How to improve student outcomes with consolidated EdTech

How schools can improve student engagement and outcomes through EdTech

Education Perfect

Contents

Introduction

Navigating EdTech is a daunting task for school leaders and educators. With the rapid growth of subject-specific online learning, assessment and analytics resources available, it's difficult to know which will help you achieve the desired student outcomes.

When selecting digital resources, educators typically prioritise tools that will:

1. Deliver insights and content in a way that allows them to reinvest time into personalising student learning and outcomes.
2. Remain low-cost, user-friendly, and easy to master for both students and teachers.

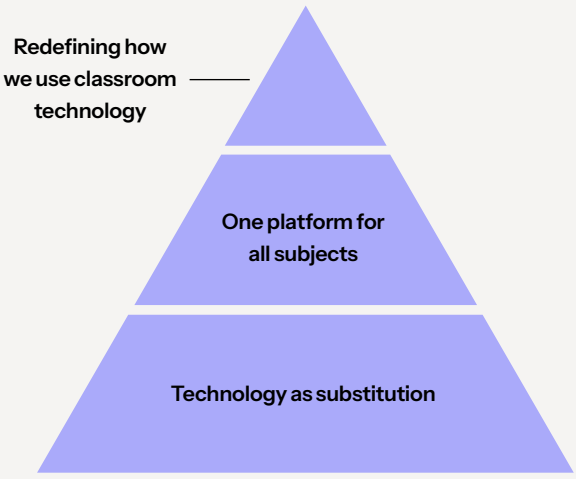
Over the last decade, the EdTech landscape has expanded drastically. The massive range of EdTech available poses significant challenges to schools. Navigating multiple digital platforms can be mentally exhausting for students, financially burdensome for school staff, and complicated for teachers performing administrative tasks. This siloed approach hinders data integration and student outcomes. Streamlining EdTech is essential to alleviate these burdens and maximise its classroom benefits.

By consolidating learning resources across subjects, educators can minimise the operational cost of new technology and maximise time spent building student relationships. Consolidating online resources – using the same platform for learning, assessment and analytics functions – offers significant benefits in powering the adaptive learning cycle.

This whitepaper explores the benefits of using a single tool - such as Education Perfect (EP) - across all subjects for learning, assessments and analytics. It discusses how a centralised online resource is the future of EdTech, and only with a consolidated tool can schools gain a holistic view of every student.

The paper examines the topic of EdTech adoption through a pyramid framework, drawn from Maslow's Hierarchy of needs. We'll refer to this structure as '**The modern hierarchy of EdTech needs**'. The paper provides insight into the typical adoption of EdTech, starting at the base of the pyramid and working upwards toward a self-actualising peak.

When reading this paper, we encourage you to consider where you may be on your own EdTech journey, and what the future of that journey may look like. The future of EdTech is a pivotal part of the evolving conversation on student progress.



The modern hierarchy of EdTech needs

The pyramid base: Technology as substitution

Supporting content delivery through technology

Basic classroom technology is grounded in substitution; using technology as a direct, curriculum-aligned replacement with no functional change. This can be any technology that supports the delivery of content, such as:

- A digital platform
- A learning management system (LMS)
- An editing suite
- Curriculum-specific resources
- Any other defined digital tool

This technology is used to deliver content that would alternatively be delivered through textbooks, printed worksheets, or other traditional forms of content.

Using technology as a substitute for traditional content is the first step on a staircase; the start of your journey. It is similar to the lower level of Maslow's Hierarchy, which include **basic physiological needs** for human survival: food, water, safety, etc. More complex functions are not feasible if these base needs are not satisfied.

A base substitution typically involves substituting the content from a single subject, and often requires a number of online platforms.

This new approach helps to minimise educators' time spent on resource creation. Whether by using pre-made resources or an online platform to digitise existing content, technology has a range of teacher benefits, including:

- Improving productivity
- Supporting distance learning
- Enhancing access to educational resources
- Distributing resources
- Reducing physical resources that students might lose

Using EP for single subjects

The use of technology for a single subject employs EP's basic functions to engage students. Through EP, teachers can discover thousands of dynamic, interactive lessons in the curriculum-aligned content library, such as vocabulary lists for Language classes. The content library is constantly updated and optimised for student engagement. All lessons and tasks are designed around pedagogical best practices, and improving student outcomes.

This means teachers can search for or browse through relevant content and immediately assign tasks. Teachers can assign classwork, homework, remediation, or extension work that can be accessed by students anywhere and worked through at any pace, with 24/7 EP support available.

Single-subject benefits for teachers

By using consolidated technology as a single-subject replacement, teachers are finding ways to reinvest their time in student engagement and growth. Simple digital content resources support flexibility and creativity in the design of instructional material. By reducing the time spent on lesson planning, content creation is streamlined, and more time is dedicated to student engagement and growth.

Single-subject technology also supports blended learning approaches. Teachers can integrate digital content into traditional classroom structures as much or as little as they like. This is particularly valuable in resource-limited environments. Online tools allow teachers to access and create content for every student, ensuring students are given equal footing in their learning journeys, while improving the overall quality of education.

Several recent studies emphasise the importance of EdTech in classrooms. A recent IJCS study discovered that 73% of the surveyed American teachers reported that increased student access

to computers made the teaching and learning process easier. In a recent Smoothwall survey, 53% of responding teachers said that technologies made their classrooms “more vibrant and fun”. In a Nazarene University survey, 82% of teachers agreed that using technology enhanced their classroom learning.

The importance of EdTech in classrooms

73% of the surveyed American teachers reported that increased student access to computers made the teaching and learning process easier

53% of responding teachers said that technologies made their classrooms “more vibrant and fun”

Throughout these studies, educators overwhelmingly indicated an enthusiasm for the use of classroom technology. Similarly, surveyed teachers conveyed a clear need for more organised professional development opportunities. A summary indicated that 77% of educators learn about new technologies by asking other teachers, rather than through formal channels or training. 64% of educators said they learn how to use this technology on their own.

This is why EP offers teachers comprehensive Professional Development resources, including:

- 1:1 tutorials
- Group training sessions
- Training videos
- Webinars
- Live events

Classroom technology is only optimised if teachers and students are taught to use it. With sufficient training, teachers can reinvest time, expand their content libraries and design new, creative instructive materials.

Single-subject limitations for students

Typically, higher engagement with online tools results in improved student outcomes. It also allows for increased autonomy amongst students. If students are given the choice of which digital content they engage with, they can navigate through materials at their own speed, in their chosen environment.

The diverse nature of online tools often accommodates individual learning styles and diverse learning needs, via:

- Multimedia elements
- Interactive and video functions
- Gamified learning

The use of EdTech also helps to familiarise students with digital platforms. It is critical to teach students digital literacy skills to ensure they understand basic internet safety and privacy practices, now and in the future.

A Smoothwall report reinforces the belief that technology improves student engagement. 96% of surveyed teachers believe that technology positively impacts children’s lesson participation and learning. 56% of the respondents also stated that the use

of technology makes students “noticeably more engaged.”

96%

of surveyed teachers believe that technology **positively impacts** children’s lesson participation and learning

The importance of multimedia functions and diverse content must also be stated. A new IJCS study discovered that gamified learning content improves educational outcomes by 45%. When gamification is combined with reading tasks, the improvement rates grow to a staggering ~61%.

Despite this, many teachers are still left asking how many EdTech tools are required. Using single-subject tools comes with its own unique set of limitations. Students are required to switch between different tools for different subjects, which can:

- Severely limit engagement levels
- Consume teachers’ time
- Disrupt the flow of the classroom

Each tool also has its own security model and privacy approach, which comes as a risk to student data . There are more motivating and expansive consolidation tools now available in the EdTech market. Single-subject resources are becoming obsolete as more effective tools facilitate a broader range of student learning needs.

Whole-school benefits

There are positives and negatives to digital resources at a school-wide level. Technology allows teachers to share resources across the school, which promotes collaboration, minimises individual workloads, and ensures equal access to high-quality resources. By using EdTech for single subjects, the school gains significant overheads, yet the limited data means the school cannot paint a complete student picture.

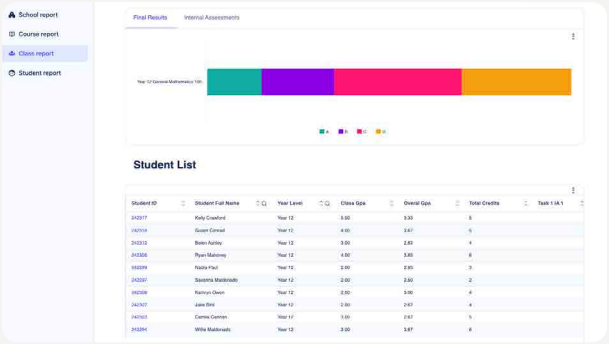
The use of multiple EdTech tools, rather than a single consolidated platform, can lead to inconsistency in a school’s learning experiences. Cognitive load is increased as students need to remember multiple usernames/passwords and how to interact with different tools. The same issue exists for educators, especially those that teach across multiple subjects. Successfully implementing and learning to use a variety of tools takes far longer, risks inconsistent, siloed student data, and does not allow for a holistic understanding of individualised student strengths and weaknesses.

> “The ability to assign tasks to specific students makes Education Perfect a good resource for inclusive classrooms where students have different levels of understanding. You can assign lower-level tasks to certain students or remove questions with extended responses. This allows everyone to work on the same content but at their level.”
>
> Alicia Doogue, a teacher from Ursula Frayne Catholic College, Perth, 2023

The pyramid mid-section: One platform for all subjects

Building a complete student profile

The midsection of EP's modern hierarchy of EdTech needs sees schools move towards one digital platform across all school subjects. This provides educators with a well-rounded picture of student performance and wellbeing. A single digital platform combines assessment functionality with content, allowing differentiated learning to be highly adaptive. When incorporated across all subjects, this becomes a powerful engine to amplify student growth.



By creating a student profile that encompasses every subject, educators can develop a streamlined, individualised learning pathway that doesn't contradict other platforms used. This provides teachers with a comprehensive view of each student's academic journey, making it easier to track growth, identify challenges and celebrate achievements at an individual level.

A single, consolidated platform also allows for rich data across every subject. Teachers can share student insights to create complementary lesson structures and assessments. This encourages teamwork between teachers and leads to a cohesive experience for students. It seamlessly integrates learning experiences, including interdisciplinary lessons that emphasise the connection between different subjects without unnecessary overlap.

Using technology to combine resources and personalise learning corresponds to the mid-section of Maslow's Hierarchy of needs: these mid-levels include the need for **belonging and self-esteem**. In the context of this whitepaper, belonging – a sense of connection – is created through the consolidation of resources across classes. By connecting the content, assessments and analytics used in every subject, students will feel increased engagement, satisfaction and confidence in their use of the platform.

Self-esteem, the need to be a unique individual, is achieved through EP's use of differentiation, adaptive learning and assessments. Students will attain greater self-esteem through individualised learning pathways and experiences catered to their personalities and environments.

Supporting teachers with adaptive learning

Consolidated EdTech empowers teachers by accommodating the adaptive learning cycle. Using a single digital tool across multiple subjects with formative assessment and diagnostic capabilities streamlines instructional planning for teachers and reduces time spent navigating multiple platforms. EP's assessment capabilities include automated marking and student data collection, both of which allow teachers to focus on analysing insights and identifying student strengths and weaknesses.

Insights into individual students enable teachers to make informed decisions and adapt teaching methods when required. They're able to address individual learning needs and implement targeted interventions immediately.

79%
of surveyed teachers for Years 6-8 use a LMS weekly

67%
of surveyed teachers for Years 9-12 use a LMS weekly

EP's collated data also minimises the time that teachers need for reporting and communication

with parents. By choosing to share data and progress reports with parents, teachers can foster a collaborative approach to their students' learning journeys, and redirect their time to developing those student relationships.

Project Tomorrow's Speak Up Initiative, a national education non-profit organisation, conducted a 2022-23 study that surveyed over 50,000 students, teachers, administrators and parents across America. The study showed that 79% of surveyed teachers for Years 6-8 and 67% for Years 9-12 use a LMS weekly. However, less than 25% of teachers across Years 6-12 said they conduct weekly virtual labs or online experiments, not making full use of their online resources. Only 12% of surveyed school administrators said their teachers were proficient enough with data to understand the needs of individual students.

These statistics are backed by expert opinions. Andrea Deau, Senior Director of Higher Education Programs at 1EdTech (formerly IMS Global), stated that the benefits of implementing learning analytics to student outcomes can be enormous.

When asked what the biggest opportunities are for schools who don't use learning analytics at all or to their greatest effect, Andrea said,

> "Personalised learning, improving the curriculum, optimising learning resources, and enhancing teaching strategies across the board."

She also mentioned "early identification of at-risk students."

Though Andrea admitted that there are significant barriers to implementing learning analytics, such as potentially significant resource requirements and cultural issues, the future of educational technology lies in "immersive technologies".

Differentiated student journeys

By analysing over 40,000 pre- and post-tests completed between January 2019 and May 2020, EP formed an evidence base to determine that student learning growth doubles when students are assigned individual next steps through EP. This aligns with the belief that consolidated EdTech creates a more personalised, engaging learning experience for students. A single platform encourages independent learning and flipped learning models, which have been proven as more efficient due to resource consistency.

One key advantage lies in the ability of consolidated EdTech tools to run assessments and provide detailed insights across various subjects. This capability enables personalised learning paths to be developed, allowing students to receive immediate feedback and identify areas for improvement. This not only reinforces learning objectives but also empowers students to progress at their own pace, fostering a sense of autonomy.

Immediate feedback on assessments is crucial for students to understand and rectify errors. This contributes to student growth and promotes a deeper understanding of the material. Access to individual insights allows students to regulate their study habits, set learning goals, and track their progress over time, instilling a sense of responsibility on their learning journey.

Regular assessment also prepares students for standardised tests and exams. Familiarity with digital assessment tools and constructive feedback can alleviate test anxiety and improve students' emotional wellbeing, ultimately improving overall test-taking skills.

Another benefit a consolidated approach to EdTech is its capacity to develop 21st century, practical skills, such as:

- Critical thinking
- Collaboration
- Information literacy

Students develop these skills while learning to navigate digital platforms, analyse data and work with other students, arming them with transferable skills useful far beyond the classroom.

> “I appreciate that EP goes beyond being a mere tool for content revision, tracking student progress, and boosting student engagement, but that it is a platform that champions the individual student to achieve learning goals in ways that suit them best.”
>
> Mia Cooney, a teacher from Genesis Christian College, Brisbane, 2023

School-wide consolidation

Consolidated EdTech offers vast benefits beyond the classroom, too. Integrating and streamlining administrative, financial and school-level reporting functions enhances a school’s overall efficiency, too. EP analytics functionality allows the entire school to gain a holistic view of each student.

Opting for a consolidated EdTech platform ensures consistent, unified curriculum implementation across the school. School-level reporting enables leaders to analyse aggregated data, identify trends, assess teaching effectiveness, and allocate resources judiciously. A centralised assessment platform also ensures uniformity, allowing school leaders and educators to monitor student progress and maintain a comprehensive overview of academic performance for strategic planning.

> “EP has given our school an opportunity to collaborate with other departments with unique cross-subject and grade level challenges. This tool is a great addition to any institution that values enrichment.”
>
> MJ Havener, a teacher from Shanghai Singapore International, 2023

The pyramid peak: Redefining how we use classroom technology

Implementing Artificial Intelligence (AI)

The peak of EP's modern hierarchy of EdTech needs explores a future where technology creates new teaching possibilities. This is only possible if all subjects are already consolidated across a single platform. This 'peak' reimagines the traditional use of classroom technology, integrating formats such as:

- Virtual reality (VR)
- Augmented reality (AR)
- Artificial Intelligence (AI)

'Peak'-level technology provides deeper insights into how students learn and how to effortlessly meet the needs of individuals. Advanced AI enables seamless, personalised learning pathways by analysing individual student performance and adapting content in real-time. This approach addresses diverse learning styles, promoting an effective, inclusive learning environment beyond current capabilities.

The real-time analytics of AI tools provides educators with valuable insights into student progress. The resources shine a light on difficulties in coursework and analyses trends across student usage and performance. Through this behavioural analysis, AI algorithms can pinpoint students that need further guidance and enable teachers to quickly intervene.

This advanced technology is similar in concept to the pinnacle of Maslow's Hierarchy. Maslow's peak involves self-actualisation: creativity, spontaneity, purpose, and inner potential. AI resources help students realise their full potential and grow beyond the constraints of current classroom environments.

Personalising future learning at EP

EP's top priority is to enhance student growth. To achieve this, we focus on delivering enriched, adaptive learning experiences. These features will address the unique needs of each student through real-time feedback, individualised learning pathways, lesson recommendations, and adjustable assessments. The incorporation of AI into the platform will enhance these features even further.

EP's learning and assessment capabilities are likely to evolve, rather than change completely. The inclusion of AI in EP will allow educators to use the same tools but reap richer rewards. This includes:

- Student analytics identifying more significant trends and learning patterns
- AI-powered marking providing students with greater feedback to encourage critical thinking and creativity
- Digital teaching modes that optimise teachers' time in class with quality curriculum-aligned content
- Formative assessment tools that will continue to advance beyond traditional tests to suit individual learning styles and address learning gaps

Above all, the integration of AI technology provides educators with powerful tools to better understand their students, tailor instruction, and improve learning outcomes in a personalised manner.

Enhancing the role of teacher

Incorporating AI into the classroom reimagines the role of teacher, shifting the focus from generalised teaching methods to maximising student learning through engagement and a positive school culture.

AI empowers educators to assess and provide feedback on essential skills and competencies beyond the subject matter. This prompts the development of other critical skills, including:

- Problem-solving
- Communicating
- Collaboration
- Self-regulation
- Preparedness for real-world challenges

Rather than replacing teachers, AI serves as a powerful tool to amplify teachers' impact. Their professional judgement and understanding of students will always remain integral. However, by combining the power of AI with human insights, educators can maximise the benefits of classroom EdTech.

A 2023 Forbes Advisor study surveyed 500 American educators to understand their experiences with AI in the classroom. Respondents represented teachers at all stages of their careers, with varying levels of experience. 55% of surveyed teachers said that AI had improved educational outcomes, with only 18% stating that AI hindered educational outcomes.

60% of respondents use AI in their classrooms, with younger teachers more likely to adopt AI resources. Teachers under 26 years old reported the highest usage rates within the survey.

There is already an impressive range of AI tools available to teachers. 51% of teachers using AI claimed to use AI-powered educational games. 42% used AI for adaptive learning platforms, and 41% used it for automated grading and feedback systems. Other AI tools mentioned in the report included chatbots for student support and intelligent tutoring systems.

Increasing student engagement

Classroom-integrated AI will adapt learning materials to suit individual student preferences and progress. This personalised approach ensures that content and assessments are more engaging, capturing students' interests and motivation.

AI can also identify curriculum areas where students may struggle and provide targeted intervention opportunities, perhaps through adaptive learning modules or additional resources. The technology acts in real-time to ensure that students receive assistance precisely when and where it is needed. This immediate feedback allows students to correct their own mistakes and instantly reinforce concepts.

AI's ability to assess students – beyond what is required in the curriculum – ensures that students can develop transferable skills, such as critical and creative thinking, adaptability, and self-regulation. This prepares students to thrive in the complexities of the modern world.

AI's impact on school culture

AI is proven to enhance student engagement, self-regulation and personalised learning, which all contribute towards better academic performance across schools. As students become more engaged and autonomous in their online learning, they are likely to demonstrate increased motivation, understanding and mastery of the curriculum.

The positive impacts of AI will likely contribute to positive school cultures. When students feel that their individual needs are being addressed and educators can see tangible improvements, it fosters a supportive, continuously improving environment.

AI can also facilitate an efficient allocation of resources by identifying specific areas in need of further support. This allows schools to strategically allocate resources and maximise their impact. The proactive nature of AI positions schools as forward-thinking institutions, ready to equip students with essential skills for success in an evolving society.

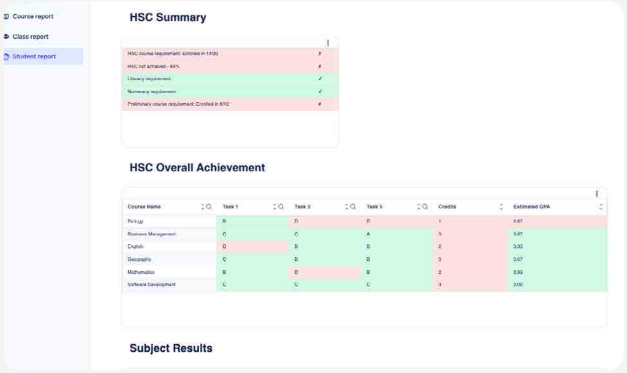
Conclusion

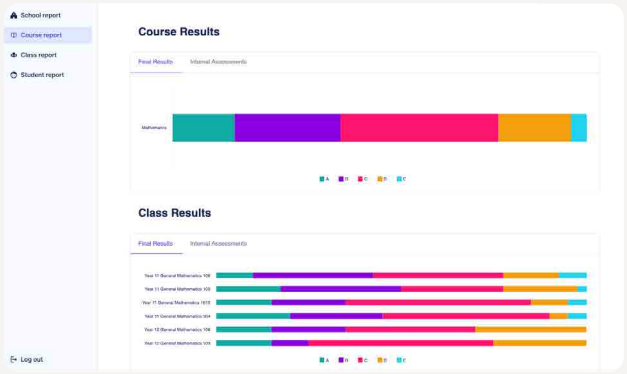
Navigating the growing world of EdTech can be overwhelming for school leaders, teachers and students. However, coordinating digital platforms and encouraging student engagement through different tools no longer needs to add to teacher stress.

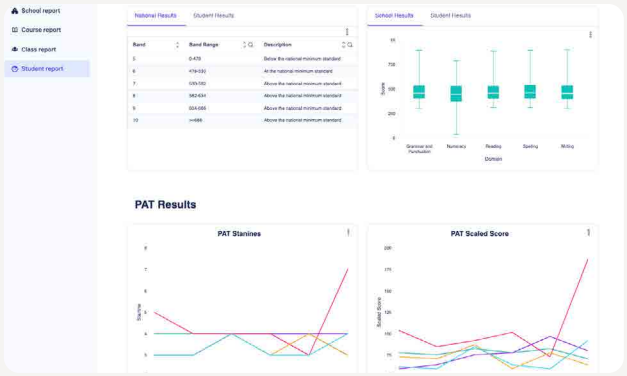
EP provides a single platform for all subjects, integrating school-wide content, assessments and analytics so teachers can build complete student profiles. These merged features enhance student outcomes, improve student wellbeing and better prepare them for real-world experiences.

By examining this topic as a pyramid, aligned with Maslow's Hierarchy of needs, no student needs – physiological or mental – are overlooked. EP is dedicated to humanising technology to inspire students and create lifelong learners. This will become increasingly important with the rise of AI and growing discussions around safe, ethical use of consolidated technology.

Education Perfect (EP) provides classroom resources through a single consolidated platform. It supports an adaptive learning cycle that benefits long-term student outcomes and provides curriculum-aligned, subject-specific content, assessments and analytics. Each subject's resources –grounded in evidence-based research – are delivered differently to ensure engaging learning experiences for students. The EP platform is designed to help teachers engage students, track student growth and differentiate teaching and learning.







Bibliography

Education Perfect 2023, 'The power of formative assessment', Education Perfect, https://www.educationperfect.com/wp-content/uploads/2023/05/Formative-Assessment.pdf (accessed 5 February 2024).

Government Technology News Staff 2023, 'Is Most Classroom Tech Helping Students, or Teachers?', Government Technology, https://www.govtech.com/education/k-12/is-most-classroom-tech-helping-students-or-teachers (accessed 5 February 2024).

GSE 2023, 'Revolutionising Formative Assessment with AI: Empowering Teaching and Learning', Global Services in Education, https://www.gsineducation.com/blog/revolutionising-formative-assessment-with-ai-empowering-teaching-and-learning (accessed 6 February 2024).

Hamilton, I. 2023, 'Artificial Intelligence In Education: Teachers' Opinions On AI In The Classroom', Forbes Advisor, https://www.forbes.com/advisor/education/artificial-intelligence-in-school/ (accessed 6 February 2024).

Lindner, J. 2023, 'Technology In Education Statistics [Fresh Research], Gitnux, https://gitnux.org/technology-in-education-statistics/ (accessed 5 February 2024).

Mcleod, S. 2024, 'Maslow's Hierarchy Of Needs', Simply Psychology, https://www.simplypsychology.org/maslow.html (accessed 6 February 2024).

Nagel, D. 2023, 'Learning Analytics and the Future of Change in the Classroom', Campus Technology, https://campustechnology.com/Articles/2023/09/26/Learning-Analytics-and-the-Future-of-Change-in-the-Classroom.aspx (accessed 5 February 2024).

PowerSchool 2021, 'SAMR Model: A Practical Guide for K-12 Classroom Technology Integration', PowerSchool, https://www.powerschool.com/blog/samr-model-a-practical-guide-for-k-12-classroom-technology-integration/#:~:text=The%20letters%20%E2%80%9CSAMR%E2%80%9D%20stand%20for,help%20students%20visualize%20complex%20concepts (accessed 5 February 2024).

Get in touch

educationperfect.com
educationperfectnz
epforlearning
educationperfect
educationperfect

Education Perfect