

Teacher-Recorded Worked Examples

Teachers record short, 2 to 5 minute videos of their handwritten completion of maths problems on screen with their own voiceover commentary. They distribute this recording to individual students or cohorts of students who have the same misconception or learning challenge.



Which challenges does the model address?

- **Differentiation** – This model is an effective aid to differentiation in maths teaching. For example, for students who have already mastered content that the majority of the class are still struggling with, the teacher can provide recordings that are tailored to their extension needs while focusing class time on the student majority's learning challenges. This differentiation approach can also be applied to cohorts who may be falling behind the rate of progress attained by the rest of the class.
- **Teacher Capacity and Efficiency** – Teachers are able to work to provide higher-quality, tailored feedback and instruction to more cohorts of students, more quickly than if they were relying on traditional face-to-face classroom time and annotation of assessment tasks.



Target Groups

The model is most used in secondary school maths teaching across years 7-12. The model is particularly valuable for students at the top or bottom of the ability-scale who would otherwise need to watch their teachers providing live worked examples at a level above or below their current ability level. Students with challenges with working memory can also benefit from the model as it provides the option to pause and revisit different parts of the video before progressing.

The model also benefits out-of-field teachers or those teaching a year level for the first time. It allows them to review videos from other teachers to absorb new teaching techniques, and to anticipate and prepare for commonly occurring student misconceptions before teaching the content.



How the model works

Tools required:

- Tablet or laptop with stylus functionality and a microphone
- Screen and voice recording software, such as [Screencastify](#) or [Loom](#)
- A learning management system (LMS) such as [Google Classroom](#) or [Canvas](#) to distribute teacher-recorded worked examples to students

How teachers use the model:

- To provide feedback to individual or groups of students who need assistance with specific questions they answered incorrectly on an assessment.
- When introducing a new topic to their class, they may record several videos outlining the approach to key types of problem to be covered in the unit. All students in the class may individually review the videos at their own pace and time of day/week.
- Where a student is struggling with a particular step or process in the solution methodology and needs a tailored explanation highlighting where and how they are going wrong. This can sometimes involve the teacher partially demonstrating how to get to the answer and leaving the remainder of the steps to the student to work through themselves.
- Often a LMS is used to collate and distribute the videos to students.



Success factors

- It is important to ensure that the environmental and infrastructure foundations are in place (i.e. every teacher has the hardware and software) and that every teacher is confident enough with the functionality of these tools.
- In their video voiceovers, the teacher should endeavour to use familiar examples from the learning context relevant to the students and refer to terms they covered in the classroom to strengthen students' engagement and understanding.
- Several schools created shared libraries of recorded worked examples for all teachers at a year level to use as they see fit in classes. This sharing approach can save time for teachers and provides a professional development opportunity for teachers to learn from each other's practices.



Caution factors

- Videos should be no longer than 5 minutes. Be cautious of recording videos that are too long and complex leading to students disengaging and reducing the effectiveness of the model.
- One of the key strengths of this model is that it leverages the relationship between the teachers and the student, and the teacher can personalise their commentary to match student needs. Rather than creating videos useful for all students, it's preferable to provide customised worked examples for individual students or groups of students with a shared misconception. Peppering the video commentary with the same sorts of humour and relatability points that an experienced teacher would use in a traditional classroom setting.



Cost

Tablets and laptops with touch screens are available at a range of price points. The cost of screen recording products such as Screencastify and Loom varies from \$0 to \$12 per use per month depending on the plan. LMS products offer free entry-level versions with basic functionality with more feature-rich versions requiring a paid subscription which is negotiated with schools and education departments depending on use numbers and required features.