



Growth goal setting – what works best in practice

A practical guide for schools

Centre for Education Statistics and Evaluation



Centre for Education Statistics and Evaluation

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Authors

Anaïd Flesken, Samuel Cox, Centre for Education Statistics and Evaluation, and Andrew J. Martin, Rebecca J. Collie, Emma C. Burns, Keiko C.P. Bostwick, University of New South Wales

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For more information about this report, please contact:

Centre for Education Statistics and Evaluation
Department of Education
GPO Box 33
SYDNEY NSW 2001

info@cese.nsw.gov.au

+61 2 7814 1527

education.nsw.gov.au/cese

About this resource

This resource provides a synthesis of research on growth goal setting. It explains why growth goal setting is important and provides practical suggestions for schools and teachers.

When and how to use

This resource is a practical guide, and is accompanied by a reflection guide and poster. School leaders and teachers can read, consider, discuss and implement themes and strategies highlighted in the case study as part of school-developed High Impact Professional Learning (HIPL).

The appropriate time to use this resource may differ for each school, leader and teacher.

School leaders can:

- unpack the practical guide, using the accompanying reflection guide, as part of whole-school professional development and/or stage or grade team meetings
- encourage teachers to share key findings during professional development
- refer to the What works best: 2020 update and reflect on how What works best practices are currently being implemented in their own school to lift student achievement
- access their school's What works best Scout report and Tell Them From Me data to support improvement strategies and monitor progress
- facilitate discussions with staff about areas for improvement at a classroom and whole-school level
- display the Growth goal setting poster
- support staff to find connections between What works best, the School Excellence Framework and practices outlined in the practical guide.

Teachers can:

- read the practical guide and reflect on current practice
- determine which practices to implement in the classroom to support growth goal setting
- unpack the practical guide with their colleagues, using the accompanying reflection guide as a prompt.

Alignment to system priorities and/or needs: NSW Department of Education Strategic Plan 2018-2022: 'Every student is engaged and challenged to continue to learn, and every student, every teacher, every leader and every school improves every year'

Alignment to School Excellence Framework: Learning domain – learning culture;
Teaching domain – effective classroom practice

Alignment with other existing frameworks: What works best – high expectations, explicit teaching, assessment, effective feedback

Australian Professional Standards for Teachers – Standards 1, 3, 5

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To be reviewed: CESE publications are prepared through a rigorous process. Resources are reviewed periodically as part of an ongoing evaluation plan.

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Introduction

When students set growth goals, they are more likely to have plans to attend university, to persevere in schoolwork and to engage with homework. This paper provides a synthesis of research, including new research from NSW high schools using Tell Them From Me data. It explains why growth goal setting is important and provides practical suggestions for schools and teachers to support their students.

Key findings

- Research shows that growth goal setting improves achievement and student engagement.
- Students who set growth goals are more likely to experience gains in aspirations, perseverance and homework behaviour.
- Growth goal setting supports attendance for students of low socioeconomic backgrounds.
- Growth goal setting bolsters aspirations to complete Year 12, particularly for students with low prior achievement.
- Growth goal setting can be fostered through explicit teaching, provision of feedback and relevant content.



Student growth goal setting in NSW public schools

Students report on their growth goal setting in the student survey offered to NSW public schools – Tell Them From Me (TTFM)*. TTFM reports on student, parent and teacher perspectives of school life, and provides data on students' wellbeing and engagement, as well as the teaching practices they encounter in the classroom. This paper presents findings on how to support students' growth goal setting, drawn from a literature review and longitudinal modelling of TTFM data in a collaborative study by the Centre for Education Statistics and Evaluation (CESE) and the University of New South Wales (UNSW) (Martin et al. 2022). This study was published in the *Journal of Educational Psychology*: doi.org/10.1037/edu0000682.

* Tell Them From Me is provided by, and is the intellectual property of The Learning Bar.

What works best and growth goal setting

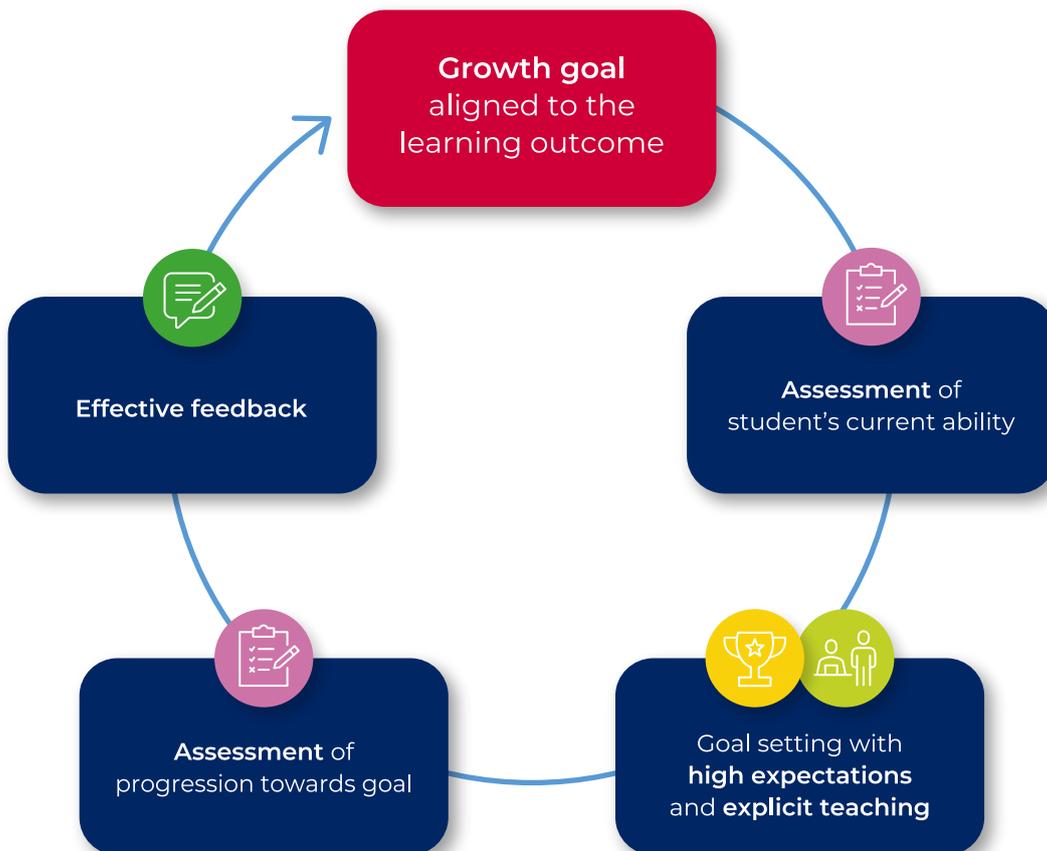
In What works best: 2020 update (CESE 2020), we outline 8 quality teaching practices that are known to support school improvement and enhance the learning outcomes of our students. In this document, we outline a teaching tool that spans and supports several What works best practices: growth goal setting.

The process of setting and achieving growth goals encompasses 4 effective teaching practices outlined in What works best: 2020 update:

1. **Assessment** determines where a student is in their learning and helps monitor their progress towards the learning goal.
2. Learning goals should be challenging, and **high expectations** explicitly communicated to students.
3. **Explicit teaching practices** reduce the cognitive burden of learning new and complex skills and allow students to focus on the learning goal itself.
4. **Effective feedback** stimulates reflection on learning and motivates students when they see that their effort has paid off.

Figure 1

Process of setting and achieving growth goals



For more information on What works best, refer to education.nsw.gov.au/about-us/educational-data/cese/publications/research-reports/what-works-best-2020-update.

What is growth goal setting?

Goal setting is an effective strategy for enhancing students' educational development. Goal setting is not a new idea in education, but in recent years there has been an increasing focus on growth approaches to goal setting. Growth goal setting involves striving to meet personally set academic challenges, aiming to outperform one's previous best efforts or performance and striving for self-improvement.¹

Why is growth goal setting important?

Research over the past decade has identified many positive effects of growth goal setting, including improved engagement, learning and achievement (refer to Martin 2006; Martin et al. 2021). As such, growth goals are an important tool to help us achieve our goal that every student improves every year.

Growth goal setting is positively associated with:

- educational aspirations (Martin 2006; Martin and Liem 2010; Martin et al. 2021)
- test effort, homework completion and learning strategies (Martin and Liem 2010; Yu and Martin 2010; Liem et al. 2012; Martin et al. 2021)
- class participation, cooperation and relationships (Martin 2006; Martin and Liem 2010; Liem et al. 2012)
- enjoyment of school (Martin 2006; Martin and Liem 2010)
- higher levels of literacy and numeracy (Martin and Liem 2010; Mok et al. 2014; Burns et al. 2018).

The association between growth goal setting behaviours and improved academic outcomes is found regardless of gender or immigration background (Martin 2006; Martin et al. 2016). Among students with attention deficit/hyperactivity disorder, it is even stronger (Martin et al. 2019).

Numerous randomised controlled trials in schools and universities show that goal setting has positive effects on student achievement and wellbeing – and that it can be taught effectively to improve them (for example, Morisano et al. 2010; Travers et al 2015). For example, in Australia, primary students who set growth goals in mathematics improved more than students who did not (Ginns et al. 2018).

¹ Growth goal setting is different from growth mindset; refer to the text box 'Growth strategies in education research'.

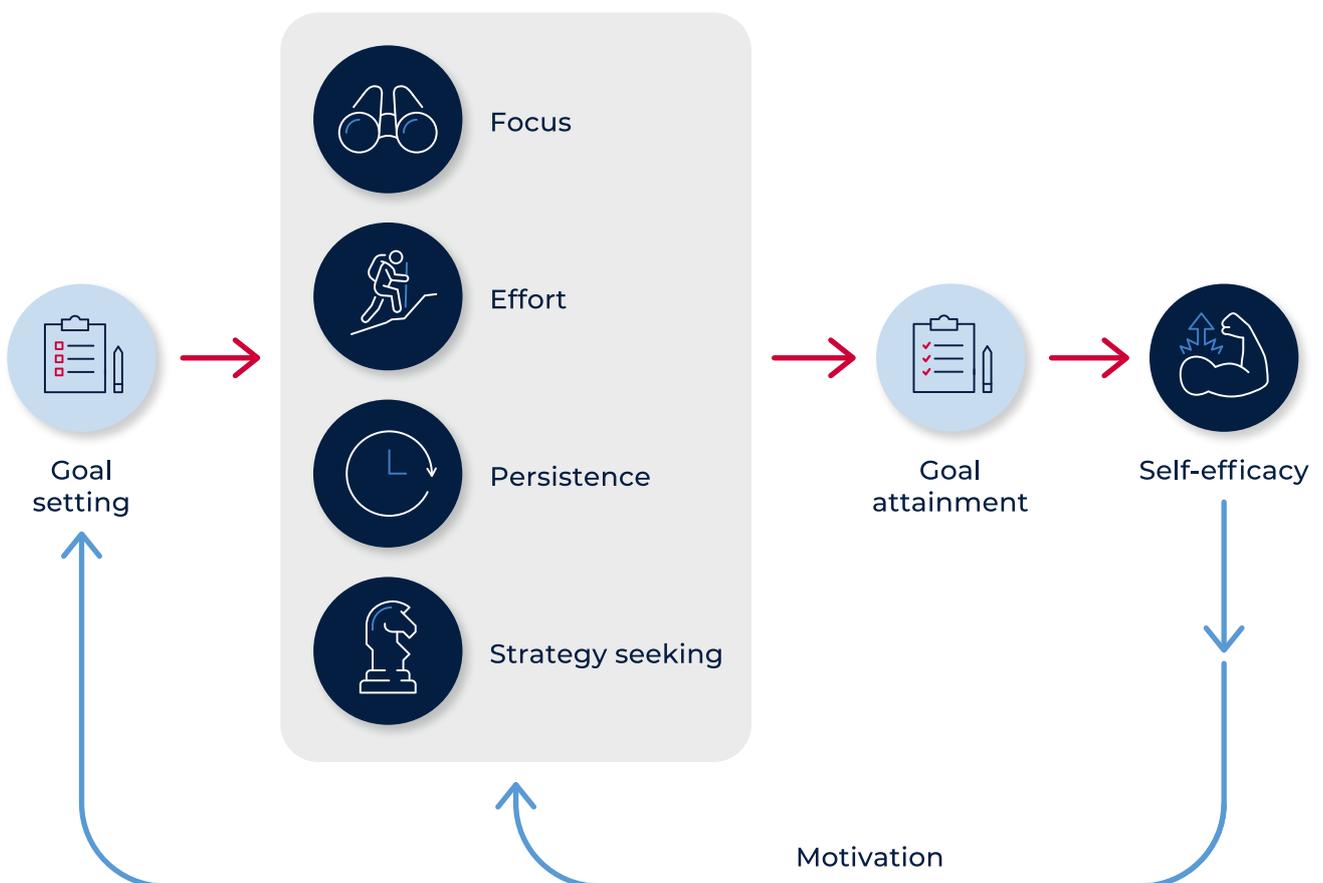
How does growth goal setting work?

Goal setting affects motivation and achievement through 5 mechanisms (Locke and Latham 2002; 2006; 2013; Martin 2006; Zimmerman 2008; refer to Figure 2):

1. **Focus:** setting goals clarifies what is to be done and focuses students' attention and effort toward goal-relevant activities and away from goal-irrelevant activities.
2. **Effort:** setting goals motivates students to exert effort. Specific and challenging goals in particular increase effort, compared to vague and easy goals.
3. **Persistence:** setting goals motivates students to persist with a task for longer, perhaps because goals make success more accessible.
4. **Strategy seeking:** setting goals affects achievement because it leads students to seek strategies that will help them to attain their goals. When faced with a goal, people automatically apply their existing knowledge and skills to work towards attaining that goal. If existing knowledge and skills are not sufficient, they draw on other knowledge and skills they have previously used in related contexts. If the goal relates to a task that is completely new to people, they deliberately develop strategies that will enable them to attain that goal.
5. **Self-efficacy:** attaining goals also affects motivation and further achievement because it increases students' sense of self-efficacy.

Figure 2

How goal setting affects student achievement

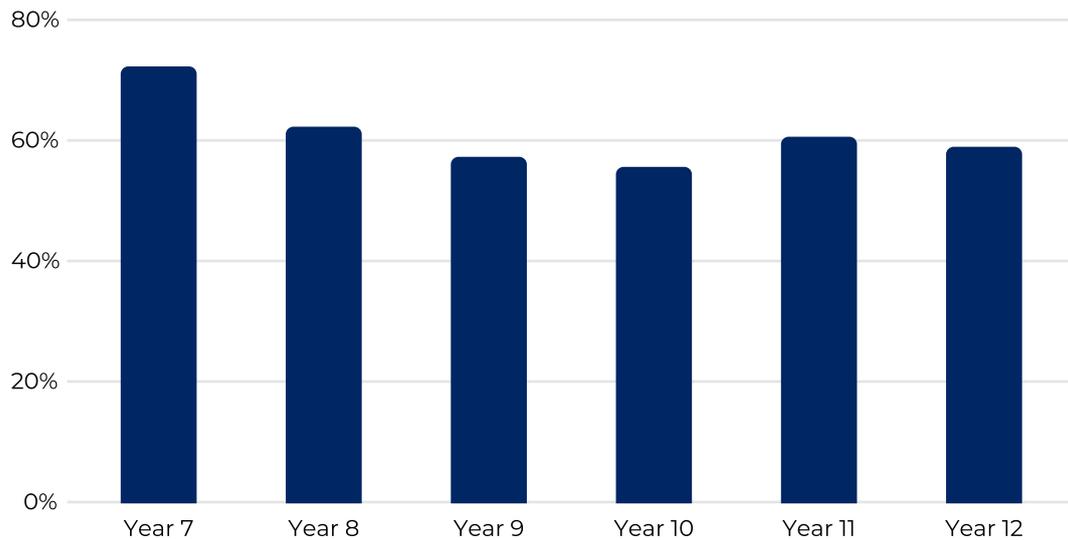


What is happening in NSW?

Tell Them From Me survey data shows that not every student sets growth goals. In 2018 and 2019, 61.3% of secondary school students reported that they set challenging and personal-best goals in their schoolwork. Split by scholastic year, growth goal setting decreases throughout secondary school, with a slight uplift in the final years (Figure 3).

Figure 3

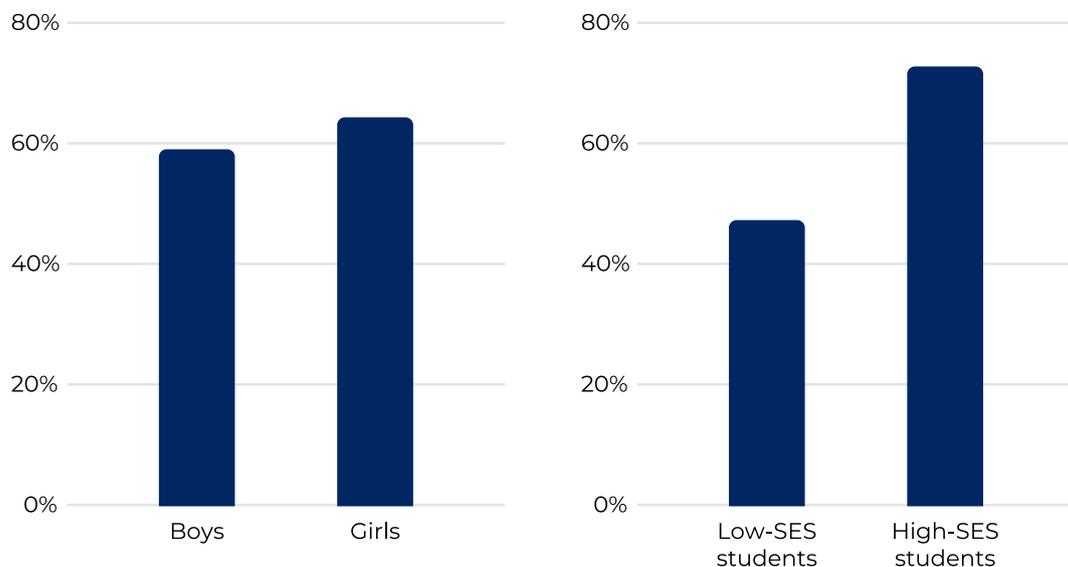
Percentage of secondary students with growth goals by scholastic year, TTFM 2018-19



TTFM data also shows that growth goal setting is not evenly distributed across student groups. More girls than boys and more students from higher than from lower socioeconomic status (SES) backgrounds set growth goals (Figure 4).

Figure 4

Percentage of secondary students with growth goals, by gender and socioeconomic background, TTFM 2018-19



CESE and UNSW collaboration on growth goal setting in NSW

CESE and UNSW jointly examined the links between teaching practice, growth goal setting and student engagement among secondary school students in New South Wales (Martin et al. 2022).²

We found that growth goal setting was positively associated with large gains in students' perseverance, aspirations and homework behaviour. Perseverance and aspirations to complete school are important indicators of students' cognitive engagement. Homework behaviour, as measured in Tell Them From Me, is an indicator of students' attitudes towards homework, the extent to which it supports their learning and their effort in completing it. It is an important part of developing academic self-regulatory skills (for instance, time management), particularly for high school students.

Of these 3 indicators of engagement, growth goal setting had the strongest effect on perseverance, which refers to the ability to pursue one's goals to completion, even in the face of obstacles (Kern et al. 2016). Students with high growth goal setting have 30.5% more perseverance than students with low growth goal setting. This is important because perseverance has a strong correlation with academic achievement and school performance (Gregory and Brinkman 2015).

In addition to these significant effects for all students, we also found that growth goal setting:

- had an especially positive effect for the aspirations of lower achieving students
- decreased differences in school attendance between students from low- and from high-socioeconomic backgrounds.

How do we measure growth goal setting?

NSW public schools can assess the growth goal setting behaviours of their students using the TTFM student survey. Students are asked to what extent they agree or disagree with the following sentences, drawn from research by Martin (2006) and Martin and Liem (2010):

- 'I set challenges for myself in my schoolwork.'
- 'I like to work towards challenging goals in my schoolwork.'
- 'When I do my schoolwork, I try to do the best that I've ever done.'
- 'When I do my schoolwork, I try to improve on how I've done before.'

For each question, students rate themselves on a scale of disagreement to agreement.



² The study is open access and available online under doi.org/10.1037/edu0000682.

Implications for teaching and learning

Teach students how to set and strive for growth goals

Students can benefit most from growth goal setting when they are taught how to set and work towards achieving effective goals. Strategies on setting effective classroom goals and on how to discuss goal setting with students are outlined in the next section.

Adapt growth goals to the learning process

Different stages in the learning process require different types of goals (Table 1). When a task is entirely new, students benefit from being exposed to strategies to complete it, either through explicit teaching (refer to CESE 2017; 2020) or by attaining learning goals. In the next stage, students can then focus on applying learned strategies. Here, process goals that encourage practice are most effective. Once the new skill becomes automatic, product goals that encourage improved efficiency are most effective.

Table 1

Adapting growth goals to the learning process

Experience	Goal	Description	Example
New to task	Learning goal	Discovering strategies for task completion	'Find 3 strategies to reduce the number of words in a sentence.'
Practising task	Process goal	Applying a learned strategy to complete a task	'Focus on applying the strategies you have learned to reduce the number of words in each sentence.'
Task automatic	Product goal	Completing a task	'Reduce the number of words in 10 sentences.'

Provide effective feedback

Effective feedback is a central element of growth goal setting. Reviews of effective feedback (for example, Shute 2008) emphasise the importance of:

- being prompt and timely with feedback
- ensuring feedback is concrete, clear and specific
- delivering feedback that is accurate, unbiased, objective and ideally in documented form
- focusing corrective feedback on the task, more than on the learner
- providing corrective information that is also forward-reaching, aimed at enhancing learning and instilling student optimism
- presenting feedback in manageable segments
- providing feedback that is as simple as possible (based on learner needs).

Make learning relevant

Relevant content and tasks contribute to effective growth goal setting. Content and tasks are relevant if they are personally meaningful, useful and interesting.

Strategies to enhance relevance include (for example, refer to Martin 2003):

- developing connections between students' prior and current learning – this demonstrates meaningful links across content
- developing connections between what students learn and major issues in the world outside of school – this develops authentic links to the world
- developing connections between what students learn and aspects of their own lives – this develops personal meaning
- arousing curiosity to optimise a student's connection to instruction and subject matter
- looking for opportunities for fun learning activities to build an emotional connection to instruction and subject matter
- personalising language and tasks where possible – for example, providing instructions such as: 'Your goal in this task is to ...' leads to more personally meaningful learning than instructions such as: 'The goal for this task is to ...' – and individualising tasks (where feasible) to provide a sense that the task is aligned to the student.

Target growth goals for academically at-risk student groups

Students from low-SES backgrounds and students with low achievement are found to particularly benefit from growth goal setting. A growth goal setting strategy may be one part of a multifaceted approach to assist academically at-risk or otherwise disadvantaged students in the classroom.

Characteristics of effective goals in the classroom

Effective growth goals have 3 core attributes: they are focused on self-improvement (Martin 2006), they are specific and they are challenging (Locke and Latham 2002; 2013). In the classroom, several other goal attributes are also important: effective goals are positive, time-bound and measurable.

Effective goals focus on **self-improvement**

Self-improvement goals, more than competitive goals, are effective in the classroom. A competitive goal compares a student's achievement to that of others, while a self-improvement goal compares it to a student's own, earlier achievement.

Competitive goals tend to be effective while students are succeeding but can become counterproductive if they perform poorly (Covington 2000). Growth goals, or personal-best goals, in contrast, have been shown to be effective more generally (Slavin 1980; Martin et al. 2014; Ginns et al. 2018) and may work particularly well for students from disadvantaged groups (for example, Martin et al. 2019; Martin et al. 2021).

Self-improvement goal: I will complete more tasks correctly in this week's test than in my last test.

Competitive goal: I will complete more tasks correctly in this week's test than any other student.



Effective goals are **specific**

Goals can be either general, with the aim to 'do your best', or more specific. Specific goals are more effective because they make it easier to focus on goal-relevant activities and to track progress against the goal (Zimmerman 2008). Students with specific goals have been shown to improve their skills at a higher rate than students with general goals, and to be more confident in them (Schunk 1983a).

Specific goal: I will complete at least 3 more tasks correctly in this week's test than in my last test.

General goal: I will try to do better in my tests.



Effective goals are **challenging**

Difficult goals are more effective than easier goals (Locke and Latham 2002; Schunk 1983b), but they also need to be attainable. Failing to achieve overly ambitious goals can be counterproductive (Zimmerman 2008). Put together, this suggests that a goal should be challenging, since this description encompasses both the difficulty and attainability of the task.

Students should be explicitly told that they can attain a goal. Students who have teachers with high expectations and who think that they can attain a goal are more confident and motivated to work towards it (Schunk 1983; Dweck 2000; CESE 2020).

Challenging goal: I will get at least 10 questions right.

Easy goal: I will get at least 3 questions right.



Effective goals are **positive**

The framing of a goal is also important. If a goal is perceived as a threat rather than a challenge, it may adversely affect achievement (Dweck 2000; Roney and Lehman 2008). Goals should be framed in positive terms to encourage effort and motivation.

Positive goal: I will complete at least 7 out of 10 tasks correctly.

Negative goal: I will not make more than 3 mistakes when attempting 10 tasks.



Effective goals are **time-bound**

Short-term goals are more effective than longer-term goals because they provide more specific guidance on the actions required for success and more immediate feedback on progress. Such goals may be especially useful for young children who cannot yet imagine outcomes in a distant future (Schunk 2003). Research shows that students with short-term goals become more interested and skilled, and are better able to judge their skills (Bandura and Schunk 1981).

Longer-term goals can also be helpful as they can motivate learners over time. It is best to combine both approaches by breaking down long-term goals into short-term goals (Zimmerman 2008). Young children or students struggling in their learning may need help making a larger goal more manageable, particularly when they are not able to judge why or how they are struggling.

Short-term goal: I will complete one page of problems by the end of the class.

Longer-term goal: I will finish the book by the end of the term.



Effective goals are **measurable**

For goals to be effective, they need to be measurable. Measurement allows for regular monitoring and feedback that shows students their progress towards their goal. Feedback achieves 2 things: first, it serves as error management to show if the student's actions have led to progress towards the goal (Locke and Latham 2002). Second, seeing their efforts pay off motivates students to put in further effort (Zimmerman 2008).

Students who receive feedback on their goal progress improve more (Schunk and Swartz 1993), are more confident in their skills (Schunk and Rice 1991) and are more accurate in assessing their abilities (Gaa 1973; also Bandura and Cervone 1983; 1986). And feedback does not necessarily need to come from others: self-monitoring progress has similar effects (Zimmerman and Kitsantas 1997; 1999).

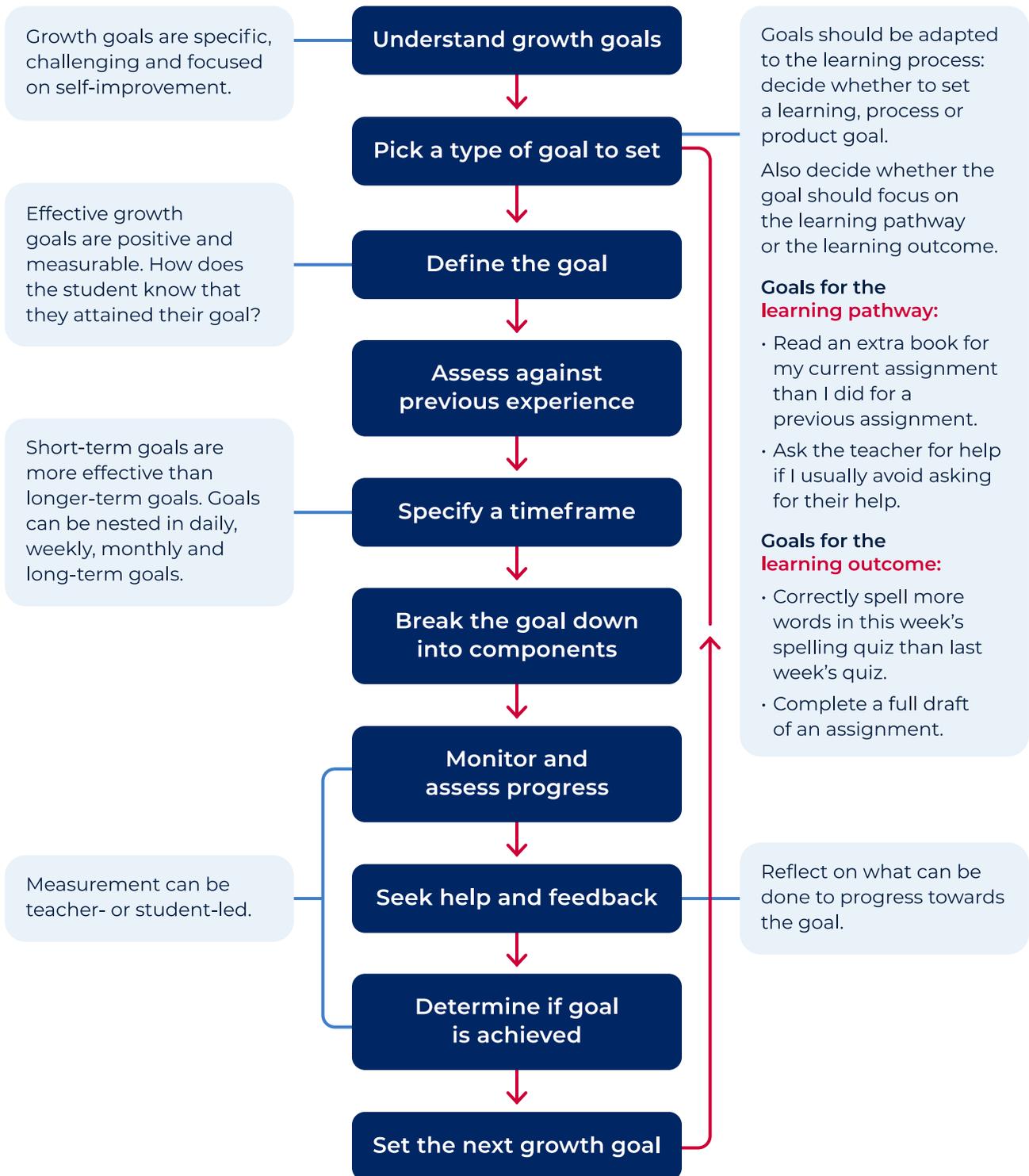
Measurable goal: I will complete 3 practice questions a day.

Non-measurable goal: I will study more for the next maths test.



How to help students set growth goals

To implement growth goal setting in the classroom, it is important that students know what growth goals are, what growth goals to set and how to strive for growth goals.



Growth strategies in education research

The educational research literature on growth focuses on 3 concepts, which can be seen as different parts of students' growth orientation (Figure 5).

Growth-oriented students:

1. believe that growth is possible (growth mindset)
2. strive for growth (mastery orientation)
3. adopt learning strategies to attain their goals (goal setting).

Figure 5

Three major growth concepts in education research



Students with a **growth mindset** believe that their intelligence and skills are changeable. They believe that their skills can be improved through effort, and that achievement in school reflects the effort put in. Students with a fixed mindset, in contrast, tend to believe that their intelligence and skills are fixed, and that achievement in school reflects this innate talent, rather than effort (Dweck 2000). Having a growth mindset is consistently linked to higher academic achievement (for example, Dweck 2000; Blackwell, Trzesniewski and Dweck 2007; Claro, Paunesku and Dweck 2015). However, it is not yet clear whether teaching growth mindset can increase academic achievement (refer to Yeager et al. 2019; Education Endowment Fund 2019; Sisk et al. 2018).

Students with a **mastery orientation** engage in learning to develop or acquire new knowledge or skills, rather than merely to fulfil or beat some performance standard. Having a mastery orientation is also linked to improved academic achievement: students with a mastery orientation are more interested in the learning material; spend more time on learning activities; learn more strategically; and show greater persistence in the face of challenges than students without a mastery orientation (refer to Ames 1992; Covington 2000; Meece et al. 2006; Morisano 2013). However, few studies have examined whether mastery orientation can be effectively promoted in the classroom (refer to Van Yperen et al. 2015).

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Author: **CESE**

Centre for Education Statistics and Evaluation

GPO Box 33, Sydney NSW 2001, Australia

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