

# How does a data-driven tool influence the classroom?

EXECUTIVE SUMMARY

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## Problem and context

Adaptive Learning Technologies (ALTs) like Snappet are widely used in Dutch primary schools to personalise learning. They offer automatic grading, real-time dashboards and dynamic exercise adjustment based on learner performance. However, teachers B.T. and H.S. have observed that ALT use fundamentally alters classroom dynamics, and teachers should be mindful of this to avoid reducing teacher autonomy and student interaction.

While ALT platforms promise increased efficiency and student-tailored instruction, real-world classroom implementation reveals new pedagogical tensions: reduced dialogue, over-reliance on dashboards, and student frustration due to the competitive and performative attitude in the classroom stimulated by ALT use. This learning story explores these challenges and how thoughtful integration of ALT can ensure that teachers get the most out of these tools.

## Understanding the ALT mechanism

- Snappet is a tablet-based adaptive learning system used for math, language, and spelling.
- It uses an Elo-based algorithm (originally for chess ranking) to estimate a student's ability, presenting tasks with a 75% success probability.
- Performance is visualised via dashboards for teachers and learners, influencing pacing and target-setting.

## Impacts observed in the classroom

- Reduced teacher-student interaction. Teachers often focused on dashboards, unintentionally sidelining interpersonal feedback.
- Diminished peer collaboration. Students worked alone on devices even in group settings, limiting co-construction of knowledge.
- Score fixation and frustration. Students became demotivated by harsh penalty scoring, especially when negative feedback followed small mistakes.
- Teacher hesitancy. Novice users strictly followed Snappet lesson plans, doubting their own judgment and flexibility.

## Responsive teacher practices

- Mixing methods. H.S. added offline, movement-based, or group activities to maintain student motivation and reduce screen fatigue.

- Transparent communication. Both teachers explained dashboard metrics and the algorithm to students to demystify performance scores.
- Student agency. They invited students to choose between digital or paper-based testing, promoting ownership and preference-based learning.
- Teacher development. B.T. trains others to interpret dashboard data critically, use manual goal-setting, and combine Snappet insights with classroom observation.

## | How ALTs adapted their tools to tackle the challenges

The design of Snappet has been changing in response to points of criticism and the recent concern about screen time in schools in Europe.

- The lesson plans on the platform now have empty modules, where teachers can add their own activities to increase customisation.
- The lesson plans do not only rely on Snappet exercises; they also suggest many offscreen exercises, such as outdoor activities and handwriting practice.
- The lesson plans are also available in a non-interactive, paper format for teachers that want to work more often offscreen.
- The algorithm is now also more flexible than before. In the past, the user had to do many exercises of one type for the ALT to determine their proficiency level. Currently, when the user does exercises in one topic, the tool considers this in predicting proficiency in topics that are related, hence requiring fewer exercises completed. This creates more freedom of movement for teachers to implement non-digital activities as well.

## | Lessons learned

- To feel more control and ownership of their teaching, teachers can actively adapt lesson plans and not defer entirely to Snappet's automation. Teachers can still talk with students, ask open questions for in-class debate and reflection, and assess progress holistically.
- Teachers can explain students how ALT algorithms work to avoid discouragement and improve data literacy and promote teacher-student dialogue.
- Teachers can use traditional methods such as hands-on math tasks, paper worksheets or oral discussions which can improve student learning and complement ALT use.
- Updates from Snappet now include more teacher-customisable content, offline learning suggestions and more flexible adaptive logic, showing that teacher feedback and EdTech-educator collaboration can lead to improvement.

ALTs offer powerful capabilities to personalise instruction, reduce grading load, and visualise learning progress, all integrated into lesson plans that adhere to national curriculum guidelines for primary education. But their integration must be pedagogically intentional. As B.T. and H.S. emphasise, teachers need time, training and confidence to critically interpret ALT data, retain agency and preserve the human connection essential to effective teaching. When used wisely, these tools can be extensions of good teaching.



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