewarded, are associated with disengagement and increased drop-out from school (Stephan et al., 2011). Motivation is also deeply tied to student well-being, serving both protective and supportive functions. Learners who experience autonomy and are supported in pursuing meaningful goals tend to report greater life satisfaction, emotional regulation and resilience (Collie & Martin, 2024b; Reeve & Cheon, 2021; Skinner et al., 2012). When learners are intrinsically motivated, they tend to experience fewer symptoms of anxiety and are less likely to disengage from school or face academic burnout (Cheon et al., 2019; Kaplan & Assor, 2012; Reeve & Cheon, 2021). Importantly, motivational climate (i.e., the extent to which school environments support autonomy, relatedness and competence) has been found to shape emotional and cognitive engagement (Ryan & Deci, 2000). Learners who perceive their teachers as autonomy-supportive often feel more confident in their learning and better equipped to manage their progress and cope in constructive ways (Reeve & Cheon, 2021).

Alongside this, the DfE's Wellbeing for Learning and Life Framework reinforces the Department's commitment to student development by highlighting the importance of helping students understand themselves as individuals and learners, develop their interpersonal capacities, and build strategies for managing challenges and progress over time – all of which are informed by motivational theory. These priorities are also embedded in the Public Education Strategic Plan (2023-2026), which calls for engaging and inclusive learning environments that develop student's capabilities and confidence as effective learners. From this perspective, motivational frameworks offer a meaningful lens through which both teaching practice and policy development can be informed and refined.

3. Theoretical frameworks: what shapes motivation?

The key concepts of motivation explored in this review are drawn from six main theoretical frameworks; Self Determination Theory (SDT), Social Cognitive Theory (SCT), Attribution Theory (AT), Achievement Goal Theory (AGT), Situated Control Value Theory (SCVT) and Control-Value Theory of achievement emotions (CVTAE). Although an integrated approach to motivation theories would be ideal (Skinner, 2023), each theory provides distinct definitions and emphasises different aspects of motivation, stages of learning and associated outcomes (Cook & Artino, 2016). Therefore, a brief overview of each theory is provided below to clarify these nuances.

3.1 Self Determination Theory (SDT)

Self-Determination Theory (SDT) originated from early research into intrinsic motivation and has since expanded into a comprehensive framework comprising six interconnected mini-theories (Ryan & Deci, 2017; Vansteenkiste et al., 2010; Vansteenkiste et al., 2020). At its core, SDT examines the relationship between intrinsic and extrinsic motivation, identifying intrinsically motivated behaviours—such as those driven by curiosity—as inherently satisfying our basic psychological needs. Whilst extrinsic motivation is recognised as a natural and often influential driver of behaviour, it typically does not meaningfully satisfy basic psychological needs unless internalised and aligned with personal values (Vansteenkiste et al., 2010).

SDT identifies three psychological needs that all humans innately crave - namely Autonomy, Competence and Relatedness (Deci & Ryan, 2012). Autonomy refers to a student's sense of agency within the learning environment. Research on autonomysupportive learning environments has shown that beyond academic motivation there is significant impact on student wellbeing (Vite et al., 2024), academic performance (Mammadov & Schroeder, 2023), and self-regulated learning (Sierens et al., 2009; Zachariou & Bonneville-Roussy, 2024).

Competence refers to an individual's self-perceived ability to engage effectively in learning. Closely tied to the structure and support provided in the classroom, competence is shaped by reflections on past performance, which inform judgments about future actions and influence motivation to pursue them (Vansteenkiste et al., 2010).

Relatedness refers to the meaningful connections students form with peers, family and teachers, fostering a sense of belonging and inclusion within the learning environment. It is closely linked to psychological safety, providing students with the confidence to take risks, explore new ideas, and learn from their mistakes without fear of judgment or failure. By promoting trust and mutual respect, relatedness encourages collaboration, non-transactional relationships, open communication, and a supportive classroom culture, all of which are essential for sustaining motivation and deep engagement in learning (Knee & Browne, 2023).

Those who don't have their needs met often revert to maladaptive coping behaviours such as extrinsic needs substitutes (e.g. materialism, Unanue et al., 2014), oppositional defiance (Vansteenkiste & Ryan, 2013) and rigid behaviour patterns (e.g. perfectionism, Vansteenkiste et al., 2010). These offer short term feelings of security, stability and efficacy but fail also can contribute to lower wellbeing (Bradshaw et al., 2022; Vansteenkiste et al., 2010).

3.2 Social Cognitive Theory (SCT)

Building on Bandura's foundational work on self-efficacy, Social Cognitive Theory of motivation (SCT) examine the reciprocal interactions between behavioural, environmental, and personal processes (Anderman, 2020; Urhahne & Kremer, 2023). Students are viewed

as active participants, motivated to seek out environments that support their growth and goals. A key aspect of this theory is goal orientation, which focuses on the reasons behind goal pursuit. These motivations often operate within social contexts, where self-efficacy plays a crucial role in influencing students' confidence, persistence, and ability to navigate challenges effectively. If self-efficacy is maintained and you feel as if you are making progress, then motivation remains high, but if you if you feel like you are behind others you will begin to lose motivation.

Efficacy appraisals are derived from four key sources (Schunk & DiBenedetto, 2020). The first is past performance, where previous successes or failures shape outcome expectations and influence the effort invested in future tasks. The second is vicarious experiences, which involve observing others attempt similar tasks, with their successes or failures impacting self-belief. The third source is social persuasion, where encouragement or feedback from others fosters confidence. Finally, emotional states, such as the feelings experienced while engaging in a task, play a significant role in shaping self-efficacy, as positive emotions tend to enhance confidence while negative emotions may undermine it.

3.3 Attribution Theory (AT)

Attribution theory (AT) focuses on the consequences of behaviour rather than its antecedents (Wigfield & Koenka, 2020). It explains how people use reasoning to attribute perceived success or failure to three types of causes: locus of control, stability, and controllability.

Locus of control refers to whether success or failure is attributed to internal or external factors. For instance, achievement on a test might be seen as the result of personal effort and ability (internal) or as a consequence of the test's simplicity or the teacher's expertise (external).

Stability concerns whether the cause of an outcome is consistent and predictable (stable) or temporary and variable (unstable). Stable attributions suggest that the same causes will likely lead to similar outcomes, while unstable attributions imply that causes are transient and less predictable. This distinction influences expectations about whether the same factors will produce the same results in the future.

Controllability is a construct concerned with how much influence a person feels that they had on a cause. This relates to attributions such as effort, luck and environmental constraints and affordances.

The alignment of locus, stability, and controllability influences specific emotional and motivational outcomes. These factors shape our behavioural choices, the time it takes to

initiate a behaviour, the intensity and persistence of that behaviour, and how we reflect on and feel about it afterward (Graham, 2020).

3.4 Achievement Goal Theory (AGT)

Achievement Goal Theory (AGT) also explores attributions to success, but moves beyond traits to consider perceptions, belief and most importantly, the goals that drive motivation (Urdan & Kaplan, 2020). Highlighting that there is more than one way to define success, early originators of the theory started with the dichotomous distinction of mastery and performance goals. Mastery goals related to aims which were focused on the development of competence in a task using self-based standards (Diaconu-Gherasim et al., 2024). These were often associated with interest and led to persistence, positive emotion, the use of deep processing strategies and sometimes achievement (Urdan & Kaplan, 2020). Performance goals were alternately those which were centred on the demonstration of competence based on others' standards.

Later additions to the theory identified the valence of the goals to also be key. For example, we can have performance approach goals which aim to attain competence in comparison to others, and performance avoidance goals which seeks to avoid incompetence in comparison to others (Scherrer et al., 2024). These are both performance goals, but they may have motivational or demotivational consequences.

The nature of AGT means that interventions often target larger contextual factors that promote particular types of goals but this can be difficult without interaction with culture, society and the home context (Urdan & Kaplan, 2020). We can see at the population level that mastery goals are associated with improvements in wellbeing (Yu et al., 2023) and decreases in anxiety and depression (Diaconu-Gherasim et al., 2024). Performance approach goals have been associated with anxiety (Diaconu-Gherasim et al., 2024) and impeded cognitive performance, but also academic achievement (Darnon et al., 2009). Performance avoidance goals are consistently shown to have negatively impacted achievement (Scherrer et al., 2024) but how this can be actioned at an individual level is still being explored.

3.5 Situated Expectancy Value Theory (SEVT)

Situated Expectancy Value Theory (SEVT) integrates the self-efficacy focus of SCT with key constructs from AT, forming a framework that identifies expectations for success (ESs) and subjective task values (STVs) as precursors to motivation. Expectancies for success refer to an individual's belief that they will perform well on a specific task at a specific time, differing from basic self-efficacy, which is more generalised.

The inclusion of "situated" in SEVT highlights the impact of immediate contexts, cultural influences, and developmental processes on motivation, reflecting its dynamic and context-sensitive nature (Eccles & Wigfield, 2020). ESs are determined by multiple immediate contextual factors as are the SVTs. There are four general characteristics that influence subjective task value: intrinsic value, utility value, attainment value, and perceived costs.

The intrinsic value of a task arises from the enjoyment it provides, resembling situational interest. In contrast, utility value considers the consequences of the task, focusing on how it contributes to achieving one's goals. Drawing on self-efficacy and resembling performance goals, attainment value reflects how excelling in a task aligns with one's sense of identity. For example, someone who identifies as skilled in mathematics may be motivated to continue demonstrating this ability.

Perceived costs differ from other task characteristics as they are negatively correlated with motivation. The first type, effort cost, involves evaluating whether the effort required is "worth it" to achieve one's goals. The second, opportunity cost, refers to what one sacrifices to focus on the task, often evident in classrooms when students feel schoolwork encroaches on social time. The third type, emotional cost, pertains to stressors or negative emotional experiences associated with the task, such as the anxiety some students feel in certain subjects.

Developmentally, ESs and SVTs change over time. Eccles and Wigfield's 40+ year longitudinal Childhood Beyond Study has shown that there is pattern of decline in children's academic self-concept (and therefore ESs) and STVs across the school years (Eccles & Wigfield, 2023). Whilst students entering school have distinct self-concepts and STVs, other researchers using the same data set have shown that in subjects such as mathematics and reading, there in a pattern of decline through the years (Jacobs et al., 2002). This is not a homogenous decline however and students from different cultural backgrounds have not always demonstrated this pattern (Wang & Pomerantz, 2009).

Most interventions pertaining to SEVT relate to either developing academic self-concept or providing strategies for changing the value attributions of various tasks and subjects. Particularly promising avenues of motivation research explore the development of utility value through the focus on the learning rather than the product and making personal connections with the learning materials (Rosenzweig et al., 2021; Yeager et al., 2019). Alternatively, studies have explored ways of also reducing the perceived costs of learning (Rosenzweig et al., 2020) but currently many studies are in undergraduate populations.

3.6 Control-Value Theory of Achievement Emotions

Control-Value Theory of Achievement Emotions (CVT), like SEVT, emphasises the interactions between the student, the task, and the teacher. The difference being that whilst SEVT focuses on the impact of the recall of past successes and failure for current and future task engagement, CVT has control and value appraisals as the determinant of achievement emotions (Rubach et al., 2023). Achievement emotions are those directly linked to activities or outcomes related to achievement and are classified under three dimensions focus, valence and activation (Tze et al., 2021).

The first of these dimensions, focus, relates to emotions arising from subjective appraisals of control over a situation and beliefs about whether one's actions will lead to a positive outcome or mitigate a negative one. The intensity of achievement emotions is determined by the intrinsic value of the activity or its anticipated outcome.

Focus can also relate to when attributions are made – prospectively, retrospectively or during the activity. Prospective outcome emotions, such as hope, anxiety and hopelessness (Pekrun, 2006), happen before an activity and are evaluations of whether success is attainable or failure avoidable. Retrospective outcome emotions, such as pride and shame, relate to conceptions of control over the outcome. Activity related emotions are focused on the actions rather that the task such as when a student is in a state of engagement or 'flow'.

Valence demarks emotions that are often perceived as positive (e.g. enjoyment) or negative (e.g. anger). It is important to note however that this valence does not determine motivation by itself. Rather the nature of whether the particular emotion is activating or deactivating within the particular circumstance is key (Muis et al., 2025). For example, if I feel guilty because I believe I could have put more effort into my work but was distracted by friends, this would be a negative retrospective outcome emotion. It arises from valuing the task's outcome but failing to achieve it. However, unlike shame, guilt is likely an activating emotion, as I perceive control over the outcome and am more motivated to increase my effort in the future (Di Leo & Muis, 2020; Graham, 2020). Likewise, I may feel a positive emotion like contentment which may be deactivating as I don't feel like I need to do much more. Four categories of achievement emotion are therefore evident: positive activating (e.g. enjoyment), negative activating (e.g. anger), positive deactivating (e.g. relief), and negative deactivating (e.g. boredom).

CVT predicts the development of virtuous and vicious cycles of emotional feedback, driven by feelings of control and value. When a student values their learning and perceives control over their progress, they are more likely to experience achievement emotions that enhance focus and engagement, reinforcing their sense of value and control. Conversely, a lack of perceived control or value can lead to disengagement, perpetuating a negative cycle.

Interventions based on CVT typically focus on enhancing self-efficacy to strengthen perceptions of control (e.g. Krispenz et al., 2019), implementing attributional retraining to influence retrospective appraisals (drawing from attribution theory, e.g. Bosnjak et al., 2020), and incorporating utility value-building tasks derived from SEVT (e.g. Shin et al., 2019). While CVT overlaps with many other theories, its core focus remains on the emotional precursors and consequences of individual perceptions of achievement, offering a valuable lens for understanding the learning environment. By shaping these emotional experiences, educators can indirectly influence students' motivational states, as emotions are key drivers of effort, persistence, and goal-directed behaviours central to effective learning.

3.7 Summary

Each of these theoretical viewpoints have contributed much to our understanding of what motivates students. They have developed over time as research and academic debate has shaped theories leading to some elements being de-emphasised and other emerging. This has resulted in a shift in motivation-focused interventions, moving from a focus on the individual to recognising the role of a supportive motivational environment and its varied impact on students with diverse identities (Wigfield & Koenka, 2020). Given this evolving understanding of motivation as dynamic and context-sensitive, it becomes necessary to consider how motivational patterns change as students progress through different developmental stages.

4. Developmental trajectory of motivation

Longitudinal studies on student motivation reveal distinct patterns of change across different stages of schooling. Mastery or intrinsic motivation has been shown to increase between 18 and 54 months of age, though this development is influenced by parenting styles (Wang et al., 2023). However, as children progress through school, their mastery orientation tends to decline, with a notable drop occurring towards the end of primary school and into the transition to high school (Hornstra et al., 2013; Wang & Pomerantz, 2009). This shift is accompanied by a broader decline in both intrinsic and extrinsic motivation, which becomes particularly pronounced during the high school years (Corpus et al., 2009; Diseth et al., 2020; Otis et al., 2005), and competence beliefs (Spinath & Spinath, 2005) The downward trend in motivation continues throughout high school, reaching a particularly low point in the years before senior secondary education (Diseth et al., 2020). However, this decline appears to slow as students approach the final years of schooling (Scherrer & Preckel, 2018). Overall, research confirms that students experience their highest levels of motivation in primary school, followed by a significant decrease during high school, with motivation levels improving somewhat at the university level (Martin, 2009).

An influential theory exploring this phenomenon is Eccles et al.'s (1993) 'Stage Environment Theory' which posits that many of the negative psychological impacts of adolescence result from the incongruence between the motivational needs of teenagers and the environments in which they learn. This perspective shifts the focus from individual traits and experiences to broader environmental factors that can undermine agency (Wang & Pomerantz, 2009) and social learning opportunities (Eccles et al., 1993), promote social comparisons (Eccles, 2004; Wigfield & Koenka, 2020) that threaten student self-image (Goudeau & Cimpian, 2021), and create a disconnect between learning and personal meaning (Miele & Scholer, 2017), ultimately leading to reduced motivation in some students.

Furthermore, the relationships between home, social, and school environments can either support or hinder student motivation (Roeser & Peck, 2003), and their relative influence shifts throughout a student's academic journey (Skinner et al., 2022). Understanding these shifting influences invites a closer examination of the specific environmental conditions that help or hinder motivation over time.

5. Factors that impact motivation

Evidence from across motivational theories points to the role of school environments in either nurturing or suppressing students' drive to learn (Deci & Ryan, 2008). Schools can support the basic psychological needs dictated by SDT and the self-efficacy needs of SCT. This leads to promotion of intrinsic and internalised extrinsic goals which drive students and lead to perceptions of success being attributed to a feeling of agency and confidence that their actions will result in predictable, positive results. A better understanding of what shapes these perceptions can inform how learning environments are designed to support motivation. Skinner et al. (2022) suggest that many of these elements come down to eight questions that students implicitly ask themselves as they approach their learning (see Figure 1).



Figure 1: Skinner et al.'s school conditions for effective motivation (republished with the permission of the authors)

This report considers two broad areas of impact – the macro level imposed from beyond the classroom and the micro level coming from within the classroom.

5.1 The Macro level

Many factors influencing motivation are beyond the control of an individual teacher or principal. These include cultural views which can drive goal setting (Bradshaw et al., 2022), home contexts influencing motivational states (Urdan et al., 2007), social structures that exclude particular groups (Skinner et al., 2022) and a myriad of other influences.

This report focuses on aspects of schooling that can be shaped through deliberate practice and policy. The first of these is curriculum design as it impacts the types of learning experiences a student engages in as they progress through school. As has been explained previously, students need to feel that they have agency in their learning (Schunk & DiBenedetto, 2020; Waterschoot et al., 2019), that it is relevant to their life (Assor & Kaplan, 2001; Darling-Hammond et al., 2020; Rickert et al., 2024) and that it is targeted at an appropriate level to nurture feelings of competence (Bureau et al., 2022; Deci et al., 2008). The curriculum shapes what learning is valued, influencing how students engage with content and skills. Providing meaningful, relevant knowledge and skills while allowing students to explore them in different ways enhances motivation.

A second factor relates to the assessment practices of a system. Assessments which remain focused on final grades have been shown to build maladaptive goal orientations (Collie & Martin, 2024a; Yu et al., 2023) leading to the emphasis of ego threatening events rather than task orientated orientations, which can be quite demotivational for some students (Peixoto et al., 2025; Urhahne & Kremer, 2023). Evaluation of learning however remains important, especially when exploring the process of learning through formative assessments, as these can lead to agentic control attributions of learning by the learner and therefore support self-efficacy and perceptions of competence (Anderman, 2020; Graham, 2020; McKellar et al., 2020; Mouratidis et al., 2013).

Finally, the school culture plays a significant role in shaping students' approach to learning. Feeling welcomed, treated as a partner in learning and supported by teachers and peers not only enhances engagement with schoolwork but also fosters positive social persuasion and activates beneficial academic emotions (Skinner et al., 2008). This sense of belonging is a core element of the SDT concept of relatedness.

Autonomy can be nurtured through clear learning pathways that student can choose that aligns with their needs, the use of invitational language, and patience with those facing learning challenges (Reeve & Cheon, 2021). Perceived competence flourishes in schools that implement dialogic co-constructed reporting practices, ensuring that success and failure are attributed to effort and strategic choices rather than static assessments devoid of context and student agency (Thomas & Oldfather, 2010).

5.2 The Micro level

Classrooms are complex, multilayered environments, each presenting unique affordances and constraints to student motivation. Skinner and colleagues (2023; 2022) identify at least four key contexts: the interpersonal context, the learning context, the management structure, and connections to the outside world (e.g., culture, socioeconomic status, home life). Students navigate the intersection of these contexts daily, and no school-based intervention operates within a single context alone. However, research has highlighted specific practices that can potentially enhance academic motivation.

One of the most supported approaches to motivation is autonomy supportive teacher practice which provides learners with the opportunity to make meaningful choices in their learning such as topic selection, presentation formats, and task order of their own volition (Vansteenkiste et al., 2010). This support for agency is not an endorsement of individualism, independence and uniqueness but rather the perception that students have control over their learning process (Bureau et al., 2022; Jansen et al., 2022; Mouratidis et al., 2024; Patzak & Zhang, 2025; Reeve & Cheon, 2024). In fact, one of the key elements of autonomy is the opportunity to choose to seek help when needed (Xu, 2025). Classrooms in which agency is encouraged shifts the perceived locus of control inward and encourage mastery and goals (Mammadov & Schroeder, 2023).

Motivation through autonomy is supported through making learning both meaningful and interesting (Jansen et al., 2022; Rickert et al., 2024). Increased relevance and the provision of explanatory rationales support student intrinsic motivation (Waterschoot et al., 2019) and enhance subjective task value and their related activating academic emotions such as enjoyment and excitement (Pekrun, 2024). To make learning relevant however, it is important to start with the students' prior knowledge and skills to provide optimal challenge (Bardach & Murayama, 2025). This targeting at the zone of proximal development (Vygotsky et al., 1978) is a well-known concept in education, but motivational theory supports the importance of differentiation in order to keep students engaged. Academic emotions associated with inappropriate levels of challenge include boredom and frustration (Lerang et al., 2025) which have been associated with vicious cycles of disengagement (Di Leo & Muis, 2020).

Optimal challenge and feelings of competence are also supported by effective feedback (Mouratidis et al., 2013). This is especially the case then the focus is shifted from output to process and potential setbacks are positioned as opportunities for learning and strategic adjustment. This is because it supports attributions of control (Graham, 2020), improved self-efficacy beliefs (Anderman, 2020) and mastery orientation (Filippello et al., 2019). Feedback on task approach can also be an effective approach as it breaks down complex tasks into smaller, more manageable steps, permitting a greater sense of accomplishment (Likourezos & Kalyuga, 2017).

However, the context in which feedback if provided is also important. Feedback can be quite demotivational in classrooms where there is high achievement pressure and grading which encourages social comparison (Peixoto et al., 2025) or when feedback focuses on innate ability over learning process and effort (Eccles, 2004). In such environments, students may develop maladaptive motivational patterns that undermine their basic psychological needs (Vansteenkiste et al., 2010) and engage in ego-protective behaviours, including self-handicapping and superficial learning strategies (Peixoto et al., 2025). The social context of the classroom is also important for development of perceptions of relatedness. Positive teacher/student and student/student relationships have been proven to be highly important for positive school engagement in all grade levels (Roorda et al., 2019).

Alongside autonomy, clear feedback and supportive social environments, structure is fundamental for supporting motivation. Clear, consistent goals within a safe and predictable learning environment enhance students' sense of competence and lay the groundwork for genuinely autonomous learning (Jang et al., 2010; Mouratidis et al., 2024). This also leads to attributions of stability and controllability (Graham, 2020) through the establishment of mutually understood standards within the environment (Schunk & DiBenedetto, 2020). Structure can slip into controlling behaviours however, which consistently undermine motivation, cause anxiety and can lead to learned helplessness (Cents-Boonstra et al., 2020; Filippello et al., 2019; Patzak & Zhang, 2025; Peixoto et al., 2025; Santana-Monagas et al., 2025).

An effective operationalisation of these motivational factors can be seen in the circumplex approach of Aelterman et al. (2019), which presents teaching styles satisfaction of the basic psychological needs of SDT. This spectrum of pedagogical approach is represented in a circle representing the levels of autonomy and structure provided to the students as represented in Figure 2 and described in Table 1. Research using this model has shown that teachers engaged in attuning and guiding approaches tend to lead to higher levels of students with their needs satisfied (Diloy-Peña et al., 2025). No teacher will act in a particular way, towards all students, all the time and they are impacted by their own emotions, self-efficacy and motivation, but the approach provides guidance on the types of learning environments most conducive to motivation for learning.



Figure 2: The circumplex model of teaching styles (Aelterman et al., 2019)

Table 1: An explanation of the teaching styles of the circumplex model developed from Aelterman et al., 2019.

Style	Teaching goal	Subarea	Common behaviours
Autonomy support	Build understanding and nurture learners interests, preferences and feelings	Participative	 Identifies and acknowledges students' personal interests Actively seeks and integrates student input Offers meaningful choices within learning tasks Allows students flexibility to work at their own pace Encourages collaborative decision- making processes Supports self-directed learning projects
		Attuning	 Makes learning enjoyable by connecting content to student interests Accepts and openly discusses students' negative emotions Actively seeks to understand each student's perspective and abilities Clearly explains the relevance and value of learning tasks Provides rationales that resonate with students' values and goals Adjusts instructional methods to match emotional and motivational states of students
Structure	Starting with prior knowledge and skills, to guide students through effective strategies to master their learning	Guiding	 Provides targeted, timely assistance and scaffolding when needed Breaks down complex tasks into manageable steps to facilitate questions and independent learning Encourages reflective thinking and learning from errors Offers clear, constructive feedback regularly Suggests strategies to improve task efficiency and effectiveness Sets achievable milestones to support sustained engagement

		Clarifying	 Clearly states learning goals and expectations Offers an overview and context of required learning outcomes Regularly monitors student progress and adjusts instruction accordingly Uses consistent routines to maintain a predictable learning environment Highlights key concepts and checkpoints during instruction Provides explicit success criteria for assessment tasks
Control	Pressure students to think, feel and behave in mandated ways	Demanding	 Enforces classroom management through explicit commands and rigid expectations Attempts to shape students' thoughts, motivations, feelings, and behaviours to match teacher expectations Assigns strict roles or responsibilities without consultation Does not encourage student collaboration or permit dissent Implements clear, inflexible consequences for non-compliance Regularly reminds students of potential punishments or rewards based on performance
		Domineering	 Exerts overt power and authority to enforce compliance Expects students to obey directives or face punishment Uses personal criticisms or shame as a disciplinary method Publicly reprimands students who resist or question instructions Demonstrates intolerance for alternative viewpoints or behaviours Relies on fear and anxiety to motivate students
Chaos	Leave students to learn	Abandoning	 Gives up on providing support or direction to students

independently without standards or help		 Permits students to engage in activities of their choice without guidance Assumes students will naturally mature and self-regulate without teacher intervention Avoids intervening even when students clearly require help Displays disinterest or disengagement during student interactions
	Awaiting	 Responds reactively rather than proactively to classroom dynamics Does minimal preparation for possible classroom disruptions or learning difficulties Allows students to dictate classroom activities without teacher influence Waits passively for situations to unfold rather than actively guiding students Provides vague, inconsistent, or unclear instructions Rarely sets or enforces behavioural expectations or learning outcomes

5.3 The influence of socio-economic status and culture on motivation

Socio-economic status (SES) shapes students' educational outcomes through various factors. For instance, higher SES families typically have greater access to educational resources, which supports ongoing academic development. Additionally, such families often have enhanced opportunities to provide tailored academic support. The psychological environment in the home also tends to differ, with more advantaged households typically fostering attitudes and expectations conducive to sustained academic motivation. Students from lower SES backgrounds often experience constraints that affect motivational and learning outcomes, such as limited availability of educational resources, reduced parental availability for academic support, and higher stress levels associated with economic hardship (Aikens & Barbarin, 2008; Tan, 2024). These factors can contribute to decreased feelings of competence, lowered academic self-efficacy, and a

greater likelihood of relying on external motivational sources, such as immediate rewards or performance pressures (Bradshaw et al., 2022).

Moreover, students from economically disadvantaged backgrounds may enter school environments with pre-existing perceptions of limited agency over their academic outcomes, particularly if they have encountered repeated experiences of resource scarcity or unpredictability at home. These early experiences can foster motivational patterns characterised by a focus on short-term outcomes rather than long-term goals, potentially undermining intrinsic motivation and reducing overall engagement with school (Hao Li et al., 2020; Rogelberg et al., 2021; Schulz et al., 2025).

However, the impact of SES on motivation is not uniform, nor is it immutable. Interventions that specifically address motivational needs of students from low SES backgrounds have been shown to significantly improve student engagement and achievement. For example, identity-based motivation interventions help students envision their future academic selves, linking current academic effort to personal and future-oriented goals. These types of interventions have effectively reduced feelings of disengagement, promoting deeper academic investment even among students facing substantial socio-economic barriers (Browman et al., 2022; Oyserman & Destin, 2010; Oyserman & Oyserman, 2015). Similarly, interventions aimed at promoting self-affirmation and reframing negative self-perceptions into positive narratives have proven effective in buffering students from socio-economic adversity, which in turn helps them sustain engagement and build self-efficacy (Borman et al., 2018; Sherman et al., 2013).

Creating classroom environments that acknowledge and affirm the lived experiences of students from lower SES backgrounds can help support their sense of belonging and learning outcomes (Cook et al., 2012; Mills & Gale, 2010). Such validation can help students interpret academic challenges as opportunities for growth rather than indicators of fixed limitations. Supportive interactions with teachers who demonstrate empathy and encourage adaptive coping strategies can help mitigate motivational disadvantages associated with lower SES and, as a result, strengthen students' academic self-concept and intrinsic motivation (Ampofo et al., 2025).

Furthermore, at the system level, educational policies can reduce the impact of SESrelated differences by ensuring equitable access to high-quality instructional resources. Providing targeted tutoring support can also address specific academic gaps among students (Dietrichson et al., 2017). Additionally, offering extracurricular enrichment activities can create environments where students' motivational needs are supported, irrespective of their economic background (Blomfield & Barber, 2011). Professional learning for educators, emphasising strategies to enhance autonomy, competence, and relatedness within economically diverse classrooms, is also necessary for creating equitable motivational climates within schools (Muijs et al., 2004).

Beyond socioeconomic influences, culture significantly shapes motivational dynamics through distinct societal values and educational practices. Different cultural contexts prioritise varying motivational goals, which profoundly influence how students engage with and perceive their educational experiences. Collectivist cultures, such as those prevalent in East Asian contexts, commonly place considerable emphasis on familial and societal expectations. In these settings, students frequently derive motivation from obligations toward family members, teachers, and broader social groups. This cultural pattern often aligns closely with the internalisation of extrinsic forms of motivation, emphasising compliance and duty, which can be particularly salient during adolescence when familial expectations intensify (King & and McInerney, 2014; Tao & Hong, 2014). In contrast, Western educational environments typically prioritise intrinsic motivation and the development of personal agency, promoting educational practices aimed at nurturing individual interests and self-directed learning. Educational systems in these contexts generally foster exploration, individual choice, and personal fulfillment as primary educational outcomes (Ryan & Deci, 2020). However, this cultural dichotomy should not suggest a simplistic binary. Contemporary research increasingly acknowledges that students from both individualistic and collectivist cultures benefit from an educational climate that integrates intrinsic and extrinsic motivation, particularly when students feel autonomous and competent within their educational context (King & and McInerney, 2014).

Parenting beliefs and practices also exert a substantial influence on motivational orientations across cultural contexts. In East Asian cultures, for instance, parenting approaches often stress the significance of academic achievement as a core family value, fostering educational attainment through explicit encouragement of compliance and structured practice. These parenting practices, characterised by explicit expectations and structured routines, have been linked to forms of extrinsic and controlled motivation, where achievement is pursued primarily to meet parental expectations (Cheung & Pomerantz, 2012; Wang & Pomerantz, 2009). Western parental approaches, conversely, more commonly prioritise self-expression, exploration, and the intrinsic enjoyment of learning. Such practices generally encourage autonomy, where students are guided toward finding personal relevance and satisfaction in their educational pursuits (Ryan & Deci, 2020). Despite these differences, recent evidence supports the notion that both intrinsic and extrinsic motivational practices are adaptive across cultures if accompanied by parental warmth, acceptance, and supportive autonomy (Ng et al., 2019; Wei et al., 2019). This balance helps children internalise external expectations effectively, promoting positive outcomes in diverse educational contexts.

Cultural differences also significantly affect interpretations of feedback and responses to academic setbacks. Cultures that emphasise effort and view intelligence as malleable, notably those influenced by Confucian educational values such as perseverance and diligence, often interpret academic challenges as opportunities for growth and learning (Chen, 2023; Fwu et al., 2018). Students in these contexts typically develop adaptive motivational strategies, showing increased persistence and resilience in response to difficulty. In contrast, educational cultures that emphasise innate ability and immediate success, common in more individualistic Western contexts, can inadvertently cultivate maladaptive motivational responses, including heightened anxiety and disengagement when faced with academic challenges (De Castella et al., 2013; Wang et al., 2020).

These cross-cultural contrasts highlight the importance of adopting culturally responsive educational practices and policies. To effectively address motivational disparities linked to SES, educational interventions must align with the specific cultural values, parenting practices, and community dynamics that shape student motivation. A nuanced understanding of these complexities enables the development of educational environments that are genuinely responsive to the needs and strengths of South Australia's diverse student populations. While no single behaviour or strategy can universally foster motivation, schools nonetheless shape the conditions in which students' motivational tendencies develop and evolve. One area where this influence is particularly evidence is how students learn to regulate their own learning processes.

6. Motivation and self-regulated learning

Motivation shapes students' willingness to engage in learning and influences the strategies they use to manage that engagement. Self-regulated learning (SRL) describes the process through which students set goals, monitor their progress and reflect on their approaches to learning. Many theories of SRL directly incorporate motivation as one of their key tenants (e.g. Pintrich, 2004; Zimmerman, 2008). This is quite natural as SRL is essentially a goal attainment activity requiring directed metacognitive regulatory actions (Efklides et al., 2017) shaped by the student's motivation. Many of the antecedents of motivation are also shared by SRL such as autonomy, a focus on process over innate traits and adaptive academic emotions.

A full exploration of the connections between motivation and SRL is beyond the scope of this report; however, a brief discussion of how motivation influences mental effort during student engagement with schoolwork illustrates their interrelated nature. Mental load is an unavoidable aspect of learning, shaped by task complexity and a student's prior knowledge and abilities (Paas et al., 2003). While pedagogies like pre-teaching and scaffolding can

help manage this load, they cannot eliminate it entirely. This means that students will inevitably encounter cognitive challenges that may obstruct their engagement with learning potentially leading to deactivating academic emotions and perceptions of high cost. However, what determines success in tasks is not the absolute level of mental load required but rather the mental effort they choose to invest in overcoming these obstacles and their perception that this is achievable and worthwhile. This distinction between mental load and invested mental effort is crucial (Seufert, 2018). Importantly, mental load is also influenced by metacognitive self-regulation processes (Rolf, 2015). Through SRL, students can strategically direct their mental effort to manage cognitive demands, persist through challenges, and take control of their learning. They can also implement strategies to overcome obstacles that once seemed insurmountable or externally imposed but are now reframed as expected difficulties—demanding yet achievable. In doing so, they shift from passive participation to actively shaping their own learning processes.

This motivation to improve learning processes focuses students on their own ability, induces mastery goal orientations and supports self-efficacy. Likewise, it gives them agency in their learning, leading to feelings of autonomy and competence. Ultimately, a learner has to be motivated to engage in SRL, but the processes of obstacle identification and strategy development within SRL supports future motivation. The melding of these two constructs is probably seen most clearly in the microcosm of a single learning task.

Zimmerman's self-regulatory cycle provides a model of learning task engagement when he divided engagement into three phases: forethought, performance, and self-reflection (Schunk & Zimmerman, 1998). In the forethought phase, students set goals influenced by their goal orientation, assess their self-efficacy for the task, evaluate whether their basic psychological needs are met, and determine the value of the task relative to its personal cost. These judgments occur within an emotional context that can either support or hinder engagement.

During the performance phase, students monitor their progress and begin attributing successes or mistakes to different factors while continuously evaluating whether the task is worth their effort. They experience a range of academic emotions, which may either facilitate or hinder learning, depending on their ability to manage them. Interactions with others—such as peers or teachers—can further shape their motivation by either reinforcing or undermining their effort.

In the self-reflection phase, students evaluate their learning outcomes against their initial goals. Effective self-regulated learners reflect on their learning processes and adjust their strategies accordingly. However, students with performance-avoidance or work-avoidance goals may focus on external metrics rather than learning progress. Their attributions of

success or failure—shaped by beliefs about locus of control, stability, and controllability—affect their emotional response and influence their motivation for future tasks.

Throughout this cycle, motivation and SRL interact dynamically, shaping students' engagement, persistence, and overall learning effectiveness. SRL cannot work without motivation, but SRL produces the types of adaptive motivation that lead to lifelong learning. Understanding how motivation manifests in educational contexts, and how it shifts over time, is therefore a necessary step in designing timely and effective responses. Alongside educators' professional judgment, research offers structured ways to evaluate how students' motivation develops overt time and how it contributes to their learning outcomes.

7. How is motivation measured?

Measuring motivation helps educators and researchers understand the reasons behind students' engagement, persistence or withdrawal from learning. In schools, having reliable ways to assess students' motivation is essential part of responsive and informed educational practice. Reliable and valid measures make it possible to respond more effectively to learners' needs, whether by identifying signs of disengagement early or by assessing whether specific interventions are having the desired impact over time. In educational contexts, two primary approaches are commonly used to assess motivation: self-report questionnaires and behavioural indicators.

7.1. Self-report questionnaires

Self-report instruments are the most widely used method for assessing student motivation. Among the most widely cited tools developed withing the framework of Self-Determination Theory is the Academic Self-Regulation Questionnaire (SRQ-A), which measures different forms of regulation such as external and intrinsic motivation in relation to school-related activities (e.g., I try to do well in school so my teachers will think I'm a good student; I do my classwork because I want to learn new things). The SRQ-A has been validated in multiple studies, including Ryan & Connell's (1989) original sample of primary and middle school students in the United States. These studies reported high internal consistency and construct validity.

Another widely used tool is the Motivated Strategies for Learning Questionnaire (MSLQ), originally designed for use with university students, but can be adapted for secondary school students. The MSLQ includes motivational subscales such as intrinsic and extrinsic goal orientation, task value, and control beliefs. It was originally validated with 380 university students in the United States (Pintrich, 1991), and subsequent studies have adapted and validated it across diverse educational settings and languages. Although it is not based directly on SDT, it overlaps conceptually in its attention to learners' beliefs and values.

For younger learners, the Children's Academic Intrinsic Motivation Inventory (CAIMI; Gottfried, 1990) is often used to access domain-specific intrinsic motivation in subjects like maths, reading and science and is typically used with students in Years 4 to 8. The CAIMI has been used in large school-based studies and has demonstrated predictive validity for academic outcomes.

7.2. Observational tools

Although most measurement of motivation in schools relies on self-report, observational tools offer ways to assess motivational processes based on student behaviour in classroom contexts. These tools are particularly useful when self-report is not feasible (for example with younger children) or when additional, external perspectives are needed to understand motivational dynamics.

One example is the Classroom Assessment Scoring System (CLASS), which captures teacher-student interactions across emotional, instructional and organisational domains (Pianta et al., 2008). Although not explicitly designed as a motivation measure, CLASS includes elements like student engagement, teacher responsiveness and support for autonomy, all of which influence motivation. It has been validated across thousands of classrooms, including in large-scale evaluations of early childhood, primary and secondary settings (Hongli Li et al., 2020).

Skinner and colleagues (2009) developed another tool validated with Year 3 students that captures teacher perceptions of students' behavioural and emotional engagement and disaffection. It focuses on how consistently students show effort, interest, or withdrawal from learning activities, offering strong links to motivational theory and developmental outcomes. Additionally, the Behavioural Observation of Students in Schools (BOSS; Shapiro, 2004) protocol allows teachers or trained observers to assess engagement by recording behaviours such as active participation, passive engagement, and off-task actions in real-time. This instrument was not originally designed to measure motivation directly, but the behaviours it captures are often interpreted as indicators of motivational engagement. It is especially useful for identifying context-specific patterns of engagement in classroom settings, making it a helpful diagnostic tool for supporting individual students.

7.3. Learning analytics

Digital learning platforms offer new opportunities to capture motivation-related behaviours through trace data (Gabriel et al., 2022; Schumacher & Ifenthaler, 2018). These data include patterns such as time-on-task, frequency of voluntary task selection, help-seeking within platforms and persistence with challenging material. When interpreted through appropriate theoretical frameworks, digital trace data can provide insight into student's motivational engagement without interrupting the learning process.

For example, learning analytics can be used to detect when a student avoids effortful work or frequently switches tasks, which are both potential markers of controlled or diminished motivation. Researchers such as Winne (2017) have highlighted the potential of such analytics to support formative assessment and adaptive learning environments. However, these data are sensitive to context and task design; task structure, interface usability, and external incentives can all shape behaviour in ways not directly tied to motivation. As such, digital trace data are best used in conjunction with other sources of evidence.

7.4. The Wellbeing and Engagement Collection (WEC)

In South Australia, the DfE collects population-level data through the Wellbeing and Engagement Collection (WEC). Although not a targeted measure of academic motivation, the WEC captures several constructs that relate to motivational theory, including perseverance, engagement with school, and emotion regulation. These elements provide insight into how students experience their learning environments and whether they feel connected, supported and capable.

Importantly, the WEC is designed to provide a system-level overview and is not an individual diagnostic tool (Gabriel & Brinkman, 2024). This means it is most useful for identifying broader trends and informing policy and school improvement planning, rather than evaluating specific student needs. When interpreted alongside other forms of classroom-level data, WEC results can help guide initiatives aimed at enhancing motivation-supportive practices across schools.

7.5. Limitations and considerations in measuring motivation

There is no single, universal tool for measuring motivation, and this reflects broader conceptual and methodological challenges in the field. Motivation is not a singular construct, and it is defined differently depending on the theoretical perspective adopted. For example, tools based on EVT focus on task value and competence beliefs, while those informed by SDT assess types of regulation and psychological need satisfaction. The theoretical basis selected determines which constructs are measured and how they are operationalised, meaning there can be no universally accepted or comprehensive tool for measuring motivation.

Additionally, motivation is dynamic. It can shift in response to changes in environment, task, feedback and student experiences. Despite this, motivation is often measured as if it were static, typically using cross-sectional survey design (Schunk & DiBenedetto, 2020). This mismatch can limit the ability to understand how motivation develops or fluctuates over time. Corpus et al. (2009), for example, found that the time of year significantly influences reported motivation levels. Both intrinsic and extrinsic motivation tend to decrease from the start to the end of the school year, with the drop in intrinsic motivation more noticeable among secondary students, and the decline in extrinsic motivation more evident among primary students. These findings suggest the need for more frequent, developmentally-sensitive approaches to measurement that capture how motivation evolves in context.

These complexities underline the importance of combining theory-driven, reliable instruments with thoughtful interpretation. Measurement should be viewed as tool for evaluation and as part of a broader cycle of inquiry, reflection, and responsive practice.

8. Evidence-informed interventions to improve motivation

Efforts to support motivation have increasingly turned to structured, theory-informed interventions aimed at improving learning outcomes and wellbeing in real-world settings. Many of these originate from Health (e.g. Knittle et al., 2018; Ntoumanis et al., 2021), and they are less evident in education. However, Lazowski and Hulleman (2016) identified 92 studies in their meta-analysis of motivational interventions in authentic educational contexts. Their findings indicated that motivation is malleable to intervention, with an average effect size of d = 0.49. The most prevalent theoretical frameworks were Self-Determination Theory (SDT) and Attribution Theory (AT), with the greatest impacts observed in primary and middle years.

Motivational interventions have demonstrated greater importance to encouraging academic engagement than structural changes (e.g. single sex schooling, special classes for gifted students) or background factors (parent factors, gender), but less important than teacher variables (e.g. teacher-student relationships, teacher beliefs and behaviours) (Jansen et al., 2022). To maximise their impact, interventions need to target areas where motivation can be most effectively influenced. As noted in Section 5, developmental level plays a critical role in determining which interventions are most effective. Below, we highlight key studies across different levels of schooling.

8.1 Early childhood and Primary school

Literacy development has been a consistent theme in motivation research focusing on early childhood and primary years, particularly in efforts to counter the decline in intrinsic enjoyment of reading and writing (Erickson, 2023; Wehmeyer et al., 2017). Interventions in this area have successfully targeted students' self-concept and task value associated with literacy, showing improvements in student motivation and engagement with reading activities (Marinak, 2013). Furthermore, autonomy-supportive practices have proven beneficial, highlighting the importance of providing learners with meaningful choices and opportunities to connect reading and writing with their personal interests (McBreen & Savage, 2021). Despite these positive outcomes, some interventions unintentionally increased extrinsic motivation through reward systems, and the potential negative impact of such extrinsic rewards on intrinsic motivation remains unexplored (van der Sande et al., 2023).

Beyond literacy, other subject areas such as STEM and physical education have begun to explore motivation-focused interventions, though these studies remain relatively limited. STEM interventions often centre around fostering students' perceptions of task relevance and utility value (e.g. Shin et al., 2019). Similarly, motivational interventions in physical education have primarily targeted fulfilling basic psychological needs, with activities designed to books student engagement through structured play and gamification strategies (Quintas et al., 2020; Sotos-Martínez et al., 2023).

Another approach in early years and primary education has involved shaping students' motivational beliefs by addressing their attribution styles. For example, (Hudley et al., 2007) implemented an attribution retraining intervention designed to shift young learners' perceptions of academic setbacks from fixed trait-based attributions (e.g., lack of ability) towards more controllable factors such as effort and strategy use. This intervention was successful in increasing students' persistence, reducing maladaptive attributions, and promoting resilience in the face of academic challenges.

8.2. Secondary school

Motivation-focused interventions during secondary school have primarily addressed the well-documented reduction in student engagement that often emerges during adolescence, with particular emphasis on the challenges face as they transition into high school settings (Smith et al., 2023). Unlike interventions in the primary years, secondary-level interventions frequently adopt broader, socially oriented approaches. These

interventions emphasis the influence of students' future orientation and social identity, elements that significantly impact adolescents' motivation and academic engagement (Legault et al., 2006).

Effective interventions at this level often involve explicitly targeting students' self-efficacy and perceptions of competence. (Sherman et al., 2013) showed that self-affirmation interventions, which bolster students' positive self-perceptions, effectively increased academic motivation, particularly for students facing stereotype threats or performance anxiety. Similarly, metacognitive instruction interventions (Zepeda et al., 2015) promote students' self-regulatory skills, positively influencing their academic motivation and performance.

Interventions promoting future-oriented thinking, such as Oyserman et al.'s (2002) identitybased motivation intervention, encourage students to envision their future academic selves. This approach leads students to value educational activities more highly, promoting academic engagement and long-term motivation. Likewise, utility-value interventions emphasise making coursework personally meaningful, demonstrating effectiveness in improving both motivation and academic performance, particularly in science (Hulleman & Harackiewicz, 2009).

Teaching strategies that focus on autonomy and personal relevance have shown measurable benefits for student motivation. Approaches that offer students choices and align learning with their own interests tend to encourage greater engagement and deeper investment in academic tasks. Interventions focusing explicitly on students' interest in content enhance motivation by linking academic material to students' personal relevance and emotional engagement. One study conducted with Year 9 students showed that the perceived personal significance of reading materials increased intrinsic reading motivation and contributed to more sustained reading behaviours over time (Schaffner & Schiefele, 2007).

The Teaching for Transformative Experiences in Science model developed by Pugh et al. (2017) offers a framework to support deep engagement through science instruction that encourages students to connect personally with content in ways that transform their perception of the world. In their study conducted with Year 9 students, learners were encouraged to reinterpret everyday experiences, such observing weather changes, through the lens of scientific concepts. Students in the intervention group reported higher levels of motivation and greater learning compared to students in the control group.

Framing tasks around intrinsic goals, such as developing new skills or deepening understanding, consistently outperforms external rewards or competition in maintaining

long-term motivation (Vansteenkiste et al., 2004; Vansteenkiste et al., 2005; Vansteenkiste et al., 2008). Additionally, Martin (2008) investigated a multidimensional intervention targeting adaptive motivational behaviours and cognitive strategies. This approach showed potential in promoting positive emotions and mastery orientations, however the study relied on a relatively limited sample (53 Year 10 and Year 11boys in Australian high schools) and additional research is needed to examine the effectiveness of the intervention across a wider range of school settings and student populations.

9. Policy implications and recommendations

9.1. Implications

This review highlights the importance of motivation not only as a predictor of academic outcomes, but as a central mechanism through which students engage with, persist in, and make meaning from their learning. Understanding motivation as dynamic and context-dependent has significant implications for how educators, school leaders and policy-makers design, implement and evaluate educational practices.

First, the findings suggest that motivation cannot be addressed in isolation from broader structural and relational factors. School and system-level practices can directly shape learners' motivation by either fostering or hindering their sense of autonomy, competence and relatedness. For example, assessment practices that emphasise competitive comparisons or rely excessively on extrinsic rewards punishments can reduce intrinsic motivation and lead to anxiety or avoidance behaviours. Additionally, the relational dynamics within classrooms, including the quality of teacher-student interactions and peer relationships, profoundly affect students' sense of belonging and emotional security, which are foundational for sustained engagement. This highlights the importance of prioritising environments that support autonomy and encourage meaningful learner participation within instruction and assessment practices that are responsive to developmental needs.

Second, the conceptual distinctions between types of motivation (e.g., intrinsic vs. extrinsic, autonomous vs. controlled) have practical relevance. For example, while extrinsic motivators such as grades or rewards may prompt short-term compliance, their impact on sustained engagement depends on how they are interpreted by the students. When extrinsic goals are aligned with students' interests or values in ways that support agency, they can be internalised and lead to more meaningful forms of motivation. This suggests that schools should carefully consider how performance expectations and external incentives are used.

Third, the measurement of motivation must be approached with care. Although validated instruments and observation protocols can offer useful indicators, educators and policymakers must be cautious about the way this information is used. Motivation is a complex, context-sensitive construct that cannot be reduced to a single score or interpreted in isolation. Data must always be read in light of the broader educational and relational environment in which it is collected. For teachers, motivational assessments can inform reflective practice and differentiated support but should not be used to categorise students or make assumptions about ability or intent. For school leaders and policymakers, motivation data should not be used as a high-stakes accountability metric. Instead, it should inform systems-level efforts to improve learning environments, such as promoting autonomy-supportive practices, strengthening teacher-student relationships, or designing learning experiences that feel meaningful and relevant to students' experiences and goals.

Finally, the evidence presented here reinforces the idea that motivation is not a fixed trait but a developmental process that can be shaped over time through the design of learning environments. In particular, the sharp decline in motivation during the middle years of schooling points to a need for focused support during transition points and the design of interventions aimed at enhancing students' sense of competence through structured goalsetting and providing targeted emotional support.

9.2. Recommendations

Drawing on the findings of this review, we suggest the following recommendations for different stakeholder groups:

Education system

- Carefully consider changes to grading in order to prevent social comparison and the undermining motivational effects of extrinsic rewards and punishments
- Support promotion of Self-Regulated Learning as a structure by which to support motivation
- Embed motivational principles into curriculum and assessment design
- Build teacher capacity to use evidence-based attuning and guiding pedagogies
- Review current educational initiatives for their de/motivational aspects that can be strengthened or weakened
- Research cohort specific (e.g. SES, gender, cultural background) methods by which to promote engagement with learning and share these findings with the field

- Utilise current wellbeing measures such as the Wellbeing and Engagement Collection to track changes in student learning motivation in response to policy decisions
- Develop specific interventions targeting the motivational dip evidence in the early years of high school

Schools

- Explore ways of strengthening feedback mechanisms within the school which provide actionable knowledge to students about their own learning
- Work with the wider community to promote a greater understanding of the importance of structure and autonomy in education
- Prioritise motivation and growth mindsets as a key outcome of school alongside the acquisition of knowledge and skills
- Provide professional learning, and support professional learning communities, identifying key contextually relevant elements of student engagement with the learning
- Elevate student voice in changes to school environments or practices
- Implement whole-school approaches to student wellbeing and emotional climate

Classrooms

- Cultivate a sense of belonging and connection where students can see their learning as reflective of their wider life
- Nurture self-efficacy through appropriate challenges, supportive structures and effective feedback on learning processes
- Empower student choice and control over their learning pathways
- Promote mastery goals through reflection, learning goal setting and a focus on learning strategy development
- Reframe setbacks to learning as a part of learning and an obstacle which can be overcome with effective strategies
- Support SRL culture in the classroom to provide the structure and autonomy needed to engage effectively with their learning and their peers

10. Future directions

This review has consolidated evidence on the critical role of motivation in shaping student learning, engagement and well-being. However, the complex and dynamic nature of motivation means there is still much to explore. Future work could involve more targeted reviews of specific elements raised in this report, such as thorough reviews of motivation measures that can be applied in classrooms, to guide the development of evidenceinformed classroom practice and broader policy decisions.

Given the DfE's commitment to nurturing effective learners, there are several promising avenues for future research. Longitudinal studies capturing how student motivation changes across schooling and how this connects to well-being and academic achievement could offer meaningful evidence to guide policy and practice. Future studies could be co-designed using WEC data, with particular attention to learner development and equity. These types of studies are particularly prescient in the complex motivational landscape of early adolescence and the transition from primary to secondary education.

As highlighted in many theories of motivation, seemingly straightforward strategies—such as rewarding students with good grades—can, in some cases, actually undermine intrinsic motivation. Another essential function of research therefore would be to examine both existing and emerging interventions used widely in education through the lens of motivational research, to avoid practices that may compromise learner engagement and long-term wellbeing. This may lead to augmentations which deliver the intended outcomes of interventions whilst supporting the students' motivation to learn.

Finally, there is strong potential to co-develop and pilot school and classroom-based interventions grounded in the theoretical insights outlined in this report. This could include small scale trials of practices that support intrinsic and autonomous motivation or professional learning modules and curated communities of practice that support teachers in adopting motivationally attuned pedagogies. Ongoing collaboration between research and practice will help ensure that motivational science continues to inform the development of high-quality, equitable learning environments across South Australian schools.

11. Conclusion

Motivation research offers more than a way to understand student engagement. It provides a perspective on learning that goes beyond performance and compliance. It asks educators, schools and systems to attend to how students come to see themselves as learners, and how this shapes their willingness to participate, take risks and keep going when things become difficult.

By conceptualising motivation as context-dependent and developmental, the emphasis shifts from fixed individual attributes to the broader environments that enable or inhibit motivation over time. This reframing carries significant implications for practice. It directs attention toward learning conditions that help students experience a greater sense of agency in their learning. Strengthening perceptions of competence may involve refining the way learning is sequenced and supported, ensuring that students are able to recognise their own progress. Motivation is also more likely to be sustained when learners perceive a personal relevance in what they are learning, allowing them to connect school experiences with broader aspirations and values.

Rather than relying solely on large-scale reforms, this perspective highlights how subtle shifts in instructional language, feedback practices, task framing and relational dynamics can alter how students interpret academic effort and success. These interpretations, in turn, shape whether learners are likely to engage meaningfully and approach learning as a valuable and attainable pursuit. Motivation, then, is not just an outcome to be measured, but a process that can be cultivated to support academic development and well-being.

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