



LEARNING SKILLS / OVERVIEW

How to help students develop a 'growth mindset'

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Summary *Motivation plays a significant role in student learning. Students with high motivation levels tend to have the best learning outcomes. Motivation is particularly useful in encouraging persistence in applying effort to a learning task and trying new approaches. Here we outline 12 effective strategies for teachers to cultivate and maintain students' motivation. We explain these strategies and give practical tips on how to best apply them.*

Why motivation is important

Motivation has a large impact on academic achievement. It is useful for student learning in three ways. Motivation:

- activates or energises behaviour
- directs behaviour
- develops persistence in these behaviours.

The potential for motivation lies within individuals, but it can be influenced by the environment, and developed and maintained with the use of particular motivational strategies.

There is plenty of research which points to strong links between levels of motivation in students and their learning outcomes. Students with the greatest levels of motivation achieve the highest performance levels. Students most at risk of failing tend to have lower levels of motivation. In addition, performance and achievement are likely to be influenced by teachers' low expectations, and compounded by teachers' overuse of ability grouping.

Research carried out in New Zealand demonstrates a strong connection between academic outcomes and students' self-reported motivation levels. Students that aimed to be "doing my best" earned more NCEA credits and grades than those that aimed for "doing just enough".

Motivation is primarily influenced by:

- interest in the task
- the value that the task holds for the person
- the expectations a person has about their success, or otherwise, at the task.

These three influences can interrelate. Interest can be triggered by learning about the value of the task, and further reinforced when the person does well at the task and consequently experiences positive feelings.

Types of motivation

Students can be *intrinsically motivated*, which means that it is their personal feelings (pleasure, interest, enjoyment) and aspirations that they associate with learning that motivate them, and that they are interested in learning for the sake of learning.

Alternatively students might be *extrinsically motivated*, which means they are motivated by external aspects, such as rewards or the threat of punishment.

On the other hand, students might be entirely '*amotivated*', instead feeling coerced into action by pressure from teachers or students.

Intrinsic motivation can be a much stronger form of motivation, leading to all kinds of positive learning behaviours, including positive engagement, persistence, cognitive flexibility, preference for challenge, adaptive coping strategies, problem solving, and greater conceptual learning and memory, which are positively correlated with achievement.

In contrast, students who engage in learning activities and tasks without an internal source of motivation, personal will and perceived choice, lack the motivational values of interest, involvement, and a desire to be challenged and persist. Sometimes students who are initially extrinsically motivated in a learning activity may develop intrinsic motivation as they engage and derive enjoyment and a sense of accomplishment in their work.

Furthermore, everyone tends to move between intrinsic and extrinsic motivation depending on the particular activity and task. Overall, research has found that intrinsic motivation tends to diminish as students progress through school.

Strategies for motivation

Many theorists define motivation as arising from a need to satisfy psychological desires for autonomy, competence and connection. Therefore motivational strategies focus on supporting students' core goals to experience personal growth (self-enhancement), to feel competent (through optimal challenge and self-improvement), to be positively related to others (through engagement in social interaction) and to be autonomous and in control of their outcomes.

Although motivation is highly influenced by student characteristics, the classroom context also plays a role in influencing student motivation. High levels of motivation and engagement are supported by the following 12 factors:

1. Students' sense of membership of the class		2. Strong relationships	
<i>What matters:</i>	<i>Strategies:</i>	<i>What matters:</i>	<i>Strategies:</i>
Feeling accepted and valued Perceiving the environment as fair and trustworthy	Frequent, pleasant interactions Shared sense of purpose Provide students with personal support Ensure student satisfaction and success	Positive relationships with teachers and with peers Emotional and social support	Teacher demonstrates sensitivity, kindness, care and concern Fair treatment
3. Task interest and engagement		4. Relevance and importance	
<i>What matters:</i>	<i>Strategies:</i>	<i>What matters:</i>	<i>Strategies:</i>
Positive emotions and attitudes (positive 'affective' climate) Enjoyment of learning	Provide choice Hands-on activities Personalisation Materials related to individual interests Humour	Perceiving learning activities and purposes as important and relevant	Focus on central tenets and universal themes Invite students to put their interests into the topic Investigate real life use of knowledge and strategies Optimal challenge Elaboration and summaries of what students are learning

5. Connections with students' goals, values and identities		6. Student autonomy and responsibility	
<i>What matters:</i>	<i>Strategies:</i>	<i>What matters:</i>	<i>Strategies:</i>
Relating current learning to personal goals, current and future activities, and identities	<p>Teacher describes rationale for learning</p> <p>Imagine future adult careers, and goals</p> <p>Make links to recreational activities</p> <p>Inform parents of importance of subject</p> <p>Invite students to generate connections with their interests</p> <p>Make learning compatible with students self-identities</p>	<p>Being empowered through initiative and choice</p> <p>Having opportunities to adapt learning in its level of challenge as well as to students' interests, values and goals</p>	<p>Repeated opportunities for appropriate, scaffolded choices</p> <p>Unrestricted (but not overwhelming) choice</p> <p>Choices related to students' ability to self-regulate as well as instructionally irrelevant choices</p> <p>Opportunities to self-adapt tests and assignments</p>
7. Students' sense of self-efficacy		8. Goal setting and review	
<i>What matters:</i>	<i>Strategies:</i>	<i>What matters:</i>	<i>Strategies:</i>
<p>Feeling competent</p> <p>Expectations of success</p> <p>Challenge balanced with recognition of skill level</p>	<p>Feeling competent</p> <p>Expectations of success</p> <p>Challenge balanced with recognition of skill level</p>	<p>Purpose and structure for learning</p> <p>Reason for effort and for persisting</p>	<p>Set challenging (and appropriate and achievable) goals</p> <p>Communicate belief students can succeed</p> <p>Regularly review progress towards goals</p>
9. Co-operative learning		10. Feedback	
<i>What matters:</i>	<i>Strategies:</i>	<i>What matters:</i>	<i>Strategies:</i>
Meeting needs for relatedness and connectedness	<p>Opportunities to share questions and learning with peers</p> <p>Group tasks with clear roles for individuals, responsibility and (individual and collective) accountability</p>	<p>Aiming feedback at enhancing students' task mastery</p> <p>Using feedback to calibrate challenge (i.e. scaffolding)</p> <p>Identifying and encouraging progress towards goals and perceptions of competence</p>	<p>Positive, frequent feedback</p> <p>Earn students' trust</p> <p>Frame feedback with high, but achievable, standards</p> <p>Reassure students of capability</p> <p>Empower students' choices for next steps</p>

11. Rewards		12. Teach concept of motivation	
<i>What matters:</i>	<i>Strategies:</i>	<i>What matters:</i>	<i>Strategies:</i>
Motivating initial interest	Consider rewards for quality of work on task Recognise a variety of competencies Gradually withdraw rewards and shift towards intrinsic motivation	Understanding the impact of motivation on learning and how to monitor levels of motivation	Emphasise importance of motivation for learning success Develop shared definitions of effort Link effort to outcomes

1. Students' sense of membership of the school and classroom

Students' motivation is strongest when they believe they are socially accepted by teachers and peers and their school environment is centred on concern for everyone's welfare. Motivation tends to be lowest in environments that are perceived as unwelcoming and untrustworthy.

Students are better motivated when they feel the learning environment is fair and trustworthy, because fair, respectful treatment signals that the individual is a valued member of the group. When students have a strong sense of membership of the class and school, they are more likely to adopt the values endorsed by the school. Students from negatively stereotyped groups are most sensitive to cues of belonging and trustworthiness.

What to do: Teachers are authority figures who can set the tone for relations in the classroom, and make students feel they are valued group members. Students perceive a sense of belonging from frequent, positive interactions with others. Cohesiveness can be developed through a shared sense of purpose, fairness and an environment of personal support, satisfaction and success. Finding even the smallest ways to cue students' belonging can have dramatic effects on motivation. Try to create a sense of belonging while also valuing students' social and cultural identities. If their social and cultural identity is not valued, some students can develop an oppositional social identity.

2. Strong teacher-student and student-student relationships

Positive relationships with teachers are significantly related to positive motivation and to greater achievement.

Motivation is affected by the level of emotional and social support students perceive. Students who believe their teachers are not interested in their learning report more negative motivation and experience lower achievement. Students are also most motivated when they believe they are treated fairly in the school environment.

Research has demonstrated that relationships with teachers are particularly important for Māori students.

What to do: Teachers need to show support and concern for all students and be interested in their ideas and experiences, as well as what they produce in class. Try to ensure you communicate a sense of caring for how each individual student is doing. Showing sensitivity and kindness to students enhances the affective climate of the classroom, whereas threats, sarcasm, directives and imposed goals result in negative affective experiences for students.

3. Task interest and engagement

In classrooms characterised by positive attitudes and emotions, and high levels of interest in the tasks undertaken, students report greater motivation and perceptions of competence.

Students' interest in the tasks they undertake influences their enjoyment of, and engagement with, learning. Students who engage with activities and tasks relating to their interests find learning easier and more related to their lives, and they perform better than those without personalised content.

Students might hold an initial or an ongoing interest in a learning area. Well-developed interests motivate continued engagement with a task. Linking content to existing interests of the students helps students to connect their prior knowledge to academic learning.

Students with little interest and experience in a learning area will need more support from teachers to begin to engage with it, and even students with more developed interests are likely to need support to deepen their interest, which might lessen otherwise.

What to do: Interest can be fostered through well-chosen texts and resources and activities that engender students' curiosity through provocative questioning or generating suspense. Interest is further enhanced by providing choice in activities, and using hands-on activities connected to the learning content. Teachers can also personalise learning so that the learning content is embedded within a topic of the student's interest – matching instruction to a topic of interest, inserting references to students' interests into lesson materials, or helping students to see how academic learning relates to their interests. A note of caution: be wary of adding irrelevant or decorative details to a task in ways that detract from learning outcomes.

Students themselves might be able to adapt academic problems to a context within their areas of interest if invited. As there is often a great deal of overlap between students' interests, it is possible (and equally successful) to identify group interests rather than tailor an activity differently for every student. Also bear in mind that it is important to ensure that students continue to work with concepts in a variety of contexts, rather than narrowly within one context of interest.

Enhancing the affective climate of the classroom can also help engender positive attitudes towards the subject being taught. Strategies such as humour can enhance students' enjoyment of the topic. Skilful use of feedback and motivational support which support student success can also make instruction enjoyable for students.

4. Perceptions of learning as relevant and important

Research finds when teachers emphasise the importance of learning a particular strategy or piece of content, student motivation increases.

Students perceive more challenging classes as more important. However, it is important to find the optimal level of challenge. When challenge is too low or too high, students attribute low importance to the learning task.

What to do: Elaborate and clarify students' responses, and summarise learning regularly throughout the lesson to send the message that the learning is important. In addition, discuss what new knowledge students have developed through the application of particular strategies, which encourages students to perceive those strategies as valuable.

In contrast, emphasising speed, coverage of content or accuracy over understanding, and failing to probe students' answers for explanation and justification, reduces the level of challenge and also implies that student performance, rather than learning, is most important.

Ways to increase the importance of a topic include:

- increasing challenge
- providing opportunities for students to grapple with the central tenets and abstract principles of a topic
- inviting students to personalise a topic by putting themselves into the context of a topic
- discussing universal human experiences that relate to a topic
- inviting students to explore the relevance and importance of their current learning by investigating how particular academic concepts are put to use in their communities.

5. Strong connections between learning activities and students' personal goals, values and identities

When students see learning tasks as useful and relevant to their goals, they develop more interest, persist longer and perform better. Students who see their future adult self as being dependent on their educational achievement spend more time on homework and have better grades.

Students might have between one and five core goals for their self-development and future plans. It is helpful if school goal setting can tap into and co-ordinate with these goals. Students may value a learning area as important for their self-worth and identity, or they might value an area for its usefulness in accomplishing future goals relevant to their career or life plans. For example, one student may perceive mathematics as useful for eventually owning a business, another may view mathematics as handy for calculating cricket batting averages, and another may simply enjoy maths for its own sake.

It is important that students feel that learning activities are congruent with their personal identities, as this makes them more motivated to persist with difficulty. If learning activities are at odds with students' personal identities ("This activity is not for people like me"), then difficulty is taken as proof that the activity is pointless and unachievable.

What to do: Know your students well so you can promote interest in an academic topic by linking it to the students' recreational activities or career goals. Or ask students to reflect on a curriculum unit and generate their own connections so that they discover the importance and usefulness for themselves – this is also an opportunity to learn more about your students.

Not all activities and lessons can be inherently interesting to students, in which case it is important to ensure you offer a rationale for why the activity or lesson is useful to the student and worth the effort.

Teachers can influence students to see their future adult self as dependent on achievement. Posters and images of possible careers might provide ongoing reminders so that students' desired goals remain in mind. It is also important that parents value school and subject areas. Some research shows that providing information about the importance of a subject to parents leads to increases in student motivation and achievement within that subject.

Teaching a unit on natural selection may not have obvious links to students' personal lives or practical goals. Yet it might be linked to students' interest in health, through information about how plant breeders select for fruit that tastes better but contains more fructose and less nutrients. It might too be linked to students' interests in ecological issues such as the extinction of species as environments change and predators are introduced.

It can be difficult to reinforce motivation for schoolwork if students' important social identities (based on gender, culture, age, sexuality etc.) are not associated with academic attainment. Teachers might need to think very carefully about the small changes they can make in the school context that can make 'being a boy' or 'being Māori' feel compatible with school achievement. Such changes include making the current learning relevant to the students' futures, and making learning strategies feel congruent with students' current identities.

6. Student autonomy and responsibility

Motivation is impaired when students feel they have no control over a situation. Giving students choices and empowering student initiative enhances motivation, effort, interest, positive emotions and perceptions of personal control and competence, as well as achievement.

Most students perform better on self-adapted tests in which they can select test items from various options. Providing choices can also increase risk taking, and help students develop interest for particular activities. However, for students from some cultural groups, motivation might be highest when authority figures or peers make choices for them.

What to do: It is important to carefully plan how to make choices available to students, basing them on your students' ability to understand and make choices. Some students may need scaffolding to help them make appropriate choices. Choices must be appropriate for students' abilities and needs, and be a good match with student interests. It might be that students get to choose from a list of topic-related activities provided by the teacher, or that they select their own tasks to work on. They might also be involved in setting due dates, choosing student working groups, and the order of task completion. Being able to choose how to apportion their time, as well as among several different versions of a task, might be most motivational for students with skills in self-regulation. However, it is important that all students, not just the highest-performing students, get to choose activities and resources.

Research shows that a choice as simple as which puzzle to complete leads to longer periods of engagement, indicating higher motivation. Some choices are more effective than others. The best type of choices:

- allow students to reflect their personal interests, values and goals.
- are unrestricted choices, with no indication of which option to choose, rather than controlled choices. (Presenting choices in a manner that includes pressure to pick a particular choice, or simply offering the desired choice alongside others which are deliberately unattractive, has no benefit for student motivation. When rewards are given, this is perceived as manipulation of choice, unless students have some control over the reward, in which case it is not perceived as controlling.)
- offer choice between 2–4 options (more than 5 options increases thinking effort and therefore decreases motivation, and less than 2 options undermines the perception of choice).
- allow students to repeatedly return to a list of options to make another choice (rather than making single or multiple choices at one time only).

It is worth thinking about how much weight you give to different types of choices, for example instructionally irrelevant choices (such as the background colour of a computer programme, or where to sit to read a text) compared with instructionally relevant choices (such as choices between activities or versions of a task). The research literature has conflicting views about this claim, with some researchers arguing that if choices offered are unimportant, students may feel less motivated about making a choice. More meaningful choices such as those around goals, processes, and timeframes might be preferred by some students.

However, other research suggests that when options are too numerous or have significant consequences choosing can become overwhelming, and therefore demotivating. Making a choice requires effort, and therefore being held accountable for making choices and regulating one's learning can lead to too high a workload and a consequent decline in students' ability to make choices and self-regulate. This might be why instructionally irrelevant choices can be successful, in presenting the least effortful form of choice-making.

7. Student sense of self-efficacy

Students have important needs in relation to feeling competent. Motivation is strongly influenced by students' perceived expectations of success or failure, which are in turn influenced by teacher expectations.

Motivation, self-efficacy and achievement are positively affected when outcomes are represented as the result of student effort and action. Optimal learning experiences occur when the student perceives the challenge of the task as equal to his or her skills to achieve it. When challenge and skills are unbalanced, learning activities are not rewarding and perhaps even evoke anxiety. The highest levels of motivation occur when there is both high challenge and high feelings of self-efficacy.

What to do: One way to inspire increased motivation is to increase student's expectations of success and their sense of self-efficacy. Tell students you believe in them and that they will learn a particular content or strategy if they study hard and are motivated. Ways to ensure students experience success include:

- ensuring optimal challenge
- focusing on personal improvement rather than outperforming others
- providing feedback which helps students master content
- helping students set realistic goals
- structuring activities with clear processes for engagement with the task
- reinforcing key learning throughout the lesson, which increases self-efficacy as students are clear that they are making progress
- giving frequent, positive feedback focused on elaborating what students have learned and understood
- attributing their success to effort and strategies rather than ability.

8. Clear goal setting and ongoing monitoring and review of students' work

Goals can motivate students by providing a purpose for using different learning strategies, and encourage students' persistence and effort over time, especially when goals are related to mastery of content and strategies, rather than to specific performance.

Goals direct attention and action, and they also mobilise effort and motivation. For example, research has found that when students were given goals for reading focused on conceptual themes and knowledge content, they applied reading comprehension strategies with greater interest, effort and attention.

Harder goals (that are acceptable to, and achievable by, the student) lead to higher levels of motivation and performance. Difficulty can be interpreted as a need to increase attention and therefore heightens motivation. Perceiving a task as too easy makes it seem not worth any effort, and motivation is consequently reduced. Likewise, perceiving a task as impossible halts motivation and effort abruptly. Between these extremes, increased difficulty enhances motivation.

What to do: Set goals with students that are clear, measurable and provide a structured and easily understood progression through incremental goals to the final goal. Plan points at which to stop and measure progress towards the goal. Provide feedback that indicates to students how they are progressing towards the goal and perhaps offers suggestions to foster achievement of the goal.

9. Carefully structured co-operative learning

Meeting students' needs for connection with others can enhance motivation for the related learning activity.

Students show increased motivation when teachers provide frequent opportunities for them to share their questions and what they have learned with their peers. Students also often demonstrate increased work effort when there is a sense of collective responsibility for learning. In addition, research shows students given collaborative learning opportunities engage in deeper-level processing of information.

What to do: Plan for student-to-student dialogue within a lesson, and identify activities that can be undertaken in pairs or groups. Develop group tasks in which tasks are divided between students. Ensure each student has a clear responsibility and accountability in relation to a group goal.

10. Feedback

When students perceive praise or feedback as intended to facilitate their task mastery, they tend to feel their autonomy has been supported and are consequently motivated by the feedback. However, when students feel that the teacher is trying to control their learning and behaviour, there is a negative impact on motivation.

Feedback is an important tool for teachers to use in striking the right balance between challenge and student knowledge and skill. It helps the teacher to calibrate the challenge appropriately for that student. Feedback about competence and progress towards goals helps students monitor their progress and identify how to improve. It encourages continuing motivation, and enhances interest, persistence and self-efficacy. Feedback is most motivating when it allows students' choice in subsequent learning strategies, reflects a belief in the students' capability to learn/complete a task, is positive, frequent, elaborative and used to help students develop understanding.

The students' perceptions of that feedback is often more important than the teacher's intentions in giving feedback. Non-constructive and minimal feedback, such as the personal evaluation of a student in relation to their performance, diminishes motivation.

What to do: In order to ensure that feedback is well received, teachers must earn the trust of students. This can be achieved by framing feedback as being motivated by high standards for performance which the teacher believes is achievable for the student. Feedback linked to clearly articulated standards enhances motivation because students recognise their grades will be based on their performance as individuals in relation to a standard. Offer feedback that focuses on students' understanding, and identifies students' competence and possibilities for improvement, in relation to goal achievement. Feedback based on high standards must also offer students reassurance that they are capable of reaching that standard.

You could support students to engage in self-evaluation in relation to a clear standard for their work.

11. Rewards

Rewards might be useful as an extrinsic source of motivation at the beginning of a topic in order to engender initial interest.

However the use of rewards might interfere with student motivation, or even indicate to students that there is nothing inherently valuable about the learning activity in itself. Rewards that are given simply for participating in an activity, and rewards that do not communicate information about student progress, can result in lower levels of motivation.

What to do: Offer rewards that are dependent on the quality of the task rather than task completion (which has negative effects on motivation), and that focus on improvement rather than ability. Ensure rewards recognise a variety of competencies. Over time, try to shift students to more intrinsic forms of motivation, for example, use extrinsic rewards to get individuals started on an activity and gradually withdraw their use.

12. Talk about how motivation supports learning

Supporting students' understanding of motivation can aid their ability to self-regulate their levels of motivation and help them to identify strategies and behaviours that increase or lower their motivation.

Although motivational support strategies should be embedded into instruction, it can also be helpful to explicitly discuss motivation with students. This aids students to understand the importance of effort in learning and how finding ways to get motivated can help them put in the necessary effort.

What to do: Emphasise the importance of motivation for success in learning. Talk regularly about how students must work hard and how effort helps them to get smarter. Link effort to outcomes: for example, associate work and effort put into doing homework with positive exam results. Ensure that you and your students have the same perception of effort; discuss what it means to 'try'.

Help students differentiate between productive and non-productive effort. Explain that effort is more than the time spent on a task; it also means using effective strategies, such as specific memory strategies, reading comprehension strategies, practising or seeking help. 'Take the magic out' of learning something new — tell students it is all about strategy and motivation and demonstrate with examples.

Talk about motivation when:

- communicating your expectations for work in class
- communicating messages about students' possible futures
- communicating with parents about your expectations and students' progress
- giving feedback ("You were really motivated to understand this and you applied a range of strategies")
- providing self-instruction scripts ("I really want to do my best effort here")
- helping students cope with failure (attribute failure to strategies or effort; motivate students to try new strategies, and convey your belief in their ability to achieve)
- teaching goal setting and self-monitoring strategies ("How motivated are you?" "How did your motivation influence your progress?")
- creating a sense of belonging in class ("We are motivated to/by...")

Next steps

These 12 strategies for a highly motivating instructional climate have a cumulative effect, reinforcing one another. Students experiencing more of these practices demonstrate more gains in motivation.

Find out more about helping struggling students or students with low confidence to build motivation.

Reflective questions

Examine the current situation in your classroom: Do motivational problems exist in your classroom? How do you know when your students are motivated? How might you find out about levels of motivation in your classroom?

Find out about student motivation by engaging students in formal and informal discussions about motivation. Ask students to write about one achievement and their level of motivation. Type these up and pass them around the students to discuss, and get the group thinking about achievement goals and motivation.

Can you examine what impact formative feedback, or student goal setting, or incorporating choice has on motivation?