

edtechist

THE BEST OF THE FIRST 100 POSTS

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Can AI Make
Teaching Easier
And More
Impactful?

Can AI Make Teaching Easier And More Impactful?

Like many others, having observed ChatGPT burst onto the scene in the last few months, the disruption it has caused to education - both in terms of pupil and teacher use, it now seems that every other day there is news of a new AI platform being released.

In terms of the public arena, OpenAI launched ChatGPT in November 2022, and since then Google has launched Bard; Microsoft is integrating OpenAI to Bing (and firing a lot of their staff); Twitter has begun plans to use AI to detect & highlight any manipulation of public opinion, presumably from those pesky Russians & Chinese influencers who have been wreaking havoc on everything from Brexit to the rise in cost of Freddos (please re-read that sentence with your tongue in your cheek - that's where mine is currently). An interesting entrance to the AI arena came from Alibaba. If you've never heard of them, go spend some time on their site-they are the wholesale trade entry point for the world. Want to sell anything from drones to dinnerware? Alibaba is the answer! (That sales patter was just me, I'm not receiving any commission from Alibaba to talk them up.)

As far as education goes, there are issues that we need to resolve in the classroom to adapt to the existence of AI. The ability of AI to evade plagiarism tools is an issue for many

teachers and lecturers who set assignments. For students, the lure of a higher grade might be too tempting to resist. This story, published recently on the BBC (9th April 2023), shows how one student at Cardiff University revealed that he recently submitted two assignments. With one he used ChatGPT and got a first. In the second assignment, which he submitted without using the AI software, he got a low 2:1. Interestingly in this story, the student stated that he didn't copy everything word for word, but used it as a prompt - with questions to frame and plan his work. To me, this would reduce calls of cheating to being similar to using a tutor - albeit a digital one. Also interestingly, a FOI request to Cardiff University showed in the January 2023 assessment period there were 14,443 recorded visits to CHatGPT on the university Wi-Fi network, with 0 (zero!) logged visits in the month previous. Clearly the 'problem' if it is one (which I don't have the evidence to say either way) is at a large scale in the HE sector, where the stakes of achieving a good degree classification, in order to secure career employment are high.

So the existence of ChatGPT is an issue - but it does have benefits.



Strategy 1: AI-created examples

Teachers can leverage AI-created examples in their teaching in a variety of ways, depending on the subject, school year, and specific learning objectives. Here are some potential approaches:

Supplementing lesson materials: AI-generated examples can be used to enhance existing lesson materials. For example, in a maths class, teachers can use generated maths problems as additional practice exercises or homework assignments. These examples can provide students with diverse and varied practice opportunities that are automatically generated by the AI, saving teachers time and effort in creating a large number of practice problems.

Customising instruction: AI can analyse data on students' learning styles, strengths, and weaknesses, and generate personalised examples tailored to individual students' needs. This can enable teachers to provide differentiated instruction, addressing the unique learning needs of each student. For example, an AI-powered language learning tool can generate sentences or phrases with varying levels of difficulty based on a student's language proficiency level.

Encouraging critical thinking: generated examples can serve as prompts for students to engage in critical thinking and problem-solving skills. Teachers can use AI-generated scenarios or simulations that present real-world challenges, allowing students to analyse and evaluate the situation, apply their knowledge, and generate solutions. This can foster creativity, innovation, and analytical skills among students.

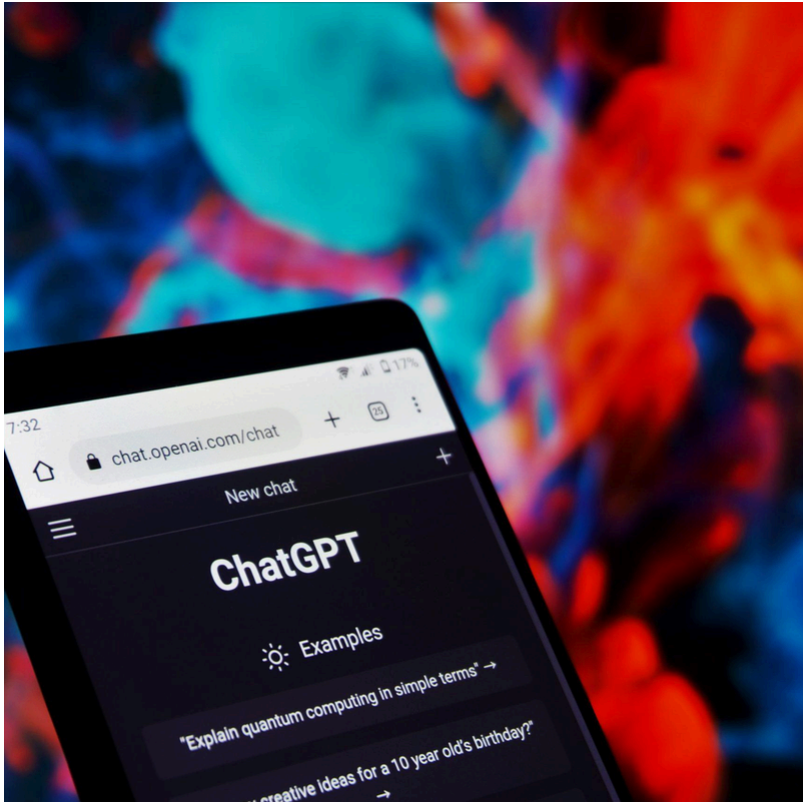
Enhancing feedback and assessment: AI can automatically assess student work and provide instant feedback. Teachers can use generated feedback to complement their own feedback, providing students with more comprehensive and timely insights into their performance. For example, an AI-powered writing tool can analyse students' writing samples and provide feedback on grammar, style, and content, helping students improve their

writing skills.

Sparkling curiosity and engagement: generated examples can be used to capture students' attention and stimulate their curiosity. For instance, virtual reality simulations or AI-generated visualisations can make abstract concepts more concrete and accessible to students, enhancing their engagement and understanding of the subject matter.

Teaching ethics and responsible AI use: As AI becomes increasingly prevalent in various domains, teachers can use AI-generated examples to teach students about ethical considerations and responsible use of AI. Discussing topics such as bias in AI, the limitations and risks of AI, as well as the ethical implications of generated content can help students develop critical thinking skills and digital citizenship.

It's important for teachers to use generated examples judiciously, ensuring that they align with curriculum goals, are appropriate for students' developmental levels, and are used in conjunction with human instruction and guidance. Teachers should also be aware of issues such as data privacy, bias, and responsible AI use when incorporating generated examples into their teaching practices.



Strategy 2: AI-created explanations

AI-created explanations can be a valuable tool for teachers to enhance their teaching in several ways:

Simplifying complex concepts: AI-generated explanations can simplify complex concepts by breaking them down into understandable language. For example, in a science class, an AI-generated explanation can clarify intricate scientific concepts or processes, making them more accessible to students who may struggle with the material.

Intelligent Tutoring Systems: AI-powered intelligent tutoring systems can provide personalised feedback and guidance to students during their learning sessions. These systems can adapt to individual students' needs, pace, and performance, and provide targeted practice activities or review sessions to reinforce previously learned material, promoting distributed practice.

Spaced Repetition Algorithms: AI-powered spaced repetition algorithms can optimise the timing and frequency of reviewing material to enhance long-term retention. These algorithms can determine the optimal time intervals for students to review previously learned information, and generate reminders or prompts for students to revisit the material for distributed practice.

Gamification and Adaptive Quizzing: AI-powered gamified learning platforms or adaptive quizzing tools can provide students with opportunities for distributed practice in a fun and engaging way. These tools can generate quizzes, games, or interactive activities that adapt to students' performance and provide immediate feedback, allowing students to review and reinforce their learning in a distributed manner.

Learning Analytics: AI-powered learning analytics tools can track students' learning activities and performance over time, providing insights to teachers about the effectiveness of distributed practice. Teachers can use these insights to monitor students' engagement, progress, and retention of previously learned material, and provide targeted feedback or additional practice opportunities as needed.

Content Recommendation Systems: AI-powered content recommendation systems can suggest relevant learning resources or activities for students to revisit and review in a distributed manner. These systems can analyse students' learning history, performance, and preferences to recommend appropriate content for review, helping students reinforce their learning through distributed practice.

By leveraging AI in these ways, teachers can effectively implement distributed practice in their teaching, promoting long-term retention and understanding of information among their students. It's important for teachers to carefully select and use AI-powered tools that align with their instructional goals, and to monitor students' progress and engagement to ensure the effectiveness of distributed practice.



Strategy 3: Using AI to develop low-stakes tests

Teachers can leverage AI to develop low-stakes tests, which are informal assessments that do not carry significant consequences for students, but are valuable for gauging student learning and providing feedback. Here are some ways teachers can use AI in the development of low-stakes tests:

Automated item generation: AI can automatically generate test items, such as multiple-choice questions, true/false statements, or fill-in-the-blank exercises. Teachers can use AI-powered tools to generate a large number of test items quickly and easily, saving time and effort in creating tests from scratch.

Adaptive testing: AI can analyse data on students' performance and generate adaptive tests that adjust the difficulty level of the questions based on students' responses. This can help tailor the test to each student's ability level, providing a more personalised assessment experience. For example, if a student answers a question correctly, the AI can generate a more challenging question, while if a student answers incorrectly, the AI can generate a less difficult question to help assess their knowledge level accurately.

Automatic scoring: AI can automatically score low-stakes tests, providing instant feedback to students and saving teachers time in grading. AI-powered scoring tools can evaluate students' responses to various types of questions, such as multiple-choice or short-answer questions, and provide immediate feedback on their performance.

Item analysis: AI can analyse data on test items, such as difficulty level, discrimination index, and item-response patterns, to help teachers identify the quality and effectiveness of the test items. Teachers can use this information to refine their test items and improve the validity and reliability of their assessments.

Content customisation: AI can customise test content based on various factors, such as the curriculum, learning objectives, and student preferences. Teachers can use AI-

powered tools to create tests that align with specific learning goals, reflect the content covered in their lessons, and match the students' learning pace or interests.

Question variety: AI can generate a diverse range of test questions, including different formats, levels of difficulty, and cognitive levels. This can help teachers create tests that assess various aspects of student learning, such as factual knowledge, critical thinking skills, and problem-solving abilities.

Test security: AI can help detect potential cheating or plagiarism in low-stakes tests. AI-powered tools can analyse patterns of similarity in students' responses, compare them with a large database of known sources, and flag potential instances of plagiarism or cheating.

It's important for teachers to use AI-generated tests thoughtfully and in conjunction with their professional judgment. Teachers should ensure that the test items are aligned with the curriculum, learning objectives, and the abilities of their students. Additionally, teachers should also consider issues related to data privacy, fairness, and ethical use of AI in assessment practices. It's crucial to balance the benefits of using AI in test development with the need to maintain a fair, reliable, and valid assessment process for students.



Strategy 4: Assessing what students know, and what they are confused by

Teachers can leverage AI to assess what students know and what they are confused by in a variety of ways:

Natural Language Processing (NLP): AI-powered NLP algorithms can analyse students' responses to open-ended questions or written assignments to identify their understanding of the subject matter. NLP can help teachers automatically evaluate the content, coherence, and quality of students' responses, providing insights into their knowledge level and areas of confusion.

Sentiment Analysis: AI can analyse students' written or verbal responses to assess their emotional state or sentiment towards a particular topic. For example, sentiment analysis can help identify if students express confusion, frustration, or confidence in their responses, providing valuable cues to teachers about their understanding of the material.

Adaptive Assessments: AI can generate adaptive assessments that adjust the difficulty level of questions based on students' responses. By analysing students' answers, AI can infer their level of knowledge and pinpoint areas of confusion. The adaptive assessments can then provide targeted feedback or additional questions to help students address their knowledge gaps.

Learning Analytics: AI-powered learning analytics tools can track students' interactions with digital learning resources, such as online lectures, videos, or simulations. These tools can analyse the data on students' engagement, progress, and performance, and provide insights to teachers about their strengths, weaknesses, and areas of confusion.

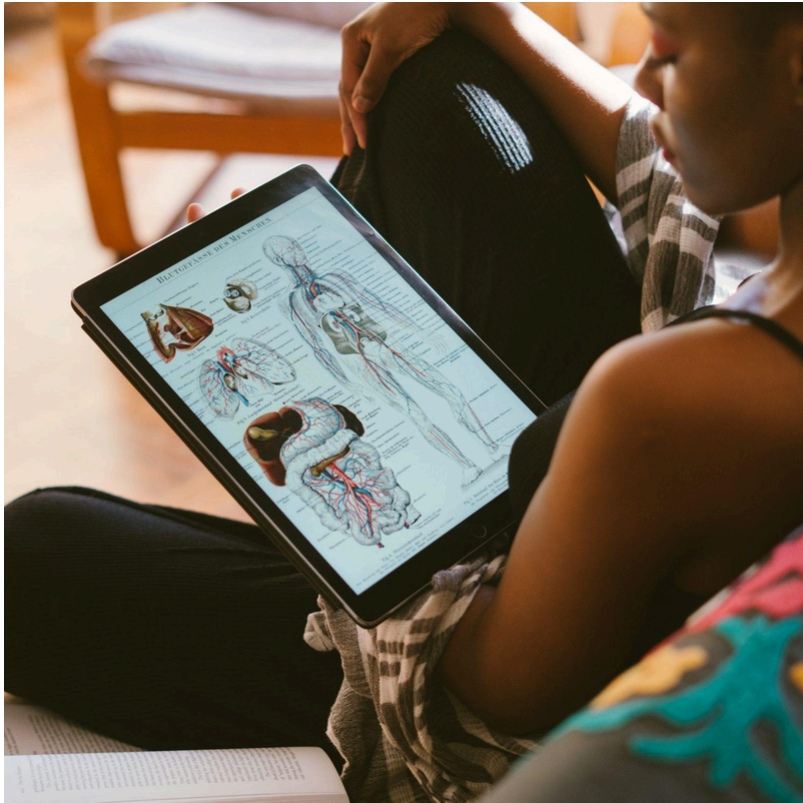
Automated Formative Assessment: AI can automate the process of formative assessment, which involves ongoing, low-stakes assessments to provide feedback and monitor student progress. AI-powered tools can generate quizzes, polls, or other interactive assessments to quickly assess students' understanding of the material and identify areas of confusion in

real-time.

Data Visualisation: AI can analyse and visualise data on students' performance, engagement, and progress in visually appealing and easy-to-understand formats. Teachers can use AI-generated data visualisations to quickly identify patterns, trends, or areas of confusion among their students, and tailor their instruction accordingly.

Chatbots or Virtual Assistants: AI-powered chatbots or virtual assistants can engage in conversations with students and provide personalised support. Students can ask questions, seek clarification, or express confusion to the chatbot or virtual assistant, which can then provide immediate responses or refer students to relevant resources or activities.

It's important for teachers to use AI-generated assessments or analytics as part of a comprehensive assessment strategy that includes other forms of assessment, such as teacher-led assessments, peer assessments, or self-assessments. Teachers should interpret the results of AI-generated assessments in conjunction with their professional judgment and consider the limitations and potential biases of AI algorithms. Additionally, teachers should ensure that student data privacy and security are maintained in compliance with relevant laws and regulations.



Strategy 5: Distributed practice with AI

Distributed practice, also known as spaced practice, is a learning technique that involves spacing out learning sessions over time to enhance long-term retention and understanding of information. AI can be used to facilitate distributed practice in various ways:

Personalised Learning Paths: AI-powered adaptive learning platforms can create personalised learning paths for individual students based on their performance, strengths, and weaknesses. These platforms can use algorithms to determine the optimal timing and sequencing of learning activities for each student, ensuring that students revisit and review previously learned concepts at appropriate intervals for effective distributed practice.

Intelligent Tutoring Systems: AI-powered intelligent tutoring systems can provide personalised feedback and guidance to students during their learning sessions. These systems can adapt to individual students' needs, pace, and performance, and provide targeted practice activities or review sessions to reinforce previously learned material, promoting distributed practice.

Spaced Repetition Algorithms: AI-powered spaced repetition algorithms can optimise the timing and frequency of reviewing material to enhance long-term retention. These algorithms can determine the optimal time intervals for students to review previously learned information, and generate reminders or prompts for students to revisit the material for distributed practice.

Gamification and Adaptive Quizzing: AI-powered gamified learning platforms or adaptive quizzing tools can provide students with opportunities for distributed practice in a fun and engaging way. These tools can generate quizzes, games, or interactive activities that adapt to students' performance and provide immediate feedback, allowing students to review and reinforce their learning in a distributed manner.

Learning Analytics: AI-powered learning analytics tools can track students' learning activities and performance over time, providing insights to teachers about the effectiveness of distributed practice. Teachers can use these insights to monitor students' engagement, progress, and retention of previously learned material, and provide targeted feedback or additional practice opportunities as needed.

Content Recommendation Systems: AI-powered content recommendation systems can suggest relevant learning resources or activities for students to revisit and review in a distributed manner. These systems can analyse students' learning history, performance, and preferences to recommend appropriate content for review, helping students reinforce their learning through distributed practice.

By leveraging AI in these ways, teachers can effectively implement distributed practice in their teaching, promoting long-term retention and understanding of information among their students. It's important for teachers to carefully select and use AI-powered tools that align with their instructional goals, and to monitor students' progress and engagement to ensure the effectiveness of distributed practice.



Teaching with AI assistance

Teachers can incorporate AI into their teaching in several ways to enhance their instructional practices and support student learning:

Personalised Learning: AI-powered adaptive learning platforms can create personalised learning paths for individual students, tailoring instruction to their unique needs, pace, and preferences. These platforms can use AI algorithms to analyse students' performance data, provide targeted feedback, and recommend appropriate learning resources or activities, allowing teachers to provide individualised instruction to each student.

Content Creation: Artificial Intelligence can help teachers create instructional materials, such as lesson plans, assessments, and learning resources. AI-powered tools can generate content based on curriculum standards, learning objectives, and student characteristics, saving teachers time and effort in creating high-quality instructional materials.

Data Analytics: AI-powered learning analytics tools can analyse students' learning data, such as performance, engagement, and progress, to provide insights to teachers about student strengths, weaknesses, and areas of improvement. Teachers can use these insights to inform their instructional decisions, tailor their teaching to individual student needs, and provide timely interventions.

Feedback and Assessment: Artificial Intelligence can provide automated feedback on students' assignments, quizzes, and assessments. AI-powered tools can analyse students' responses and provide immediate feedback on correctness, coherence, and quality, allowing teachers to provide timely feedback and address misconceptions more efficiently.

Virtual Mentoring: AI-powered virtual mentors or tutoring systems can provide additional support to students outside of the classroom. These systems can engage in interactive conversations with students, answer questions, and provide explanations or clarifications, extending the availability of instructional support beyond regular class time.

Language Learning: AI-powered language learning applications can assist teachers in teaching foreign languages. These applications can provide language exercises, pronunciation

practice, and real-time feedback on speaking and writing skills, helping students improve their language proficiency.

Classroom Management: Artificial Intelligence can help teachers manage classroom logistics, such as attendance, scheduling, and grading. AI-powered tools can automate routine administrative tasks, freeing up teachers' time to focus on instructional activities and student interactions.

Accessibility Support: AI-powered accessibility tools, such as text-to-speech or speech-to-text, can support students with special needs, including those with visual or hearing impairments. These tools can help teachers create inclusive learning environments and provide equitable access to educational materials.

It's important for teachers to thoughtfully integrate AI into their instructional practices, keeping in mind the unique needs and characteristics of their students, and balancing AI-powered tools with traditional teaching methods. Teachers should also consider the ethical implications of using Artificial Intelligence in education, including data privacy, bias, and fairness, and ensure that student well-being and educational outcomes are prioritised.

Final Thoughts

In conclusion, Artificial Intelligence has the potential to significantly enhance teaching practices, making them easier and more impactful. By leveraging AI-powered tools and technologies, teachers can personalise learning, create content, analyse data, provide feedback, offer virtual mentoring, facilitate language learning, manage classrooms, and support accessibility, among other benefits. It can save teachers time and effort, provide valuable insights, and enhance instructional delivery, ultimately leading to improved student outcomes.

Teachers can use it to create personalised learning experiences that cater to individual students' needs, pace, and preferences. AI-powered tools can generate content based on curriculum standards, provide timely feedback on student performance, and offer virtual mentoring or tutoring support. Teachers can also analyse data to gain insights into student strengths and weaknesses, informing their instructional decisions and interventions. It can assist in managing classroom logistics, such as attendance and scheduling, freeing up teachers' time to focus on instructional activities and student interactions.

Furthermore, Artificial Intelligence can support accessibility, making education more inclusive for students with special needs. AI-powered tools, such as text-to-speech or speech-to-text, can provide equitable access to educational materials for

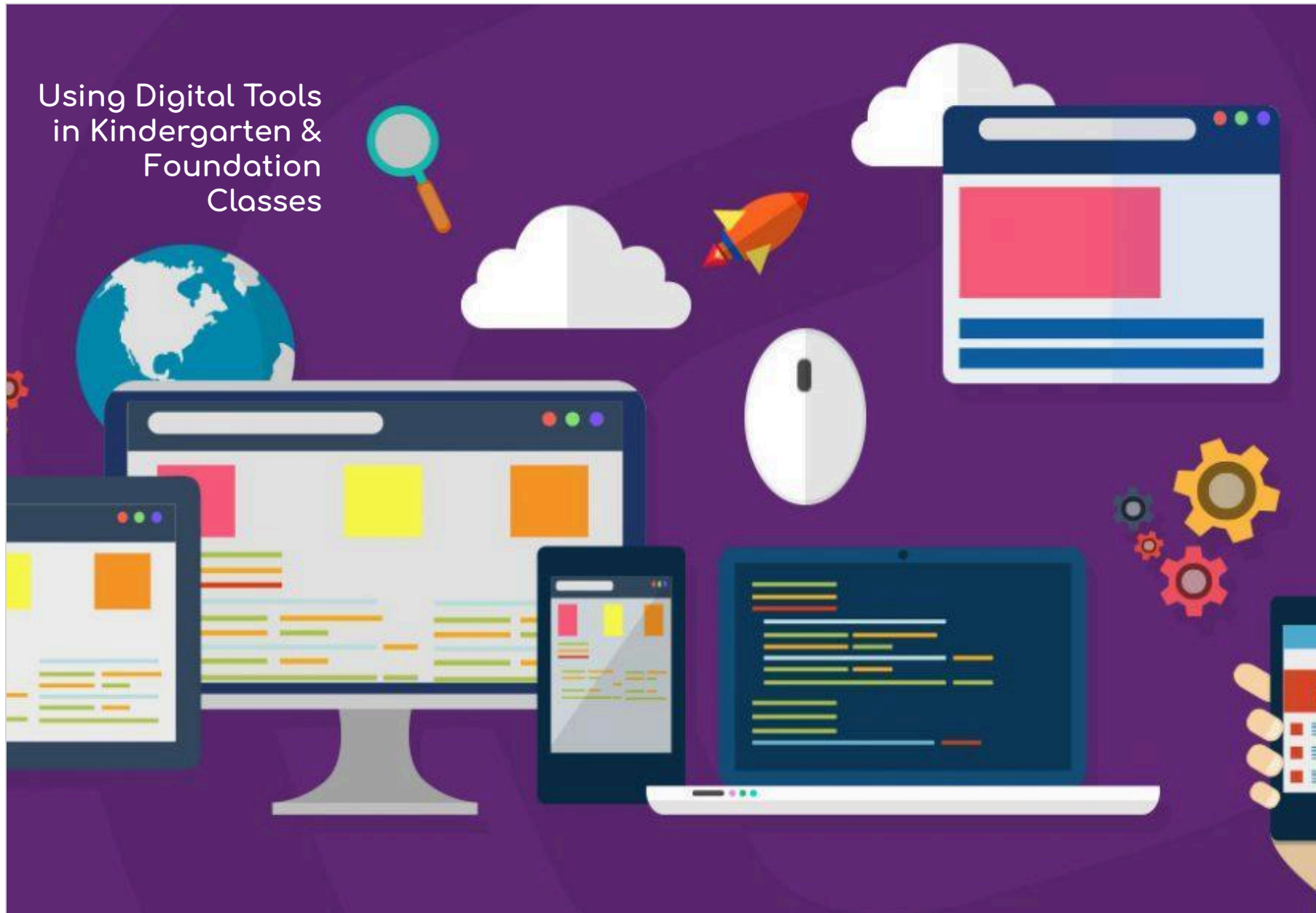
students with visual or hearing impairments, promoting inclusivity in the classroom.

It's important to note that while it has the potential to revolutionise education, it should be used thoughtfully and ethically, keeping student well-being and educational outcomes at the forefront. Teachers should consider the limitations and ethical implications of using AI in education, including data privacy, bias, and fairness, and use AI as a complement to traditional teaching methods, rather than a replacement.

In summary, Artificial Intelligence has the potential to make teaching easier and more impactful by offering personalised learning, content creation, data analytics, feedback and assessment, virtual mentoring, classroom management, accessibility support, and other benefits. By leveraging AI in a thoughtful and responsible manner, teachers can enhance their instructional practices and create engaging and effective learning experiences for their students.

The one thing AI cannot do, is teach like a human, interact with the nuance of a human, or create like a human. These core aspects of how we relate to one another is a major part of teaching and learning. That is something that can't be artificially replicated.

Using Digital Tools in Kindergarten & Foundation Classes



Using Digital Tools in Kindergarten & Foundation Classes

I love the power of Twitter! I put up a post on October about [10 EdTech Apps That Could Change How You Teach in the Classroom](#) and recently had a follower on Twitter ask if there was a similar list for Kindergarten/Foundation classes – so here it is: Using [Digital](#) Tools in Kindergarten / Foundation Classes!

I should definitely own up to not teaching foundation stage (or anywhere close!). So many all of these recommendations come from straightforward web [research](#) (there are 1 or 2 exceptions), very few are from experience, but some are interesting me enough to introduce to some of the little people in my family circle!

TABLETS ARE BEST

This isn't the post to discuss the virtues of operating systems, but the technical elements do come into it. We want to teach our classes good habits and behaviours – starting this at the early stages of school is important, and in the same way we teach healthy eating and exercise as good behaviours, the same must be true for ICT, at all levels of school. I'm also aware of putting another item on the workload of teachers at the junior

end of school – there are so many lessons and behaviours to establish already!

Tablets can be controlled to quite a high level. Parent/Child settings can really limit what [pupils](#) can access and so this element will certainly help ease any parental concerns. Many parents don't let their children have [technology](#) (and for valid reasons) and so this also needs to be negotiated. Limiting internet access and access to free [apps](#) that may contain advertisement content that you have no control over is part of the setup that is needed to ensure safe usage.

The larger screen for tablets will be another positive for tech skill development. For children who have yet to develop motor skills equivalent for their age, this can also be a teachable moment in their development – get them to unlock the tablet and navigate to the appropriate app. They'll enjoy the responsibility while developing their motor skills and working memory skills.

LIMIT USE

This one goes without saying in many respects as there is so much in the kindergarten/foundation curriculum! But it is also important for the development of the child. The Mayo Clinic quote the American Association of Pediatrics recommendation that “for children ages 2 to 5, limit screen time to one hour a

day.” So we need balance – like with so many things in life. It’s good to use technology, but as I have said in numerous posts, the important thing is to think critically about why we are using technology. What are we intending for the pupil to learn, and how is the technology enhancing their learning?

The Benefits of Using Technology in the Kindergarten / Foundation Classroom

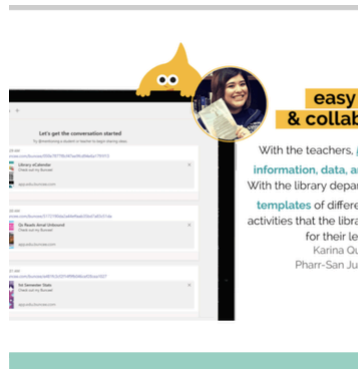
When it comes to learning letters & numbers and developing letter sound recognition, tablets can be the ideal tools to have on hand. They have both visual and auditory features that can assist children in making important connections. But make sure to use an app that shows how the mouth is formed to make the sound – for pupils that need this extra assistance in their development, this can be crucial to their learning. Best of all, there are a number of games that make the learning process more exciting. Individual learner profiles can be set up so that pupils can track their own development – particularly where scoring is involved!

Another benefit of using these tools is how they make it possible for schools with limited finances to be able to increase their library catalogues. Pupils can access a range of books at all learning levels. Furthermore, for some of these stories that are interactive, can help to increase student engagement and

enjoyment.

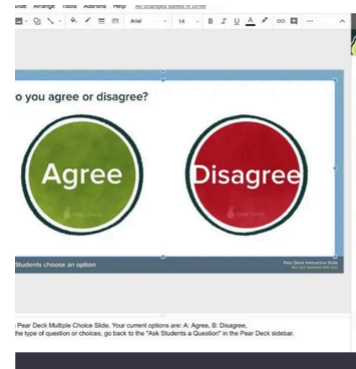
Once kindergartners/foundation pupils start taking trips to the school library, tablets can be used to learn how to search the existing catalogues and identify research materials or future reading content. In this way, they can be useful in both in the classroom and in the library setting. This will help kids to become more effective in their search for subject-specific materials.

The ultimate goal of using these tools however is to increase a child’s technical literacy. It is really important to remember that these could be resources that many impoverished children do not have access to at home. In an increasingly technological world, having basic technological literacy at an early age has become essential but also that digital inequality is limited and reduced as much as possible in the classroom.



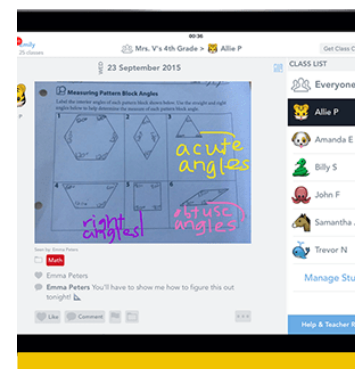
BUNCEE

Buncee understands how much more kids learn if they're engaged, so their platform makes it easy to engage students from anywhere. Teachers have the flexibility to create activities that their class will enjoy with over 1000 templates, and students earn badges as they complete their work.



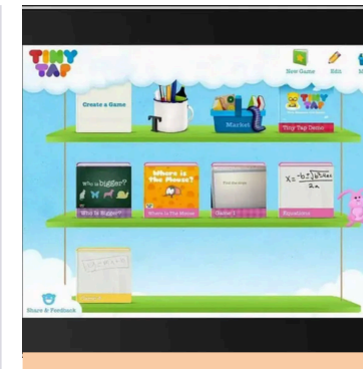
PEAR DECK

Pear Deck allows teachers to make lessons interactive so every student can actively participate, whether instruction is synchronous or asynchronous. It utilises formative assessment, active learning, retrieval practice, and more to close the achievement gap, even for students who are learning from afar.



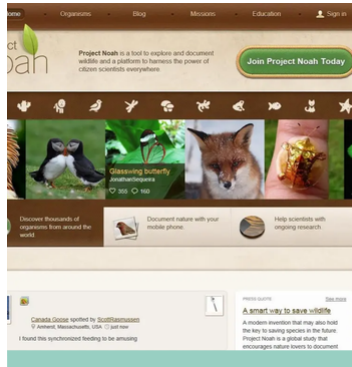
SEESAW

Rather than limit students to one method for demonstrating their knowledge, SeeSaw allows students to show what they know with tools like draw+record, collage, video, and more. Educators report that SeeSaw is intuitive for students to use, so minimal support is required to use this tool!



TINY TAP

TinyTap is home to more than 100,000 learning activities for students and teachers to use. TinyTap Market encourages students to learn by teaching, and provides the tools to help people develop their own games. Creators can even sell their games to gain recognition for their work.



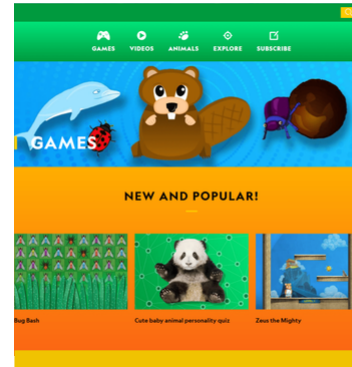
PROJECT NOAH

Launched in 2010, Project Noah was created to encourage citizen scientists to document the world around them. Teachers can make this part of the classroom experience by turning students into citizen scientists sharing their discoveries.



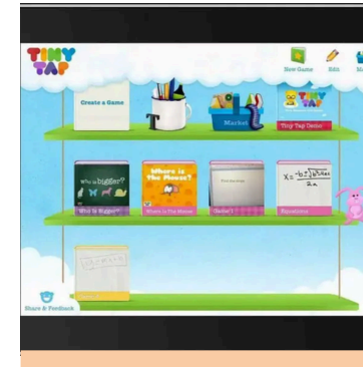
STARFALL

Starfall is an online service that was initially designed to teach children to read. It can be downloaded for use at home and in the classroom. Now, it also features animated songs, movies, and mathematics activities for Pre-K, Kindergarten, and Grades 1 to 3.



NATIONAL GEOGRAPHIC KIDS

This website is filled with different games, quizzes, and personality tests. Their aim is to educate children about various topics, from language and geography to Greek mythology and History.



FLIPGRID

Social learning is becoming one of the best ways to educate our younger generations, and this is exactly what Flipgrid is all about. It provides a free video discussion app that enables students of all ages and backgrounds to engage in meaningful conversations and connect with others.

Final Thoughts

As I've probably said quite a few times in other posts, I teach in the post-primary sector in a Grammar school in Northern Ireland (I believe this is equivalent to Middle & High School in America?), but I wish we still kept some of the fun I see in these apps with our older students!

I would love use Project Noah and be able to take a class of students out on a walk around our town and document what we see! (I still might do this with my children though!). TinyTap is

another app that I really like the look of and think it would be really useful because of what it offers and the skills it develops in children.

As always though, the most important point is that these tools are used with your Kindergarten / Foundation class in a way that is meaningful and makes effective use of the technology to enhance learning, not just a throw-in or time-filler for your class.

Using OneNote in
the Classroom

OneNote



Using OneNote in the Classroom

In the evolving landscape of educational technology, the tools that truly endure are those that solve real-world classroom challenges. Microsoft OneNote stands out not merely as software, but as a foundational pedagogical framework. By seamlessly combining digital organization, interactive lesson delivery, and real-time feedback loops, OneNote transforms how teachers manage their workflows and engage with students. To understand OneNote is to understand how modern technology can amplify an educator's impact while drastically reducing administrative burden.

At its core, OneNote bridges the gap between traditional teaching methodologies and the necessity of digital literacy. It replaces the physical constraints of heavy binders, photocopier jams, and lost assignments with an agile, cloud-based ecosystem.

A Three-Dimensional Approach to Learning

The true power of OneNote in an educational setting is unlocked through the **Class Notebook** architecture, which redefines the boundaries of the classroom into three distinct, functional spaces:

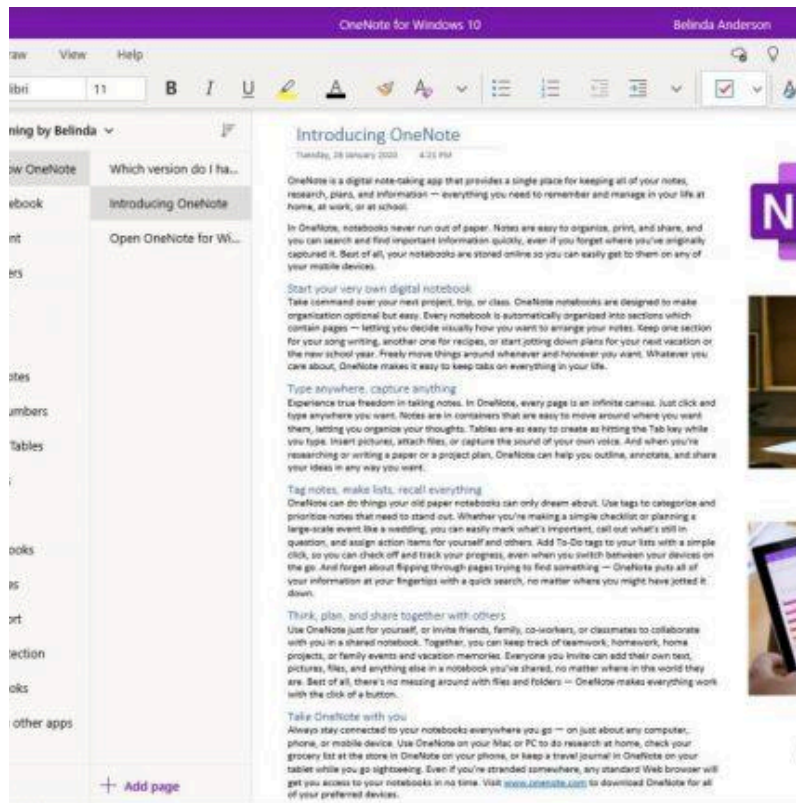
The Content Library: A digital textbook and bulletin board

where teachers can publish view-only lectures, readings, and resources. Students can access and copy these materials at any time, but the master copy remains secure and unaltered.

The Collaboration Space: A dynamic, open canvas where students can work together in real time. This space fosters peer-to-peer learning, brainstorming, and group project management, breaking down the walls of isolated desk work.

Independent Student Notebooks: A private workspace shared exclusively between the teacher and each individual student. Here, students can process information at their own pace, while teachers can drop in asynchronously to provide highly personalized guidance, scaffolding, and intervention.

Ultimately, OneNote is not just about going paperless; it is about building a scalable framework for differentiated instruction. It empowers teachers to meet students precisely where they are, offering a structured yet flexible environment that accommodates diverse learning needs. By shifting the logistical heavy-lifting to an intuitive digital platform, educators are liberated to focus on what matters most: the human connection of teaching and learning.



Organising, Accessing, Collaborating, and Sharing Content

OneNote can be a very useful tool when it comes to organising your teaching materials and staying on top of your lesson preparations. Here are some of the ways this app can help you:

All your notes and resources are in one place. OneNote allows you to create multiple notebooks, sections, and pages so you can keep all your lesson plans, notes, and teaching resources in one central location.

You can use OneNote to create lesson plans and Schemes of Work. OneNote can be used to store your lessons plans, including lesson objectives, activities and assessment strategies. These can include links to resources or multimedia content that you want to use in your lesson.

You can use tags within OneNote to organise content. The tagging system in OneNote can be used to label and organise content in a notebook. You can create a shared list of tags with your colleagues, so you can all use the same system to keep track of important information.

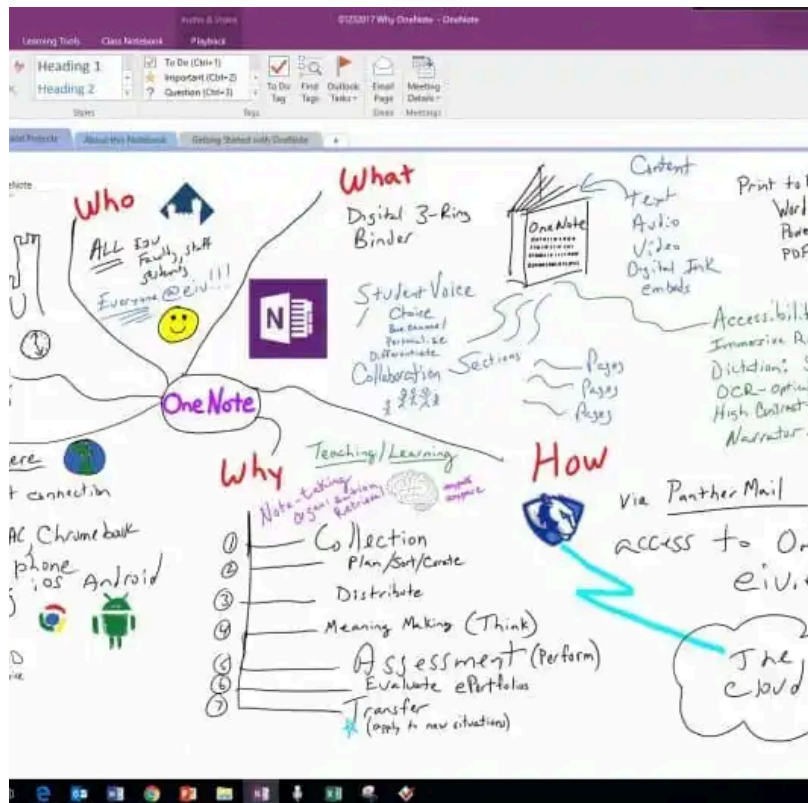
You can use OneNote to collaborate with others. If you work in a primary setting, and there is more than one teacher per year group, you can share notebooks with the other teachers teaching the same year group. In a post-primary setting, you can share your notebooks with other teachers in your department. This collaborative approach allows you to cut down or share the workload and ensure that all classes are following the same curriculum. Private communication about student progress can also be shared, where you might need to make a case for extra support. Collaboration across multiple accounts is possible, allowing more than one person to edit and create content in real-

time. Comments can also be left on pages and sections, meaning that you can provide feedback as appropriate.

OneNote allows you to keep track of everything that is important to you. In OneNote you can create pages or sections for each student. Recording grades, notes and progress for each student is much easier and can be used to communicate with parents. This is even more helpful if a subject leader or pastoral leader requires information – this can be shared with them easily. OneNote also works for organising department administration: minutes from meetings; to do lists, exam preparation, notes of tasks throughout the year can all be setup in OneNote to help you keep on top of what you need to do in your teaching role, which might not always be classroom-based.

OneNote can be used on multiple devices. As OneNote is a cloud-based app, you can access up to date notebooks on multiple devices: desktop, laptop, tablet or smartphone. This means your work is always accessible and you can review student progress, or develop new resources on any device.

Overall, OneNote is a valuable tool for teachers who want to stay organised, streamline their teaching and admin processes. By using OneNote to keep all of your notes and resources in one place, create lesson plans, collaborate with others, keep track of pupil progress, stay organised with your admin and access your notebooks from multiple devices, you can use OneNote to make your teaching more effective and efficient.



Presenting Content

OneNote can be a very effective tool for presenting content in a classroom or meeting setting. Here are some ideas for presenting content with the app:

You can use OneNote to create a notebook specifically for your presentation. This can contain the presentation file and additional content that you want to share with your audience.

Multimedia features. OneNote allows you to add multimedia content into notebooks including: images, audio, video, and interactive content like quizzes and polls.

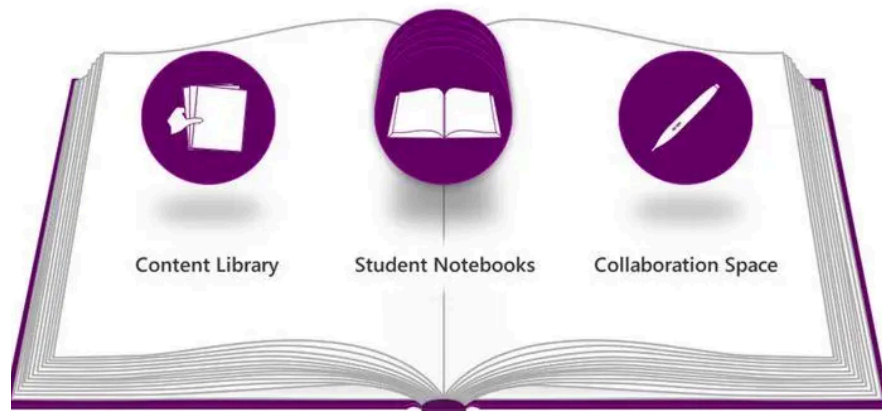
Drawing tools. OneNote has a range of drawing tools that can be used to draw diagrams, sketches, mindmaps or other visual aids that can enhance your presentation.

Built-in screen recording. OneNote has a built-in screen recording feature that allows you to record your presentation as you present it. This can be useful for creating a video of your presentation for review at a later date.

Full-screen mode. This is a helpful tool that is designed to

present your content without distractions. This can be useful if you are presenting to a large group and want to make sure everyone can see your content clearly.

Overall, OneNote can be a useful tool for presenting content. With dedicated notebooks, using multimedia content can enable you to create engaging and effective presentations to your audience.



Allowing flexible teaching approaches

OneNote is a digital note-taking application that provides teachers with a versatile tool that can support a wide range of teaching styles. Here are some ways it can support flexible teaching styles.

Collaborative note-taking: OneNote allows for multiple users to edit and share notes in real-time. This feature enables collaborative note-taking between students and teachers, which can facilitate interactive and engaging classroom discussions.

Digital Ink: With OneNote, teachers can use a stylus or digital pen to write or draw on a tablet or computer screen. This feature can enable you to draw diagrams in a notebook, which can facilitate visual and interactive teaching.

Audio and Video Recording: OneNote allows teachers to record audio and video lectures and embed them in their notes. This feature can facilitate self-paced learning, allowing students to access the lesson at their convenience. This will provide extra assistance to pupils with additional needs, processing delays, or during revision periods prior to examinations.

Integration with other tools: OneNote can integrate with other

tools such as Microsoft Teams, Outlook, PowerPoint and a number of third party platforms that ultimately allows OneNote to be more flexible to help teachers share lesson content with students using a variety of formats, facilitating personalised and differentiated learning.

Cloud-based storage: OneNote stores your notes in the cloud, which makes them accessible from any device across different platforms and operating systems. This can allow students to access your notes (and theirs) from anywhere. This facilitates remote and asynchronous learning.

Overall, OneNote provides a versatile tool for teachers to support a variety of teaching styles and enable teachers to engage pupils in collaborative, interactive and personalised learning.

Digital Ink

Digital ink in OneNote refers to the ability to write or draw on your OneNote pages using a stylus or your finger on a touch-enabled device. This feature allows you to create handwritten notes or sketches directly on your OneNote pages as if you were writing on paper.

OneNote uses advanced handwriting recognition technology to convert your digital ink into text, which can then be edited, searched, and shared like any other text in OneNote. You can

also select and move your handwritten notes around the page or between pages, as well as adjust their size and colour.

Digital ink in OneNote is a powerful tool for taking notes, brainstorming ideas, sketching diagrams, and even creating artwork in class. It can help you express your ideas more naturally and creatively, while still retaining the benefits of digital organisation and accessibility.

Final Thoughts

OneNote is a tool that I use for everything from planning meetings to shopping lists to writing textbooks. Despite my usage of it, there are aspects that I don't use, have yet to explore or begin using to its full potential. I have begun using the sharing notebooks with my students, but even in this there is more for me to learn and do.

As a tool in the classroom it is very powerful and one that I would readily recommend to so many for very different reasons. That it

can be synced across multiple devices means that I am never without my notebooks and can work on anything that comes into my head and move it on when I am at a computer screen.

If you haven't yet used it, I would suggest you start playing with it today – the user interface is easy to use and quick to pick up. You'll quickly see the potential for it in your classes. Go have some edtech fun!

Developing Digital Strategy in Your School



Developing Digital Strategy in Your School

Developing a digital strategy in your school can be a stressful topic. Simply because of the scale of the task. Questions that are repeatedly generated can be unending... is the hardware sufficiently future-proof? Will teacher usage of the hardware present a good return on investment? Is the license fee worth the money? Are there cheaper/better/more accessible alternatives? What do staff want/need trained on? What about AI?

These questions can always run through your head because technology keeps moving forward and improving. What is current today will be out of date in 6-12 months. Look at the iterations of iPhone: every year a new device, every year, your device creeps closer to obsolescence. In education, with a (very) limited budget, how do we try to avoid this for as long as possible?

Define Your Goals and Objectives

At the beginning of the process of setting your digital strategy in a school, there needs to be a clear connection with the school's overall vision and goals.

It may be more helpful to think about the culture of the school first. What are the prevailing principles in the school? Academic excellence? Vocational preparation? Sports? All of these aspects should be considered as they will contribute to your digital development strategy and its overall success.

A digital strategy must be clear on what it is trying to achieve, how it wants to achieve it and what it will look like when it is complete. A timeframe must be achievable and realistic. This will take into consideration the capabilities of the staff and their digital readiness. How much training is required will also determine a level of success – and will certainly contribute to staff willingness to embrace new digital skills, devices, software, etc. as well as their willingness to use these in a classroom setting.

Assess Your Current Position

To begin with assessing your current position when setting your digital strategy in school, you should begin with conducting a thorough assessment of your infrastructure – this will include current hardware, software and network capabilities. You should also review staff skillsets – where are the gaps in knowledge, what do staff want to know?

Collaboration should also be sought with IT teams, teaching and non-teaching staff, as well as administrative staff to ensure that everyone is on the same page and that the strategy is aligned to the school goals or development plan.

The Department for Education (DfE) has published a series of guidance documents to help schools develop their technology strategies. These documents cover a range of topics, including broadband, network switching, network cabling, wireless, cyber

security, filtering and monitoring, cloud solutions, servers and storage, laptops, desktops, tablets, digital leadership, and governance.

The guidance suggests assigning a senior leadership team (SLT) member to be responsible for digital technology, who will have strategic oversight of all digital technology and create and manage the digital technology strategy led by the needs of staff and students, not the technology itself.

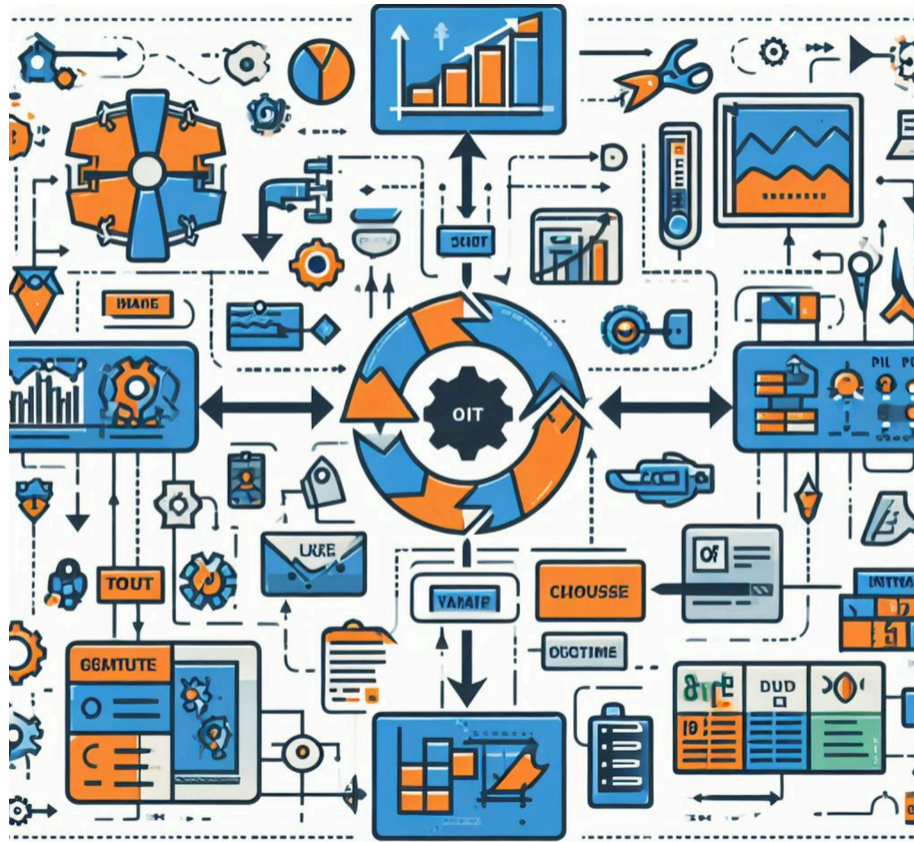
The digital lead within the SLT will then have the task of creating a digital technology strategy that is reviewed every year, which must support the school or college's development plan and educational vision and be sustainable and minimise the impact on the environment.

Develop a Plan

To develop a plan for digital development in a post-primary school, you can follow the Digital Learning Framework (DLF), which is a tool to help schools manage the transformation of teaching and learning as a result of embedding digital technologies into practice. The DLF has been developed to enable schools to implement elements of Ireland's national Digital Strategy for Schools.

Here are some steps you can take to develop a plan for digital development in a post-primary school:

- Identify the focus of your digital learning plan: This involves selecting the dimensions and domains from the DLF that are relevant to your school. You can also identify the standards and statements from the DLF that are relevant to your school.
- Assess your strengths and areas for improvement: You can summarise your strengths with regards to digital learning and identify areas that need improvement.
- Develop your digital learning plan: Based on your assessment, you can develop a digital learning plan that outlines your goals, objectives, and strategies for improving digital learning in your school.
- Create a digital learning action plan: This involves identifying specific actions that need to be taken to achieve your goals and objectives.





Engaging the Stakeholders

Engaging the stakeholders around a school can be of benefit when it comes to setting your digital strategy. Using the groups will give a more rounded and holistic view of what your digital strategy will look like. You will have staff, parents, local businesses and governors who will be able to feed into your strategy in unexpected ways. Parents who work in a digital field may volunteer their expertise in ways that benefits pupils, that you otherwise would not have known to use – mock interviews, pupil work placements or training seminars can all enrich your strategy in a way that you might miss, if you don't ask. Other contributing factors to your digital strategy that you will need to consider will also include:

- Finance
- Online Safety
- Special Education
- Data Privacy
- Network Manager and IT admin
- Training and Professional Development

Provide Training and Support

When developing your digital strategy for a post-primary school, it's essential to consider effective training and support to ensure long term adoption and success. Here are some key points to develop when considering training and support:

Digital Learning Framework (DLF): Familiarise yourself with the Digital Learning Framework, which is designed specifically for post-primary schools. This framework adapts the UNESCO ICT Competency Framework to schools based in Ireland and provides clarity on embedding digital technologies into teaching practices. It guides teachers and school leaders in creating a shared vision for technology-enhanced learning.

Professional Development: Invest in professional development for teachers. Through a staff audit, identify where workshops, seminars, and ongoing training sessions would be best placed and designed to enhance staff digital competencies. Covering topics such as using educational software, integrating technology into the curriculum, and effective online teaching methods will all be necessary parts of this step and will allow for the development of staff and give them the skills required to improve their classroom practice through the implementation of technology.

In-Service Training: Organise in-service training days where teachers can learn about new tools, platforms, and best practices. Invite experts or experienced educators to lead sessions on specific digital skills. A key component here is giving staff the time to use the technology in an environment that is low stakes and low pressure. Any failure or difficulty should be

framed as part of the learning experience. Allowing staff to have this time will maximise the potential for whole school adoption of the new technology.

Peer Learning Communities: Encourage the formation of peer learning communities within the school. Teachers can collaborate, share ideas, and learn from each other. These communities foster a supportive environment for skill development. Communities like these can be informal and relaxed, which will be necessary to encourage staff participation. One format this could take is staging the meeting at break time – this will keep everyone to a strict timeframe and be user friendly to the presenter. Rotate around the school through each department. This will ensure everyone takes part. Bring buns. Everyone loves buns. In my school, I developed a plan for 'Tea and technology.' This would have a scheduled list of staff who would present to other staff, sharing a technology tool that they used in class to enhance learning or as part of their daily professional activities that helped them do their job better. The meetings were held at break time – this encouraged a prompt starting and end point as staff had classes to teach. Moving around departments allowed teachers to learn from each other and it meant that no one person (me or another ICT teacher) were solely responsible for the content. The main title of the training session was known so that we could advertise the event to all staff, and it also allowed staff to make informed decisions about their own CPD.

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Mentoring: Pair experienced teachers with those who need support. Mentors can guide their colleagues in using digital tools effectively, troubleshooting issues, and implementing innovative practices. It is important in this area to ensure that the mentors have had appropriate training in mentoring, but this can also be an effective means of training staff. It is personal and private to the individual staff and can be as much or as little as is required.

Resource Libraries: Creating a digital resource library with tutorials, guides, and examples can be a highly useful and valuable resource. Including resources for both beginners and advanced users will maximise its relevance and continued use by staff. Make these materials easily accessible to all staff members – online would be a good location (it is a digital strategy after all). This can form part of your digital strategy when you look at point 8 in this section. Using a platform like MS Teams that incorporates SharePoint, allows for the building of specific resource libraries for staff. In my school, I have been developing our own resource library on using AI in school that is built using SharePoint, and then will be embedded in MS Teams. All staff will have access to this and so will be able to use as much as is required.

Technology Coaches: Appoint technology coaches who can work closely with teachers. Coaches provide personalised support, answer questions, and offer practical advice on integrating technology into the classroom. This could be implemented similarly to the mentoring programme, but would need to include different staff so that the same staff are not being called upon and burned out through overuse.

Collaboration Platforms: Use a digital platform for collaboration and communication. Tools like Google Workspace, Microsoft Teams, or learning management systems (LMS) facilitate sharing resources, lesson planning, and discussions. In my school, we have been using Google Workspace since lockdown, but are beginning a slow transition to Microsoft. Our staff have MS Surface Pro devices and so this makes a lot of sense in being able to embedding the Microsoft environment at a deeper level and to reduce the number of platforms staff use – streamlining these technology tools will reduce tech fatigue and encourage greater success in non-teaching/admin tasks.

Feedback and Reflection: Regularly seeking feedback from teachers regarding their training experiences will ensure improvement. By encouraging reflective practice, where educators assess their own digital teaching methods and identify areas for improvement will bring about a much more effective

and impactful process.

Leadership Support: Involve school leaders in the process. Principals and senior management should champion the digital strategy, allocate resources, and actively participate in training initiatives. School management need to lead from the front on this otherwise it will result in a lot of hard work that is not fully used, implemented or benefitted from by all staff (and waste the time of the person/team in charge of digital strategy).

Remember that successful implementation of a digital strategy relies on continuous learning, adaptability, and a supportive school culture. By providing effective training and ongoing support, you empower teachers to use technology effectively in their classrooms.

Monitor and Evaluate

Monitoring and evaluating progress in a post-primary school's digital strategy is crucial to ensure its effectiveness and adaptability. This is where the hard work really begins. It is one thing planning, designing and training, but this is where your colleagues really decide how much they want to do. A decision you have no real control over. But that's not to say there is nothing you can do about it! Here are some steps to help achieve progress and development among your staff:

Set Clear Objectives: Begin by defining specific, measurable, achievable, relevant, and time-bound (SMART) objectives for the digital strategy. These objectives serve as benchmarks for progress. These targets are user-centric and do not need to be 'huge' targets. They can be subject -specific and they can be within a chosen topic. The main focus is that the target is clear and achievable. This should be within the area of the individuals' development.

Usage Metrics: Monitor the usage of digital tools and platforms. Collect data on how often teachers and students engage with the different platforms in use throughout the school.

Attendance and Participation: Track attendance and participation in digital training sessions, workshops, and online courses. This metric might not be as useful in instances of mandatory participation, for example school training days. It may be of greater use if you have online training courses in place as this would be of greater use as the teacher is choosing to participate.

Platform Analytics: Use analytics tools within learning management systems (LMS) or collaboration platforms to assess user engagement. These will vary from platform across different schools, but it can be important to show teacher engagement. Be careful as this also assumes that the teachers need to access the learning content-if they don't, does this point to a lack of engagement or a level of competence? It's important to be able to distinguish this. Luckily, to do this...

Survey Feedback: By conducting regular surveys to gather feedback from teachers, students, and parents regarding their experiences with digital learning, you can determine self-audited digital skills, which will point to the level of competence that we want to see among staff and pupils.

Qualitative Assessment: Here, we would advise to create a

programme to observe classroom practices. Are teachers effectively integrating technology into their lessons? Are students actively participating? This item might be more difficult because of the physical requirements (and general busyness of schools) but can be useful for staff to receive feedback on their use of technology, receive praise for using a new technology and also have some time with the Digital Strategy teacher about how to move forwards.

Subject leaders can liaise with the Digital Strategy leader to review lesson plans and curriculum documents to ensure alignment with the digital strategy. This cascading approach should aim to meet in the middle with teaching staff operating an ascension approach.

There should be an evaluation of the quality of digital resources created by teachers (e.g., videos, presentations, online quizzes). This aspect will be quite simple for the subject-specific teacher. They will know their subject material much better than the Digital Strategy teacher and so will be well placed to know the quality of the content. With regards to the digital component, this will again take the lead from the subject teacher. Is the information presented in a way that is coherent, easy to understand or helpful?

Teacher Self-Assessment: Most teachers do engage now in reflecting on their own progress. Encouraging this to be more systematic can lead to greater impact across all classes. The power of self-reflection (and journaling, which is similar, but written) has a profound effect upon learning. The more we write, reflect, analyse, evaluate and explain, the better we become at our jobs. This site in its origin was an exercise in writing and exploring how we use technology in the classroom. It has led me to become a better teacher as I work out the difficult areas of using technology in education. From this point, we can encourage staff to think about how they are achieving their personal goals related to digital skills and then take action based on this outcome to continually develop and improve.

Student Performance: There should be an analysis of student performance data with respect to the school digital goals and objectives. Are there improvements that could be made in academic outcomes related to digital learning? These answers will typically present themselves through observation or informal discussion with staff.

Can pupils upload documents to Google Classroom or the VLE being used in your school? Are there other skills they should have but are lacking?

In this you should also consider both quantitative (grades, test

scores) and qualitative (student engagement, creativity, student voice) indicators as a means to determining any changes that might be necessary or suggested.

Feedback Loops: A useful tool that can help make a greater impact on the effectiveness of the strategy is to establish regular feedback loops with teachers, students, and parents. These insights and justifications to refine the strategy can be very meaningful. It can be a feature of developing these types of systems that while the developer has considered the user in development, it is very different to how the system works in real time with the user. Feedback from this stage can be very insightful to making further improvements.

Feedback in this stage can be collected through surveys, focus groups, or open forums.

Technology Integration Rubrics: Developing rubrics that assess the level of technology integration in classrooms is another important step in digital development. These rubrics can guide staff and students through self-assessment and peer evaluations. For pupils, this will show their progress in digital skills development and for staff can guide or inform their CPD choices.

Case Studies and Best Practices: It will be useful to document successful case studies where digital strategies have led to positive outcomes. By charting the steps and decisions other institutions have taken, this can help guide your own decision-making process. This can also help avoid pitfalls and guide budget allocations. School budgets are a bit of an awkward topic currently, but reviewing these case studies (and contacting the schools directly) can help direct any school budget to areas that are high priority or will make the greatest impact. Sharing these best practices with school staff can be inspiring where there are new ways in subject areas to make an impactful use of digital technology to enhance pupil learning and achievement.

Adaptability and Flexibility: The strategy needs to be open to making adjustments based on emerging needs, technological advancements, and changing educational contexts. AI is just one area that all digital strategies have had to adapt to in the last year and so your strategy should be open to making in-flight adjustments as required. A regular review to update the strategy is good practice as it can allow for a review to be taken from all stakeholders and give a whole school picture of progress and successes to date.

Reporting and Accountability: It will be necessary to create periodic reports that summarises progress to date. These reports should be presented to school leadership, staff, and relevant stakeholders in order to keep digital development at the forefront staffs' minds – it can be very easy to let some things slide because teaching staff are trying to teach their curriculum and prepare students for exams. By keeping attention on school digital development, this will also ensure accountability within departments and across management.

Accountability can also be attained by assigning responsibility to staff within the digital development team for monitoring progress. This means that everything to do with the digital development strategy is down to one person and that same person is presenting everything to do with this plan. The aim here is to spread responsibility so that it is not a one-person show.

Remember that monitoring and evaluation are ongoing processes. Regular reviews allow for course corrections, feedback and continuous improvement.

Final Thoughts

Implementing a Digital Strategy can be a daunting task. There are many components to bring together and can be more problematic when it comes to working with a number of staff who have different levels of digital competence and interest in bringing technology into the classroom. Some subjects lend itself to digital skills better than others and this is another aspect to consider when it comes to designing, implementing and assessing the impact of a digital strategy.

The simple truth however is that we cannot work or teach in an environment where technology is not involved. Our lives do not reflect this and so it would be anachronistic to live in one society, but teach according to the beliefs and behaviours of another.

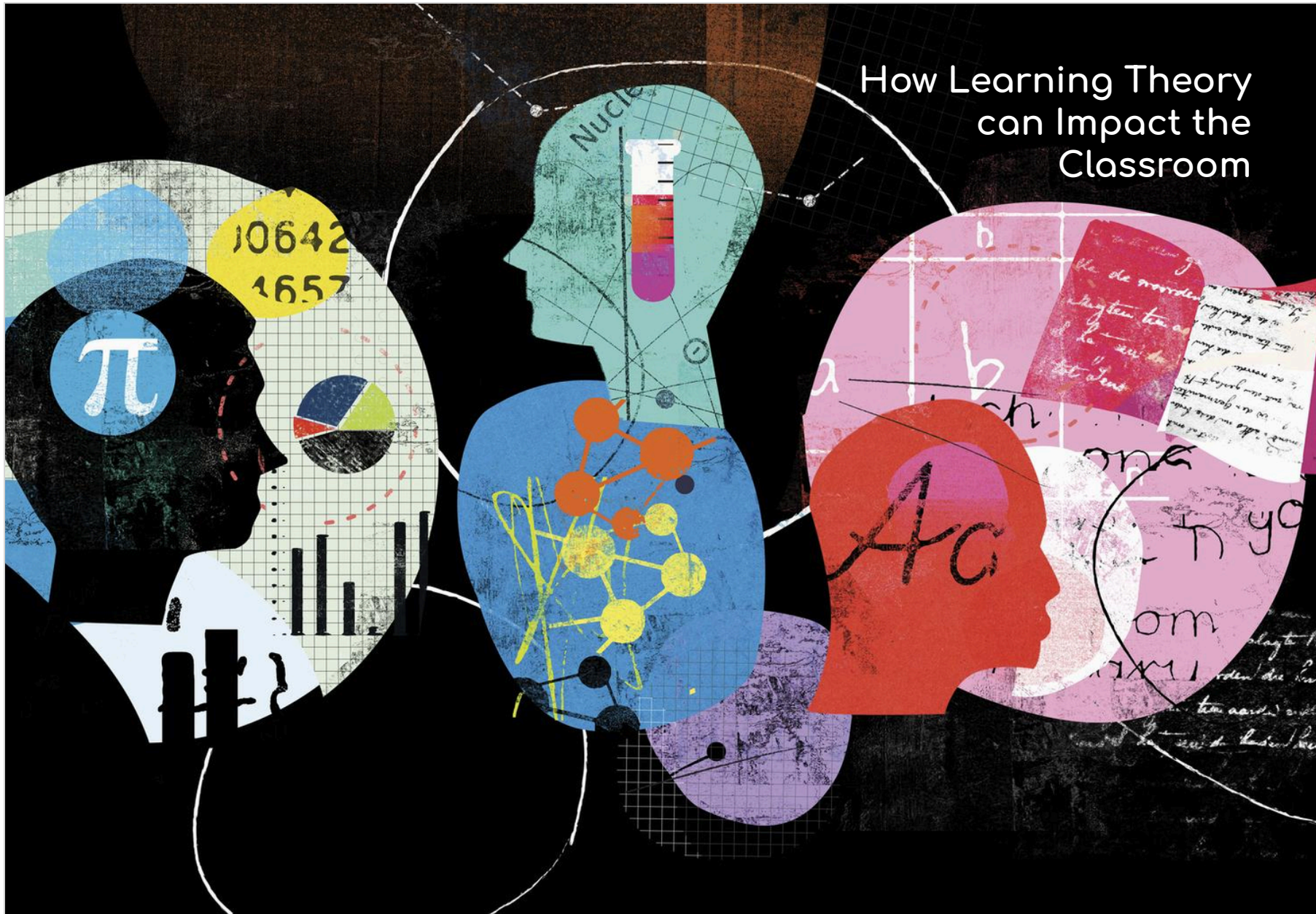
Another even simpler truth is that technology isn't as scary as it seems. It gives out what you put in, so once you crack this – that your own improvement will lead to a better, more impactful form of teaching in your classes. This in turn should result in greater

student enjoyment and achievement. Which makes everyone happy.

Implementing a digital strategy is a bit of a task, and shouldn't be a one person job – which tends to happen in schools. One person may receive extra payment for the role and so it falls to them to implement everything. While this is right and proper in the context of payment, as a project, there should be a team that is responsible for implementing this. This will ensure a greater spread of tasks, greater investment from all staff and greater level of achievement.

Well that's the theory anyway! If this is an area that your school may benefit in, please reach out and start the conversation with me today – your school will thank you for it.

How Learning Theory can Impact the Classroom



How Learning Theory Can Impact the Classroom

In today's post, we're going to look at learning theory and how they can impact your classroom, whether you've been teaching for 1 year or what feels like 100! As this will form a central part of our classroom practice, it's important to get our pedagogy in place and correct, right from the outset. It will make our classroom a little less chaotic if we have planned our environment, expectations and our style of teaching in advance of it happening. This way, pupils know what to expect and what is expected of them, and you know what to expect and what is expected of you.

Learning is a process of acquiring new knowledge, skills, or understanding through experience, study, or instruction. It involves making connections between new information and existing knowledge, and then strengthening those connections through repetition and application. The process of learning can occur through various modalities including visual, auditory, and hands-on experiences. It is also influenced by a variety of factors such as motivation, prior knowledge, and individual learning styles. Effective learning requires active engagement and deliberate practice, as well as constructive feedback to track progress and identify areas for improvement.

Learning is a complex process that involves acquiring new knowledge, skills, or behaviours through experience, study, or instruction. There are different theories and models of learning that provide insights into how learning happens.

One learning theory is the cognitive theory, which suggests that learning occurs through the formation of mental representations or schemas that help individuals organise and make sense of information. According to this theory, individuals engage in active processing of information, and learning happens when new information is integrated into existing knowledge structures or when new knowledge structures are formed.

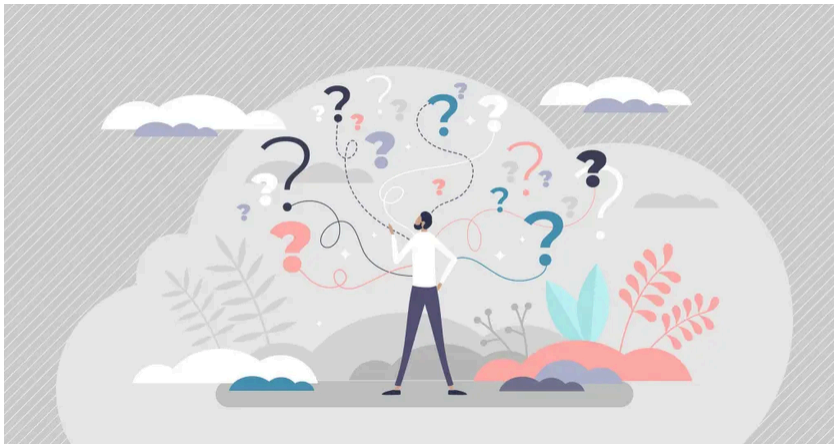
Another learning theory is the behaviourist theory, which emphasises the role of reinforcement and punishment in shaping behavior. According to this theory, learning occurs when a particular behaviour is followed by a consequence, either positive or negative, that strengthens or weakens the likelihood of that behaviour being repeated in the future.

There are also constructivist theories of learning that suggest that individuals actively construct knowledge and understanding through their experiences and interactions with the environment. These theories emphasise the importance of social interaction and collaboration in learning, as individuals learn through engaging in discourse and negotiating meaning

with others.

In this post we will look at each of these models and see how they can benefit us in the classroom and in our use of technology.

What is Cognitive Learning Theory?



Cognitive learning theory explains how people learn by processing and organising information in their minds. It emphasises the importance of mental processes, such as perception, attention, memory, and problem-solving, in learning and behaviour.

At the core of cognitive learning theory is the concept of information processing, which suggests that people actively acquire, interpret, store, and retrieve information from their environment. The theory proposes that learning occurs through the development and modification of mental representations or schemas, which are organised patterns of knowledge and information that guide perception, interpretation, and problem-solving.

According to cognitive learning theory, individuals engage in three types of cognitive processes during learning: input processes, central processes, and output processes. Input processes involve attending to and perceiving information from the environment, while central processes involve mental manipulation of information, such as encoding, organising, and retrieving it from memory. Output processes involve the production of a response or behaviour based on the processed information.

Cognitive learning theory also highlights the importance of feedback and metacognition in learning. Feedback provides

learners with information about the accuracy and effectiveness of their performance, while metacognition refers to the ability to monitor and regulate one's own cognitive processes, such as planning, monitoring, and evaluating one's own learning.

Overall, cognitive learning theory provides a framework for understanding how individuals actively process and organise information to acquire new knowledge, skills, and behaviours. It has practical applications in education and training, as it emphasises the importance of engaging learners in active and meaningful learning activities that promote cognitive processing and problem-solving skills.

What is Behaviourism?



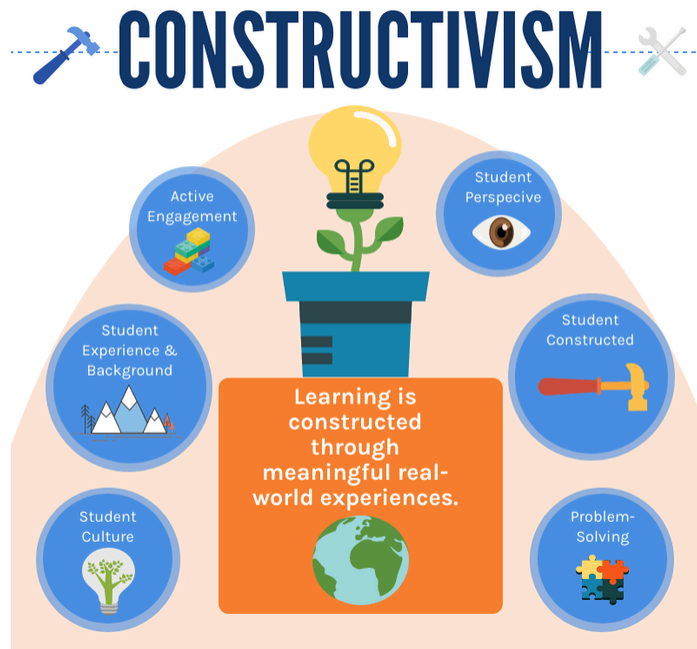
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What is Constructivism?



Constructivism is a psychological and educational theory that emphasises the active role of learners in constructing their own understanding and knowledge through their experiences and interactions with the environment. It suggests that learning is an active and dynamic process of meaning-making, rather than a passive process of receiving information from a teacher or a textbook.

At the core of constructivism is the concept of the learner as an active participant in the learning process, who uses prior knowledge and experiences to construct new understandings and interpretations of the world. It proposes that learners create mental models or schemas to organise their experiences and to make sense of new information, and that these mental models can be revised or expanded over time.

Constructivism also emphasises the importance of social interaction and collaboration in learning. It suggests that learners can benefit from engaging in discourse and negotiation with others, as they share and compare their mental models and co-construct new understandings.

Constructivist learning environments are designed to be learner-centered and to promote active, inquiry-based learning. They often involve hands-on activities, problem-solving, and

opportunities for reflection and metacognition.

Overall, constructivism provides a framework for understanding how individuals actively construct their own knowledge and understanding through their experiences and interactions with the environment. It has been influential in educational practice and has led to the development of constructivist teaching strategies, such as inquiry-based learning, problem-based learning, and collaborative learning.

How Are These Learning Theories Similar?

Cognitive learning theory, behaviourism, and constructivism are three different theoretical perspectives on how learning occurs. While there are some differences between these perspectives, they also share some similarities.

One similarity is that all three perspectives emphasise the importance of previous experience in shaping learning. Cognitive learning theory and constructivism both propose that learners use prior knowledge and experience to construct new understanding and knowledge. Behaviourism suggests that

learning occurs through the formation of associations between environmental stimuli and behavioral responses, which also implies that past experiences play a role in shaping behaviour.

Another similarity is that all three perspectives recognise the role of feedback in the learning process. Cognitive learning theory and constructivism emphasise the importance of feedback in shaping and refining mental models and schemas, while behaviourism proposes that reinforcement and punishment can shape behavior through feedback.

Finally, all three learning theories have been vastly influential in education and have led to the development of teaching strategies and approaches. Cognitive learning theory has influenced instructional design and the development of strategies for enhancing student engagement, attention, and retention. Behaviourism has been influential in the development of behaviour modification techniques, while constructivism has led to the development of inquiry-based and problem-based

learning approaches.

Overall, while cognitive learning theory, behaviourism, and constructivism differ in their theoretical perspectives, they share some common ground in recognising the importance of experience, feedback, and teaching strategies in shaping the learning process.

How do these Learning Theories Differ?

Cognitive learning theory, behaviourism, and constructivism are three different theoretical perspectives on how learning occurs. While they share some similarities, there are also key differences between them.

Cognitive learning theory emphasises the role of mental processes, such as perception, attention, memory, and problem-solving, in learning and behaviour. It proposes that individuals actively acquire, interpret, store, and retrieve information from their environment, and that learning occurs through the development and modification of mental representations or schemas. Cognitive learning theory focuses on the learner's

internal cognitive processes and views learning as an active, constructive, and individual process.

Behaviourism, on the other hand, emphasises the role of the environment and external factors in shaping behaviour. It proposes that behaviour is shaped by the principles of reinforcement, punishment, and conditioning, and that learning occurs through the establishment of associations between environmental stimuli and behavioural responses. Behaviourism focuses on observable behaviour and views learning as a passive, responsive, and automatic process.

Constructivism emphasises the active role of learners in constructing their own understanding and knowledge through their experiences and interactions with the environment. It suggests that learners create mental models or schemas to organise their experiences and to make sense of new information, and that these mental models can be revised or expanded over time.

Constructivism also emphasises the importance of social interaction and collaboration in learning. It focuses on the

learner's active construction of knowledge and views learning as a dynamic, collaborative, and individualised process.

In summary, cognitive learning theory focuses on the learner's internal cognitive processes, behaviourism emphasises the role of the environment in shaping behaviour, and constructivism emphasizes the learner's active construction of knowledge through experiences and social interaction.

How Can We Apply These in the Classroom?

Each learning theory can be applied in different ways in the classroom. Here are some examples:

Cognitive learning theory:

- Use visual aids such as diagrams, images, and videos to help students visualise and organise new information.
- Encourage students to make connections between new information and their existing knowledge and experience.

- Provide opportunities for practice and repetition to help students consolidate their learning and develop automaticity in using new skills.
- Encourage metacognitive reflection by asking students to reflect on their learning process, identify strategies that were effective, and set goals for future learning.

Behaviourism:

- Use positive reinforcement techniques such as praise or rewards to encourage desired behaviour or performance.
- Use negative reinforcement techniques such as removing a negative stimulus (e.g. removing homework) to encourage desired behaviour or performance.
- Use punishment techniques such as giving a detention or taking away a privilege to discourage undesired behaviour or performance.
- Provide clear and specific feedback on performance to help students identify areas for improvement and build on their strengths.
- Constructivism:
- Provide hands-on, inquiry-based learning experiences that allow students to explore and construct their own understanding of new concepts.

- Encourage collaboration and peer-to-peer learning by providing opportunities for group work and discussion.
- Encourage metacognitive reflection by asking students to reflect on their learning process, identify strategies that were effective, and set goals for future learning.
- Allow for flexibility and adaptability in the learning process, allowing students to pursue their own interests and make choices in their learning.

Overall, each learning theory offers a different perspective on how students learn and the different strategies that can be used to support learning. By understanding and applying these theories in the classroom, educators can create more effective and engaging learning experiences for their students.

How Can We Apply These Learning Theories Using Educational Technology?

Educational technology can be used to support and enhance the application of learning theories in the classroom. Here are some examples:

Cognitive learning theory:

- Use multimedia presentations, such as videos or interactive simulations, to help students visualise and organise new information.
- Use educational games or simulations to provide opportunities for practice and repetition in a fun and engaging way.
- Use online discussion forums or collaborative tools to facilitate peer-to-peer learning and metacognitive reflection.
- Use learning analytics tools to track and analyse student progress and provide personalised feedback and support.

Behaviourism:

- Use online quizzes or assessments to provide immediate feedback and reinforce desired behaviours or performance.
- Use learning management systems to monitor and track student behavior and performance, and provide rewards or consequences accordingly.

- Use adaptive learning technologies to adjust the level of difficulty or type of feedback based on student performance.

Constructivism:

- Use online resources and tools to facilitate inquiry-based learning and allow students to construct their own understanding of new concepts.
- Use collaborative tools and online forums to support peer-to-peer learning and group work.
- Use online portfolios or blogs to allow students to document and reflect on their learning process.
- Use virtual reality or augmented reality technologies to provide immersive and interactive learning experiences that allow students to explore and construct their own knowledge.

Overall, educational technology can provide new opportunities to apply learning theories in the classroom and support more personalised and engaging learning experiences for students. By integrating technology tools and resources into the curriculum, educators can enhance the effectiveness of their teaching and support student learning in new and innovative ways.

Final Thoughts

I don't believe there is one correct learning theory. Just looking at the three we have explored in this post, I can see that I tend towards certain models at different times. In my junior classes I will favour a Cognitive model, in order to provide a structured (scaffolded) learning environment in which they receive extra support in their initial learning, but as they acquire greater understanding, ability and competence, I will reduce the amount of support, so to encourage their own learning independence. This also serves to demonstrate what 'good' looks like.

With my senior classes I will favour a Constructivist model. I want them to develop their own understanding and intellectually resolve issues that we face in I.T. in society. By assimilating new knowledge, I want them to make new learning connections and be actively involved in their own learning.

In all of my classes I will use Behaviourism to encourage and emphasise good individual behaviour. As a school, we look to encourage and reward good behaviour – we use Character

Cards to celebrate and reinforce instances where pupils demonstrate positive character traits that will benefit them in school, career and life.

I find these learning theories helpful as they give me a structure to present information to my classes that in many ways, takes the thought process out of how I present information. It makes best use of the stage pupils are at and helps them to progress in a structured and measurable manner. When the pupil experiences difficulty with learning content, the learning theory allows me to step in and provide extra support to ensure pupil understanding and work in a way that is consistent for the pupil.

Want to Read More?

- [5 educational learning theories and how to apply them](#)
- [Five Educational Learning Theories](#)
- [Learning Theories website](#)
- [Overview of Learning Theories](#)



SIX SCAFFOLDING STRATEGIES TO USE WITH YOUR STUDENTS

Six Scaffolding Strategies to Use With Your Students

What's the opposite of scaffolding a lesson? Saying something like this to students: "Read this academic article, write a detailed essay on the topic it explores, and submit it by Wednesday." Think about your pupils' response: there's no real guidance, no set expectations, no safety net, no parachute—they're just left to their own interpretation of the question.

Let's step back from that nightmare scenario and start again. We can start with the agreement that scaffolding a lesson and differentiating instruction are two different things. Scaffolding is when we break up the learning into manageable chunks and providing a tool, method, or structure, with each chunk to access learning. If we were scaffolding reading, for example, we might think about previewing the text and discussing key vocabulary, or chunk the text and then read and discuss as you go. With differentiation, we might give a pupil an entirely different piece of text to read, or shorten the text or alter it, or modify the assignment that accompanies the text.

Simply put, scaffolding strategies are techniques that teachers

use to support student learning and help them develop a deeper understanding of the content. The aim is to provide students with the necessary support and resources to overcome challenges and build the skills they need to succeed. These strategies are flexible and can be adapted to meet the needs of individual students and the demands of specific subject areas.

By using a variety of scaffolding strategies in the classroom, teachers can create a supportive and engaging learning environment that fosters student success and helps build their confidence and independence. Examples of scaffolding strategies can include pre-teaching vocabulary, using visual aids, and Pause, Ask Questions, Pause, Review (PAQPR). These strategies can be used in a variety of ways and in combination with one another to create a comprehensive approach to student learning. Whether used to support struggling students or to challenge advanced learners, scaffolding strategies are a powerful tool for enhancing student engagement and achievement.



Show and Tell

Show and Tell is a scaffolding strategy used in the classroom to support student learning, understanding and development. It works by providing a structure for students to present and share information with their peers, thereby enhancing their confidence and ability to communicate effectively.

You can use the following structure as a method of delivery in the classroom:

- Introduction: The teacher introduces the concept of Show and Tell and explains its purpose.
- Preparation: Students are given time to prepare a short presentation on a topic of their choice. This can involve research, collecting items, or creating visual aids.
- Presentation: Students take turns presenting their Show and Tell to the class. The teacher and classmates listen attentively and ask questions to encourage further discussion.

- Feedback: After each presentation, the teacher provides constructive feedback to the student, highlighting their strengths and offering suggestions for improvement.
- Reflection: Students reflect on their own performance and the feedback they received, and consider how they can apply this to future presentations.

The Show and Tell strategy is a powerful tool for developing speaking and presentation skills, as well as encouraging students to explore new topics and share their knowledge with others. Additionally, it fosters critical thinking, creativity, and a love of learning.

2. Tap into Prior Knowledge

Students come into the classroom with their own experiences and prior knowledge – use it! By helping students to access memories and relate to experiences in a novel, you can encourage and develop their empathy and connection to a topic in their own lives. Sometimes it may be necessary to offer hints or suggestions, leading them to make the connections, but once they get there, they will grasp the content as their own.

Commencing learning in your classroom with the prior knowledge of your students and using this as a framework for future lessons is a technique that many would identify as good teaching, not just a scaffolding technique.

Tapping into prior knowledge is a scaffolding strategy that

leverages students' prior experiences, background knowledge, and understanding to support new learning. The idea is to build upon what students already know to make new information more accessible and meaningful. Here's how it can be implemented in the classroom:

- Assessment: The teacher assesses students' prior knowledge by asking open-ended questions, conducting a pre-assessment, or reviewing prior work.
- Connection: The teacher makes connections between the new information and students' prior knowledge by highlighting similarities, differences, and relationships.

Activation: The teacher activates students' prior knowledge by asking questions, leading discussions, and providing opportunities for students to share their understanding.

Reinforcement: The teacher reinforces students' prior knowledge by using examples, anecdotes, and real-life situations to make the new information more relevant and engaging.

Reflection: The teacher encourages students to reflect on their

prior knowledge and how it relates to the new information, and how they can apply this to future learning.

Tapping into prior knowledge is a highly effective strategy for scaffolding student learning, as it helps students build a deeper understanding of new information and make connections to their own experiences. This approach also helps students retain new information more effectively and fosters a sense of ownership and engagement in the learning process.

3. Give Time to Talk

This year I have begun using think-pair-share with my Year 8 classes and it has really helped to structure their thinking. We can take one part of a concept being taught, give them time to structure their own thoughts, pair with a classmate and discuss the topic, then when it comes to sharing the idea with the class, their contributions are succinct and well structured.

If you aren't weaving in think-pair-share, turn-and-talk, triad teams, or some other structured talking time throughout the

lesson, I would recommend that you should begin including this strategy on a regular basis.

Giving time to talk is a scaffolding strategy that provides students with opportunities to express their thoughts and ideas in a safe and supportive learning environment. The idea is to create a space where students can share their understanding, build on each other's ideas, and practice speaking and listening skills.

Here's how it can be used in the classroom:

- Introduction: The teacher introduces the concept of giving time to talk and explains its purpose, emphasising the importance of active listening and respectful communication.
- Preparation: The teacher prepares a task, activity, or discussion question that requires students to work together and share their thoughts and ideas.
- Opportunity to talk: The teacher provides students with opportunities to talk in small groups, pairs, or as a class. The teacher may facilitate the conversation by asking questions, making connections, or clarifying misunderstandings.
- Active listening: The teacher encourages students to practice active listening by paying attention to each other's

ideas, asking questions, and building on each other's thoughts.

- Feedback: The teacher provides feedback on the quality of the conversation, highlighting areas of strength and offering suggestions for improvement.
- Reflection: The teacher encourages students to reflect on their participation in the conversation, and how they can apply their learning to future discussions.

Giving time to talk is a powerful scaffolding strategy that promotes student engagement, collaboration, and critical thinking. It also helps students develop their communication and interpersonal skills, which are essential for success in school and beyond.

4. Pre-Teach Vocabulary

This is also referred to as front-loading vocabulary. It is a strategy that teachers maybe don't use enough. Many of us, myself included, are guilty of sending students all alone down the bumpy, muddy path known as Challenging Text—a road that is booby-trapped with difficult or unknown vocabulary. We send them ill-prepared and then are often shocked when they lose interest, start conversations with other pupils, make a disinterested noise, or—if you're really not paying attention—fall asleep.

Pre-teaching vocabulary is a scaffolding strategy that involves introducing and defining new words or terms before they are encountered in a lesson or text. The goal is to provide students with the necessary background knowledge and understanding to help them comprehend the content more effectively.

Pre-teaching vocabulary doesn't mean that we put a dozen words from the chapter on the screen and get our students to look up the definitions and write them out—we all know how that will go. Instead, introduce the words to your class in photos or in context with things they know and are interested in. By using analogies and metaphors, we can invite students to create a symbol or drawing for each word. Giving time for small-group and whole-class discussion of the words. Not until they've done all this should the dictionaries come out. And the dictionaries will be used only to compare with those definitions they've already discovered on their own.

With the relevant words front-loaded, students are ready to tackle that challenging text.

Here's how it can work in the classroom:

- **Assessment:** The teacher assesses students' prior knowledge of the vocabulary by conducting a pre-assessment, asking questions, or reviewing previous work.
- **Introduction:** The teacher introduces the new vocabulary by providing definitions, examples, and non-examples. The teacher may also use visuals, graphic organizers, or mnemonic devices to help students understand and remember the words.
- **Practice:** The teacher provides opportunities for students to practice using the new vocabulary, through activities such as word sorts, sentence completion, or word maps.
- **Reinforcement:** The teacher reinforces the use of the new vocabulary by incorporating it into lessons and discussions, and by using it in written assignments and assessments.
- **Reflection:** The teacher encourages students to reflect on their understanding of the vocabulary and how they can apply it to future learning.

Pre-teaching vocabulary is a highly effective scaffolding strategy, as it helps students build a deeper understanding of new concepts and improves their reading comprehension. This approach also helps to reduce frustration and confusion, and enables students to engage with the content more effectively.



5. Use Visual Aids

Graphic organisers, pictures, and charts can all be used as scaffolding tools. Graphic organisers are very specific in that they help pupils to visually represent their ideas, organise information, and grasp concepts such as sequencing and cause and effect.

A graphic organiser shouldn't be main focus, but rather act as a scaffolding tool that helps guide and shape students' thinking. Some students can dive right into discussing, or writing an essay, or synthesising several different hypotheses, without using a graphic organiser of some sort, but many of our students can benefit from using a graphic organiser when faced with a difficult reading or challenging new information. If we think of graphic organisers as training wheels—they're temporary and can be removed as soon as the student learns the processes involved in reaching a proficiency in the task being completed.

Using visual aids is a scaffolding strategy that involves incorporating visuals, such as pictures, diagrams, graphs, videos, and animations, into the classroom to support student learning. The goal is to provide students with a visual representation of the information, making it easier to understand and retain. Here's how it can work in the classroom:

- **Introduction:** The teacher introduces the visual aid and explains its purpose, encouraging students to use it as a resource during the lesson.
- **Explanation:** The teacher uses the visual aid to provide a clear and concise explanation of a concept, process, or idea.
- **Engagement:** The teacher encourages students to engage with the visual aid, asking questions, making connections,

and offering explanations.

- **Reinforcement:** The teacher reinforces the use of the visual aid by incorporating it into lessons and discussions, and by using it in written assignments and assessments.
- **Reflection:** The teacher encourages students to reflect on their understanding of the concept, process, or idea and how they can apply it to future learning.

Using visual aids is a highly effective scaffolding strategy, as it provides students with a visual representation of the information, making it easier to understand and retain. This approach also helps to engage students, foster critical thinking, and promote active learning.

6. Pause, Ask Questions, Pause, Review

This is an effective way to check for understanding while students work with a chunk of difficult text or learn a new concept or content. The questions will need to be designed and structured ahead of time, making sure they're specific to what is being learned, guiding the students to deeper understanding, and open-ended. Great questions can still fail if we don't give students time to think out their responses, so hold out during

that 'Uncomfortable Silence' - it will be worth it. We can keep pupils engaged as active listeners by calling on someone to give the big picture of what was just discussed, discovered, or questioned. If the class as a whole seems stuck on the questions, then you can provide an opportunity for students to discuss in pairs in order to break down the questions and attack it together.



Pause, Ask Questions, Pause, Review (PAQPR) is a scaffolding strategy that involves breaking down a lesson into manageable chunks and pausing at key points to ask questions, encourage reflection, and review learning. The goal is to provide students with opportunities to process and integrate new information, and to build a deeper understanding of the content. Here's how it works:

- **Introduction:** The teacher introduces the concept of PAQPR and explains its purpose, emphasising the importance of active engagement and reflection.
- **Explanation:** The teacher provides a clear and concise explanation of a concept, process, or idea, using examples, visuals, and hands-on activities.
- **Pause:** The teacher pauses at key points in the explanation to ask questions, encourage reflection, and review learning.

- **Ask Questions:** The teacher asks questions that encourage students to think deeply about the content, make connections, and apply their understanding.
- **Pause:** The teacher pauses again to allow students time to process the new information and reflect on their understanding.
- **Review:** The teacher reviews the key concepts and ideas covered in the lesson, highlighting areas of strength and offering suggestions for improvement.

- **Reflection:** The teacher encourages students to reflect on their learning and how they can apply it to future lessons.

PAQPR is a highly effective scaffolding strategy, as it provides students with opportunities to process and integrate new information, and to build a deeper understanding of the content. This approach also helps to engage students, foster critical thinking, and promote active learning.

Final Thoughts

In conclusion, scaffolding strategies are an essential component of effective teaching and learning.

With so many diverse needs in our classrooms (newcomer students, pupils with additional needs, auditory processing differences etc), there is a strong need for teachers to learn and experiment with new scaffolding strategies in order to help their pupils achieve. The phrase “more haste, less speed” can certainly apply here: we will make more progress with a task when we don’t rush it too quickly. Scaffolding a lesson may mean that it takes longer to teach, but the end product is of far greater quality and the experience much more rewarding for all involved.

By providing students with the support and resources they need to succeed, scaffolding strategies help to build student confidence and independence, and foster a deep understanding of the content. Whether used to support struggling students or to challenge advanced learners, scaffolding strategies are a highly effective way to enhance student engagement and achievement. By using a variety of scaffolding strategies, teachers can create a supportive and engaging learning environment that prepares students for success in the classroom and beyond. In the end, scaffolding strategies are an important tool for teachers who want to help their students reach their full potential and succeed in all their academic pursuits.

The image shows a student from behind, wearing a white shirt and a red backpack, interacting with a large, futuristic digital display. The screen is filled with various educational data and applications, including:

- My Hologram:** A section with a checkmark and binary code.
- ASSIGNMENTS:** A list of tasks such as "Project in Science", "Short film making", "Exam in ICT on Thursday", "ICT Presentation on the Social", "Maths short quiz topic", "Narrative report in Math", and "Final Project for MAPS II".
- Areas with Senior High School Department:** A map of the Philippines with labels for various regions like Metro Manila, Cebu, Davao, etc.
- Senior High School Academic Tracks:** A list of tracks including "Accountancy, Business and Management", "Humanities and Social Sciences", "Science, Technology, and Engineering", "General Academic", and "Pre-Baccalaureate".
- My Files: S.Y. 2016-2017:** A grid of file icons.
- IP Addresses:** A list of IP addresses such as 192.168.432.122, 192.168.424.206, etc.
- SEARCH:** A search bar with a magnifying glass icon.
- TM:** A trademark symbol.

The background is a dark blue grid with various icons and data points, creating a high-tech, digital classroom environment.

Rosenshine Principles in a Digital Classroom

Welcome to the 50th post from the [EdTechist](#)! I've been researching and writing for this site for three years (later this month) and it's been a complete blast! I've learned and put out so much, but still feel like I'm only getting started, [technology](#) keeps moving, so watch this space for what is still to come from the EdTechist! In this post we're going to look at the [Rosenshine Principles](#) and how we can apply them in the [digital classroom](#).

This past academic year has witnessed movement in my school – a change in leadership at both principal and vice-principal level has seen new ideas and adjustments to the direction of the school. Everything has been going well so far thankfully, and now steps are being taken to improve upon an already strong staff in the coming academic years.

One of the 'new' ideas that we have seen is the introduction of

the [Rosenshine Principles of Instruction](#). This has come on the wave of a large number of schools in the UK moving towards evidence-based instruction. Not just what works, but how do we know it works and how can we prove it works? To give credit where it is due, The Education Authority has provided access to the [Certificate in Evidence-Informed Practice](#) course from the [Chartered College of Teaching](#), which, while not mentioning [Rosenshine](#) by name, would certainly be in the same arena of thought. Having now done a bit of my own [research](#) into [Rosenshine](#), I can see that his research was trying to identify effective practices looked at the effectiveness of methods and approaches that were practised by the most successful teachers. Something that we can all agree on, that can only be a good thing for us, our [pupils](#), parents and community.

His research was based on the following three sources:

- Research on scaffolds and cognitive supports, such as the use of instructional procedures and models, which enable students to grasp difficult tasks. This works within ICT under the concept of decomposition: breaking a problem into smaller parts to make it more manageable.
- Through direct observation to watch the 'practices of master teachers.' Those effective teachers whose students made the most educational progress as calculated by the attainment tests. These directed on characteristics such as how these teachers taught new information and made

precise links to previous learning, how they monitored and examined the knowledge of their students, how they offered opportunities for practice and rehearsal, and the kinds of support used for scaffolding the knowledge retention and development of understanding.

- Research on Cognitive Science shows how our brains acquire and utilises new knowledge. This offers new insights of how to manage the limitations of students' long-term memory when trying to learn new conceptual ideas.

What are the Rosenshine Principles?

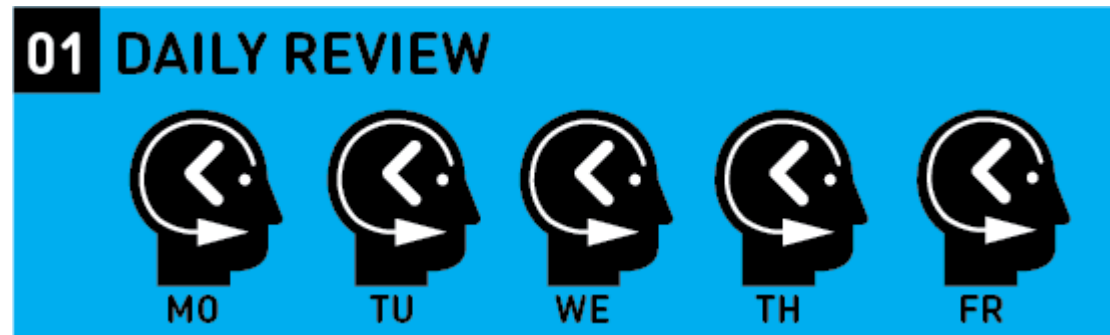
The Rosenshine principles refer to a set of ten instructional principles developed by educational psychologist Barak Rosenshine. These principles are based on research studies that show how teachers can improve student learning and achievement. Here are the ten Rosenshine principles:

- Begin a lesson with a short review of previous learning.
- Present new material in small steps with student practice after each step.
- Ask a large number of questions and check for understanding.
- Provide models and worked examples.
- Guide student practice.
- Check for student understanding with regular feedback.
- Provide opportunities for students to apply what they have learned.
- Require and monitor independent practice.
- Engage students in regular and systematic review of what they have learned.
- Enhance retention and transfer to new situations by integrating new learning into existing knowledge.

By following these principles, teachers can create effective and efficient instruction that helps students learn and retain new knowledge and skills. However, looking at them now in 2023, how do we apply these using digital tools? How do the

Rosenshine Principles work in a digital setting? What tools exist to help us keep building on these effective practices when we are not in the classroom? I hope through the course of this post, you find out.

1. Begin a lesson with a short review of previous learning.



Rosenshine's Principles of Instruction is a set of research-based teaching principles that can improve student learning outcomes. The first of these principles that we will look at is the Daily Review, which refers to the practice of reviewing previously learned material to reinforce knowledge and improve retention.

The Daily Review involves setting aside time each day for students to review material that they have learned in class. This can take various forms, such as reviewing notes, completing

practice exercises, or participating in group discussions.

The purpose of the Daily Review is to help students consolidate their learning and move information from short-term memory to long-term memory. By regularly revisiting previously learned material, students can reinforce their understanding and identify any gaps in their knowledge.

To implement the Daily Review, teachers can allocate time in class for students to review material or assign review tasks as homework. Teachers can also provide guidance on effective review strategies, such as summarising key concepts or creating flashcards.

In a digital classroom, this can be implemented using a blog for reflective writing (for a critical reflection on what has been

previously learned), an online quiz like Kahoot could also be used in the Daily Review for completing practice exercises or answering questions on the last session.

Overall, the Daily Review is a powerful tool for enhancing student learning and should be incorporated into teaching practices wherever possible.

2. Presenting New Material in Small Steps



Presenting new material in small steps is one of the key principles of Rosenshine's Principles of Instruction. This principle emphasises the importance of breaking down complex

information into smaller, more manageable chunks to enhance learning.

To implement this principle, teachers should first determine the key concepts or skills that they want students to learn. They should then divide the material into small, sequential steps that build upon one another. In Constructivism this is called chaining, but is essentially the same practice. Where it differs is that in Constructivism, there will be an emphasis on attaining a level of mastery over the learning content and being able to display this mastery.

When presenting new material, teachers should introduce one step at a time and provide clear explanations and examples to help students understand each step. They should also provide opportunities for students to practice each step before moving on to the next one. This is achieved very easily in using video content to teach, or review.

By breaking down new material into smaller steps, students are better able to process and understand the information. This

approach also helps to prevent cognitive overload, where students become overwhelmed by too much information at once.

In addition, presenting new material in small steps allows teachers to assess student understanding and adjust their teaching accordingly. If students are struggling with a particular step, teachers can provide additional support or revisit earlier steps to reinforce learning. This works particularly well with video content – if a student is struggling with a particular step or concept, then video content allows them to review the material at their own speed and work at the step in question until they have achieved understanding.

Overall, presenting new material in small steps is an effective teaching strategy that can enhance student learning and understanding.

3. Asking Questions



Asking questions is third key principle of the Rosenshine Principles of Instruction. This principle emphasises the importance of asking questions to check for student understanding and promote active engagement in the learning process.

When asking questions, teachers should aim to ask open-ended questions that require students to think critically and provide thoughtful responses. Questions should be tailored to the level of the students and should be designed to challenge and extend their thinking.

There are several benefits to asking questions in the classroom. First, it encourages students to actively engage in the learning process and take ownership of their learning. It also allows teachers to assess student understanding and identify any areas where additional support may be needed.

In addition, asking questions can help to reinforce learning and promote the transfer of knowledge to new situations. When

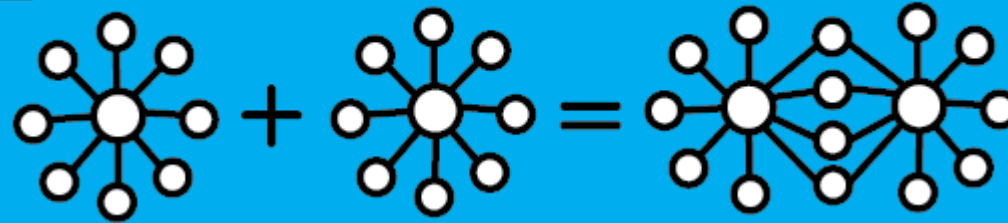
students are asked to apply what they have learned to new contexts, they are better able to develop a deep understanding of the material.

To implement this principle, teachers should incorporate questioning into their teaching practices on a regular basis. They should also provide opportunities for students to ask questions and engage in discussion, which can help to promote a collaborative learning environment. In a digital setting, this could be implemented using a quiz on an LMS platform like Moodle or Canvas. The crucial part here would be to be able to identify the specific areas that a student is demonstrating difficulty in understanding, so that further work in that area could be planned.

Overall, asking questions is a powerful teaching strategy that can enhance student learning and promote active engagement in the classroom.

4. Presenting Models

04 PROVIDE MODELS



Presenting models is the next of the principles of the Rosenshine Principles of Instruction. This principle emphasises the importance of providing students with clear and structured models that illustrate how to approach complex tasks or problems.

When presenting models, teachers should first identify the key features or steps involved in the task or problem. They should then provide a clear and structured example that demonstrates how to approach the task or problem using these features or steps.

Models can take various forms, such as visual representations, written examples, or demonstrations. The key is to provide students with a clear and structured model that they can use as a guide when working on similar tasks or problems.

There are several benefits to presenting models in the classroom. First, it provides students with a clear understanding of what is expected of them and how to approach the task or problem. This can help to reduce anxiety and promote a sense of confidence in their abilities.

In addition, presenting models can help to promote deeper understanding and transfer of knowledge. When students are able to see how a concept or skill can be applied in different contexts, they are better able to develop a deep understanding of the material and apply it to new situations.

To implement this principle, teachers should incorporate models into their teaching practices on a regular basis. They should also provide opportunities for students to create their own models or modify existing models, which can help to promote deeper understanding and ownership of the learning process. For many teachers, presenting models works very well within specific subject areas:

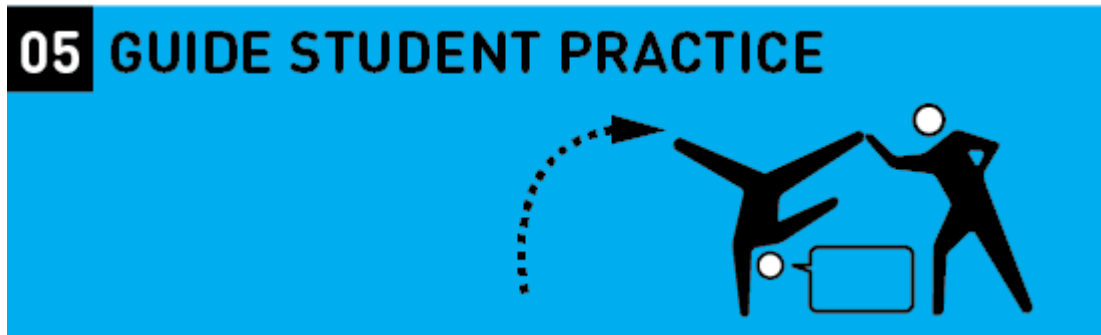
- Maths: any formula/equation/problem that involves multiple steps. Presenting and explaining each step will help students understand the entire process.
- ICT/Digital Technology: I use this in every lesson. From Spreadsheet formulas, Database queries, to Python programming, I can take students step-by-step through the

procedure and explain what is needed at each step and show them where each element can be located.

- Music: instructing pupils on a piece of music can be presented a section at a time. Building this up gradually will strengthen a pupils ability to play the entire piece of music.
- Design & Technology: this works for a health and safety aspect also, but by demonstrating each step of a project, pupils can see what they need to do, plan the action and follow through safely, while following the steps as presented by the teacher.

Overall, presenting models is a powerful teaching strategy that can enhance student learning and promote deeper understanding of complex tasks or problems.

5. Guided Student Practice



Guided student practice is the next of the key principles of the Rosenshine Principles of Instruction. This principle emphasises the importance of providing students with guided practice opportunities to reinforce learning and develop skills.

When providing guided practice, teachers should first model the desired behaviour or skill, breaking it down into small, manageable steps. They should then provide opportunities for students to practice the skill, providing feedback and guidance as needed.

Guided practice should be structured and scaffolded to gradually increase in complexity and challenge. This allows students to build upon their existing knowledge and skills, and to develop a sense of mastery and confidence.

There are several benefits to guided student practice in the classroom. First, it provides students with structured opportunities to practice and reinforce their learning. This can help to enhance retention and promote deeper understanding of the material.

In addition, guided practice can help to build student confidence and motivation. When students are able to successfully complete guided practice tasks, they are more likely to feel a sense of accomplishment and motivation to continue learning. When students can see what the final destination looks like, they can see the steps involved and know how to get from start to finish, then learning can be managed successfully.

To implement this principle, teachers should incorporate guided practice opportunities into their teaching practices on a regular basis. They should also provide opportunities for students to work collaboratively and receive feedback from their peers, which can help to promote a sense of community and shared learning. Working on tasks using Google Docs, Office 365 can all incorporate collaborative group skills.

Overall, guided student practice is a powerful teaching strategy that can enhance student learning and promote the development of key skills and knowledge.

6. Checks for Student Understanding

06 CHECK STUDENT UNDERSTANDING



Checks for student understanding is the next of the key principles of Rosenshine's Principles of Instruction. This principle emphasises the importance of regularly checking for student understanding to assess learning progress and adjust instruction accordingly.

When checking for student understanding, teachers should use a variety of strategies to assess learning progress. This can include asking questions, administering quizzes or tests, providing opportunities for self-reflection and self-assessment, and using formative assessment techniques.

Checks for student understanding should be ongoing and

integrated into the learning process. This allows teachers to adjust their instruction in real-time to meet the needs of their students and to ensure that all students are able to achieve their learning goals.

There are several benefits to checks for student understanding in the classroom. First, it allows teachers to assess student learning progress and identify any areas where additional support may be needed. This can help to promote a sense of accountability and responsibility among students and can motivate them to work harder to achieve their learning goals.

In addition, checks for student understanding can help to promote a deeper understanding of the material. When students are provided with regular opportunities to reflect on their learning and assess their progress, they are better able to identify areas of strength and weakness and to develop strategies for improvement.

To implement this principle, teachers should incorporate checks for student understanding into their teaching

practices on a regular basis. They should also provide opportunities for students to reflect on their learning and to receive feedback from their peers, which can help to promote a sense of community and shared learning.

Overall, checks for student understanding is a powerful teaching strategy that can enhance student learning and promote the development of key skills and knowledge.

7. Achieving an Elevated Success Rate



Achieving an elevated success rate is the next of the key principles of Rosenshine's Principles of Instruction. This principle emphasises the importance of providing students with frequent opportunities for success and minimising the likelihood of failure.

When striving to achieve an elevated success rate, teachers should provide students with tasks that are challenging but achievable, ensuring that students have the necessary background knowledge and skills to succeed. They should also provide clear instructions and feedback, and adjust their

instruction as needed to ensure that all students are able to achieve success.

In addition, teachers should provide opportunities for students to practice and reinforce their learning in a supportive and positive environment. This can include incorporating peer collaboration and feedback, providing opportunities for self-reflection and self-assessment, and celebrating student successes.

There are several benefits to achieving an elevated success rate in the classroom. First, it helps to promote student motivation and engagement. When students feel that they are capable of achieving success, they are more likely to be motivated to work harder and to engage more deeply with the material.

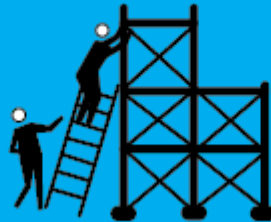
In addition, achieving an elevated success rate can help to promote deeper learning and transfer of knowledge. When students are able to successfully apply their learning to new situations and tasks, they are better able to develop a deep understanding of the material and to transfer their knowledge to real-world settings.

To implement this principle, teachers should focus on creating a positive and supportive learning environment that emphasises student success. They should also provide opportunities for students to receive feedback and support, and adjust their instruction as needed to ensure that all students are able to achieve success.

Overall, achieving an elevated success rate is a powerful teaching strategy that can enhance student learning and promote the development of key skills and knowledge.

8. Providing Scaffolds for Difficult Lessons

08 SCAFFOLDS FOR DIFFICULT TASKS



Providing scaffolds for difficult lessons is the next of the key principles of Rosenshine's Principles of Instruction, that we will look at. This principle emphasises the importance of providing students with support and guidance to help them successfully navigate complex or challenging material.

When providing scaffolds for difficult lessons, teachers should use a variety of strategies to help students build upon their existing knowledge and skills. This can include breaking down complex tasks into smaller, more manageable steps, providing visual aids and graphic organisers, and offering opportunities for collaboration and peer support.

In addition, teachers should provide opportunities for guided practice and feedback, allowing students to build their skills and confidence in a supportive and structured environment.

There are several benefits to providing scaffolds for difficult lessons in the classroom. First, it helps to promote student confidence and motivation. When students are provided with support and guidance, they are more likely to feel capable of successfully completing challenging tasks.

In addition, providing scaffolds for difficult lessons can help to promote deeper learning and understanding of the material. When students are able to successfully navigate complex tasks, they are better able to develop a deep understanding of the material and to apply their learning to new situations and tasks.

To implement this principle, teachers should focus on creating a supportive and structured learning environment that emphasises student success. They should also provide

opportunities for collaboration and peer support, and adjust their instruction as needed to ensure that all students are able to successfully navigate complex material.

Overall, providing scaffolds for difficult lessons is a powerful teaching strategy that can enhance student learning and promote the development of key skills and knowledge.

9. Independent Practice



Independent practice is the penultimate key principle of the Rosenshine Principles of Instruction, that we are looking at. This principle emphasises the importance of providing students with opportunities to practice and apply their learning independently.

When implementing independent practice, teachers should

provide students with clear instructions and expectations, as well as any necessary materials or resources. They should also provide opportunities for students to receive feedback and support as they work independently.

In addition, teachers should provide opportunities for students to reflect on their learning and to self-assess their progress. This can include opportunities for self-reflection and self-evaluation, as well as opportunities for peer collaboration and feedback. There are several benefits to providing independent practice in the classroom. First, it helps to promote student mastery of key skills and knowledge. When students are given opportunities to practice and apply their learning independently, they are better able to develop a deep understanding of the material and to transfer their knowledge to new situations and tasks.

In addition, independent practice can help to promote student motivation and engagement. When students are given opportunities to work independently, they are more likely to

take ownership of their learning and to be motivated to work hard and to succeed.

To implement this principle, teachers should focus on creating a supportive and structured learning environment that emphasizes student autonomy and success. They should provide opportunities for students to work independently, while also providing support and feedback as needed. They should also encourage students to reflect on their learning and to set goals for future growth and improvement.

Overall, independent practice is a powerful teaching strategy that can enhance student learning and promote the development of key skills and knowledge.

10. Weekly & Monthly Review



Weekly and monthly reviews are the last principle we are to look at and this is a key component of the Rosenshine Principles of Instruction. This principle emphasises the importance of reviewing and consolidating learning on a regular basis to promote deeper understanding and retention of information.

Weekly and monthly reviews involve revisiting previously learned material on a regular basis to reinforce key concepts and promote long-term retention. During these reviews, teachers may use a variety of strategies to help students consolidate their learning, including quizzes, games, and other interactive activities.

In addition, teachers may use weekly and monthly reviews as an opportunity to identify areas where students may be struggling and to adjust their instruction as needed to address these challenges. For example, if a particular concept or skill is consistently difficult for students, the teacher may adjust their instruction to provide additional support and guidance in this area.

There are several benefits to implementing weekly and monthly

reviews in the classroom. First, regular reviews help to promote long-term retention of key concepts and skills. By revisiting previously learned material on a regular basis, students are better able to consolidate their learning and to retain key information over time.

In addition, weekly and monthly reviews can help to promote student motivation and engagement by providing opportunities for students to see their progress and to celebrate their successes.

To implement this principle, teachers should focus on creating a structured and supportive learning environment that emphasises the importance of regular review and consolidation of learning. They should provide opportunities for interactive and engaging review activities, and adjust their instruction as needed to address areas where students may be struggling.

Overall, weekly and monthly reviews are a powerful teaching strategy that can help to promote deep learning, long-term retention of information, and student engagement and motivation.

Final Thoughts

The Rosenshine principles strengthens and creates a consistency in your ability to ensure pupil learning in the classroom. When viewed over an academic year, the performance of your classes will increase and develop in their ability so much.

When we embed this within our use of technology, there are new heights to which we can reach. [YouTube](#), [Kahoot!](#), [Mentimeter](#), [OneNote](#) and [Office 365](#) can all be used with the Rosenshine principles to ensure and enhance pupil learning in new and engaging ways for pupils with a little technological imagination.

In a digital classroom, the Rosenshine principles can be applied by providing clear instructions, breaking down new material into small steps, using modeling and guided practice, asking questions, providing feedback, and providing independent practice opportunities. It is important to use technology

effectively to support learning and engagement, such as through interactive digital tools, multimedia resources, and online discussions. Teachers should also schedule regular reviews to reinforce learning and adjust instruction as needed. Additionally, it is important to provide scaffolding and support for difficult lessons and to check for student understanding regularly. By following these principles, a digital classroom can effectively support student learning and success.

To implement these principles, teachers should use a variety of instructional strategies and technology tools to create engaging and interactive learning experiences for students. They should also establish clear expectations and guidelines for online learning, and provide regular opportunities for feedback and support. By applying the Rosenshine principles, teachers can create a structured and supportive learning environment that promotes student success and achievement.

Using Technology to Promote Metacognition



Using Technology to Promote Metacognition

Metacognition refers to the ability to think about and understand our own thinking processes. It involves reflecting on our own cognitive processes, such as memory, attention, and problem-solving, and understanding how they work and how to control them. Metacognition can also involve monitoring and evaluating our own learning and performance, such as setting goals, assessing progress, and making necessary or relevant adjustments to our learning strategies.

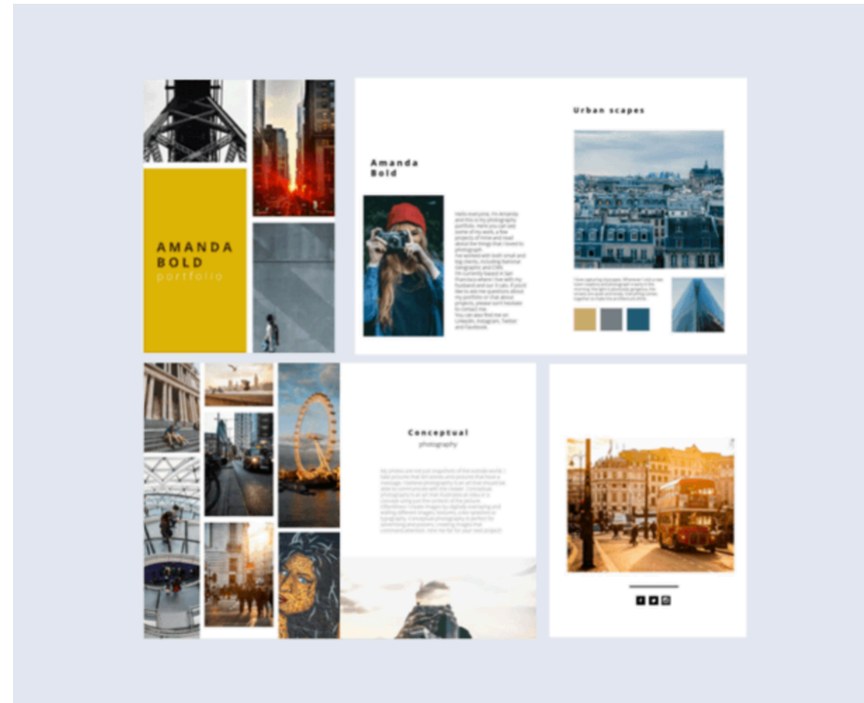
In essence, metacognition is thinking about thinking – it involves being aware of and actively managing our own cognitive processes in order to optimise learning and performance. Metacognitive strategies can be taught and practiced, and are often used in educational settings to help students become more effective learners.

How can we use Metacognition in a Digital Setting?

In this post, we are going to look at five ways that we can enforce the principles of metacognition in a digital setting. There are other ways of course, but in this post we're going to focus on these five and how they can help students to learn how to think about what they are doing but also emphasise a digital setting in

which they can see their development over time (as with a digital portfolio); create, monitor and adjust targets (as with a LMS); or the simple act of writing reflectively. Done properly, this task can create greater...?

Digital Portfolio



One way to encourage metacognitive thinking is to have students create digital portfolios that showcase their learning and progress over time. By reflecting on their work and choosing which pieces to include, students can gain a better

understanding of their own strengths and weaknesses, and can set goals for future learning. Digital portfolios can be created using a variety of tools, such as Google Sites, Seesaw, or Adobe Spark.

Digital portfolios can promote metacognition in several ways:

Reflection: Digital portfolios can provide students with a space to reflect on their own learning and thinking processes. By documenting their work and reflecting on their progress over time, students can develop a better understanding of their own strengths and weaknesses, as well as set goals for future learning.

Self-assessment: Digital portfolios can also provide students with opportunities to self-assess their own work. By evaluating their own performance and comparing it to established criteria or standards, students can identify areas where they need to improve, as well as develop a better understanding of their own learning style and preferences.

Goal setting: Digital portfolios can also help students set and track their own learning goals. By creating and updating goals

within their portfolio, students can take ownership of their own learning, monitor their progress towards specific objectives, and reflect on their achievements.

Feedback: Digital portfolios can facilitate feedback and communication between students and teachers. Teachers can provide feedback on students' work within the portfolio, and students can respond to that feedback by revising their work, setting new goals, or reflecting on their own learning processes.

Overall, digital portfolios can support metacognitive thinking by providing students with a space to reflect on their own learning, self-assess their own work, set and track learning goals, and receive feedback from teachers and peers. By leveraging digital tools and platforms to support metacognition, educators can help students become more self-directed, engaged, and reflective learners.

Self-Assessment Tools



Technology can also be used to provide students with self-assessment tools that help them reflect on their own learning. For example, students can use online quizzes or surveys to evaluate their understanding of a particular topic, or they can use tools like Flipgrid or VoiceThread to record reflections on their own learning process.

Self-assessment tools can promote metacognition in several ways:

Reflection: Self-assessment tools can provide students with a structured way to reflect on their own learning and thinking

processes. By asking students to evaluate their own work and provide evidence to support their judgments, self-assessment tools encourage students to think critically about their own performance and understand their own strengths and weaknesses.

Goal setting: Self-assessment tools can also help students set and monitor their own learning goals. By providing students with a way to track their progress towards specific objectives and reflect on their achievements, self-assessment tools help students take ownership of their own learning and develop a sense of agency over their own academic outcomes.

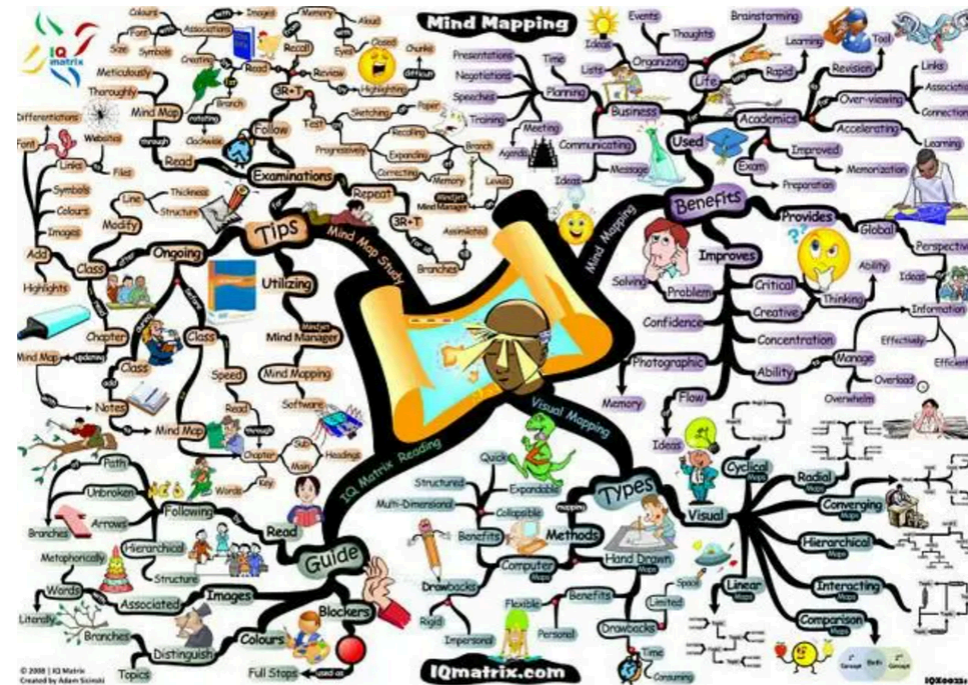
Feedback: Self-assessment tools can facilitate feedback and communication between students and teachers. By allowing students to share their self-assessments with teachers, teachers can provide feedback on students' work and help students identify areas where they need to improve.

Metacognitive awareness: By engaging in the process of self-assessment, students develop a better understanding of their own learning processes and become more metacognitively aware. This means they are better equipped to monitor and regulate their own learning, set goals, and adjust their strategies

when necessary.

Overall, self-assessment tools can support metacognitive thinking by providing students with a structured way to reflect on their own learning, set and monitor learning goals, receive feedback from teachers, and develop a deeper understanding of their own learning processes. By incorporating self-assessment tools into their instructional practices, educators can help students become more self-directed, engaged, and reflective learners.

Mind-Mapping Tools



Mind-mapping tools like MindMeister or Lucidchart can help students visualise their own thinking processes and make connections between different concepts. By creating visual maps of their own knowledge, students can better understand how different ideas are related and can identify areas where they need to deepen their understanding.

Mind-mapping tools can promote metacognition in several ways:

Brainstorming and organising ideas: Mind-mapping tools can

help students brainstorm and organise their ideas visually. By creating a visual representation of their ideas, students can gain a better understanding of the connections between different concepts and topics.

Identifying gaps in knowledge: As students create mind maps, they may realise that there are gaps in their knowledge or areas where they need to conduct further research. This process of identifying gaps in knowledge can help students become more metacognitively aware and take ownership of their own learning.

Developing critical thinking skills: Mind-mapping tools can also help students develop critical thinking skills. By analysing and synthesizing information, students can develop a deeper understanding of complex topics and make connections between different concepts.

Self-reflection: Mind-mapping tools can also be used for self-reflection. By creating a mind map of their own learning processes, students can reflect on how they learn best, what strategies work for them, and where they may

need to make adjustments.

Overall, mind-mapping tools can support metacognitive thinking by helping students brainstorm and organise their ideas, identify gaps in their knowledge, develop critical thinking skills, and engage in self-reflection. By incorporating mind-mapping tools into their instructional practices, educators can help students become more self-directed, engaged, and reflective learners.

Learning Management Systems



Many schools use learning management systems (LMS) like Canvas or Blackboard to organise course materials and facilitate communication between teachers and students. LMS can also be used to support metacognitive thinking by providing students with tools for tracking their own progress and setting goals for future learning.

Learning Management Systems (LMS) can promote metacognition in several ways:

Personalised learning: LMS platforms can provide personalised learning experiences for students by allowing them to choose their own learning paths and set their own learning goals. This can help students become more metacognitively aware by encouraging them to reflect on their own learning styles, strengths, and weaknesses.

Data analysis: LMS platforms can provide teachers with data analytics that show how individual students are progressing in their learning. This information can help teachers identify areas where students need extra support and provide personalised feedback that helps students develop metacognitive skills.

Self-reflection: LMS platforms can also encourage self-reflection by providing students with tools that allow them to reflect on their own learning processes. For example, students can use LMS platforms to create learning journals or blogs where they document their learning experiences and reflect on what they have learned.

Collaboration: LMS platforms can also promote metacognition

through collaboration. By working together on group projects and sharing feedback, students can develop a deeper understanding of their own thinking processes and learn from the perspectives of their peers.

Overall, LMS platforms can support metacognitive thinking by providing personalised learning experiences, data analytics that help teachers identify areas where students need extra support, tools for self-reflection, and opportunities for collaboration. By incorporating LMS platforms into their instructional practices, teachers can help students become more self-directed, engaged, and reflective learners.

Reflective Writing Tools



Technology can be used to support reflective writing, which is an important component of metacognitive thinking. Tools like Penzu or Diaro allow students to keep digital journals where they can reflect on their own learning process and document their own growth over time.

Reflective writing tools can promote metacognition in several ways:

Self-reflection: Reflective writing tools provide students with a platform to reflect on their own learning processes, thinking

patterns, and emotions. By reflecting on their own learning experiences, students become more metacognitively aware of their own thinking processes, and develop strategies to improve their learning.

Goal-setting: Reflective writing tools can help students set and achieve their own learning goals. By reflecting on their learning experiences, students can identify areas where they need to improve and set realistic goals that align with their learning needs.

Feedback: Reflective writing tools provide students with feedback on their own learning processes, which helps them develop metacognitive skills. By analysing feedback from teachers or peers, students can learn to evaluate their own thinking processes and improve their own learning strategies.

Critical thinking: Reflective writing tools can also help students develop critical thinking skills. By analysing their own experiences and reflecting on their own thinking processes, students learn to question assumptions, analyse information,

and draw conclusions based on evidence.

Overall, reflective writing tools can support metacognitive thinking by providing students with a platform to reflect on their own learning processes, set and achieve their own learning goals, receive feedback, and develop critical thinking skills. By incorporating reflective writing tools into their instructional practices, educators can help students become more self-directed, engaged, and reflective learners.

Final Thoughts

In conclusion, technology offers a wealth of opportunities to support and promote metacognitive thinking in students. By leveraging digital tools and platforms, educators can help students develop a better understanding of their own thinking processes, monitor their own learning progress, and set goals for future learning. Digital portfolios, self-assessment tools, mind-mapping tools, learning management systems, and reflective writing tools are just a few examples of the many ways in which technology can be used to support metacognition.

However, it's important to remember that technology should never be seen as a replacement for good teaching practices or human interaction. Ultimately, it's the skillful use of technology in conjunction with effective pedagogy that can lead to the most meaningful learning experiences for students. By combining the power of technology with thoughtful instructional design and supportive teacher-student relationships, we can help students become more self-directed, engaged, and reflective learners.

The Benefits of Technology in the Classroom



The Benefit of Technology in the Classroom

If life teaches us anything, it's that the one constant is change. No matter how hard we try, parts of our life are always subject to change. Some are planned, some are not, but all happen regardless of our opinion on them or happiness about them. Technology is no different.

In this post I'm going to look at the benefits of technology in the classroom. I have looked at this general topic before ([here](#)), but the benefits I will reflect upon in today's post will be different to

what I discussed previously. There are many benefits to using technology in the classroom and are a force for change in our classroom. A force for enhancing our pupil achievement, improving pupil understanding and ensuring a high quality educational experience inside and outside of the classroom. Not every benefit will apply to every teacher in every setting. So I hope you get something from today's post. Enjoy!

How does technology provide a more engaged learning environment?

The first benefit of technology we can look at is that it can provide a more engaged learning environment in several ways. Here are some examples:

creation and delivery of interactive and multimedia content, such as videos, simulations, animations, and games, which can make learning more engaging and enjoyable.

Interactive and Multimedia Content: Technology enables the



These interactive and multimedia resources can help students grasp complex concepts, visualise abstract ideas, and reinforce their learning through hands-on experiences.

- Personalised Learning Experiences: Educational technology can provide personalised learning experiences tailored to individual students' needs, interests, and learning styles. Adaptive learning platforms and intelligent tutoring systems can dynamically adjust the pace, level of

difficulty, and content of the learning materials based on individual students' performance, feedback, and preferences. This personalised approach can boost student engagement by providing relevant and challenging learning experiences that cater to their unique needs.

Collaborative Learning Opportunities: Technology can facilitate collaborative learning opportunities, allowing students to work together, communicate, and engage in group activities regardless of their physical location. Online discussion forums, collaborative document editing tools, virtual classrooms, and video conferencing platforms can foster collaboration, creativity, and critical thinking skills among students, promoting a more engaged and interactive learning environment.

Gamified Learning Experiences: Educational technology can incorporate gamification elements, such as points, badges, leaderboards, and rewards, into the learning process to make it more game-like and engaging. Gamified learning experiences can motivate students to actively participate, compete, and achieve goals, creating a sense of accomplishment and fun in the learning process.

Real-World Applications: Technology can facilitate real-world applications of learning, allowing students to connect their classroom knowledge with real-life situations. For example, virtual labs, simulations, and case studies can provide

opportunities for students to apply their learning in authentic contexts, which can enhance their engagement, relevance, and understanding of the subject matter.

Instant Feedback and Assessment: Educational technology can provide instant feedback and assessment, allowing students to receive timely and constructive feedback on their performance. This immediate feedback loop can help students track their progress, identify areas for improvement, and take corrective actions, which can boost their motivation and engagement in the learning process.

Flexibility and Access to Resources: Technology provides flexibility in terms of accessing learning resources and materials anytime, anywhere. Online learning platforms, digital libraries, and educational websites allow students to access a wide range of resources, such as e-books, articles, videos, and interactive simulations, which can support self-directed learning and exploration, fostering a more engaged learning environment.

Educational technology can provide a more engaged learning environment by offering interactive and multimedia content, personalised learning experiences, collaborative learning opportunities, gamified learning experiences, real-world applications, instant feedback and assessment, as well as

flexibility and access to resources. When used strategically and effectively, educational technology can enhance student engagement, motivation, and learning outcomes, ultimately leading to a more effective and enjoyable learning experience.

How does technology prepare students for the future?



The second benefit of technology I will consider is that it plays a crucial role in preparing students for the future in several ways:

Digital Literacy: In today's digital world, digital literacy has become an essential skill for the future workforce. Educational technology helps students develop digital literacy skills, including the ability to use digital tools, navigate online resources, critically evaluate information, and communicate effectively in digital formats. These skills are essential for students to thrive in the modern workforce, where technology is ubiquitous, and digital fluency is a must.

Critical Thinking and Problem Solving: Technology provides opportunities for students to develop critical thinking and problem-solving skills. Through engaging with technology-based learning resources, students can learn how to analyse, evaluate, and synthesise information from multiple sources, think critically, and apply their knowledge to solve real-world problems. These skills are highly valued in the job market, as they enable students to adapt to new challenges, innovate, and find creative solutions to complex issues.

Collaboration and Communication: Technology facilitates collaboration and communication, which are critical skills for the 21st century workforce. Educational technology allows students to work collaboratively on group projects, communicate with peers and teachers using various digital tools, and engage in online discussions and virtual classrooms. These collaborative experiences prepare students for future work environments where teamwork, communication, and collaboration are essential for success.

Adaptability and Flexibility: Technology is constantly evolving, and students who are exposed to educational technology develop adaptability and flexibility skills. They learn to navigate and adapt to new technologies, platforms, and tools, which are essential in a rapidly changing job market. Technology also enables remote and online learning, which provides students with the flexibility to learn at their own pace, anytime and anywhere, preparing them for the future of remote work and online collaboration.

Global Awareness and Cultural Competence: Educational technology can expose students to diverse perspectives and cultures from around the world. Through online resources, virtual exchange programs, and collaborative projects with peers from different countries, students can develop global awareness and cultural competence. These skills are becoming increasingly important as the world becomes more interconnected, and global collaboration and understanding are valued in the workplace.

Career Exploration and Readiness: Educational technology can provide students with opportunities to explore different career paths, gain insights into various industries, and develop skills relevant to their future careers. Online job portals, career assessment tools, virtual internships, and industry-specific simulations can help students explore their interests, passions, and strengths, and make informed decisions about their career choices. This prepares them for the future world of work, where adaptability and continuous learning are crucial.

Educational technology plays a vital role in preparing students for the future by developing digital literacy, critical thinking, problem-solving, collaboration, communication, adaptability, global awareness, cultural competence, and career exploration skills. These skills are increasing in their importance for students to succeed in a rapidly changing and increasingly technology-driven world, and educational technology provides them with the necessary tools and resources to thrive in the future workforce.

How does technology prepare students for the future?



The third benefit of technology we can see in the classroom is that it has the potential to connect better with students in various ways:

Personalised Learning: Educational technology can provide personalised learning experiences tailored to the individual needs and preferences of students. Adaptive learning platforms, intelligent tutoring systems, and personalised learning apps can adjust the pace, content, and style of instruction to match the learning style, skill level, and interests of students. This customisation can enhance student engagement and motivation, as it allows them to learn at their own pace and according to their unique learning needs.

Interactive and Multimodal Content: Technology can provide interactive and multimodal content, such as videos, simulations, games, virtual reality (VR), and augmented reality (AR) experiences, that can engage students in active learning. These interactive and multimodal experiences can stimulate students'

curiosity, imagination, and creativity, and make learning more fun and engaging. They can also accommodate different learning styles and preferences, as students can choose the format that resonates with them the most.

Real-World Connections: Technology can facilitate real-world connections by bringing authentic, real-life experiences into the classroom. Virtual field trips, online collaborations with experts, video conferences with guest speakers, and real-time data analysis are some examples of how technology can connect students with real-world contexts and applications of their learning. This can make learning more relevant, meaningful, and impactful, as students can see the direct application of their learning to real-world situations.

Collaborative Learning: Technology can foster collaborative learning, allowing students to work together on group projects, engage in discussions, and share ideas and resources. Online discussion forums, collaborative document editing tools, and virtual classrooms are examples of how technology can facilitate collaborative learning. Collaborative learning can promote active engagement, peer-to-peer learning, and social interaction among students, which can enhance their learning experience and deepen their understanding of the subject matter.

Immediate Feedback: Technology can provide immediate feedback to students, allowing them to monitor their progress, identify areas of improvement, and take corrective actions. Automated feedback, self-assessment quizzes, and adaptive

assessments are examples of how technology can provide timely feedback to students. Immediate feedback can help students track their learning, stay motivated, and make adjustments to their learning strategies, leading to better learning outcomes.

Accessibility and Inclusivity: Technology can provide accessibility and inclusivity features that cater to diverse learners, including students with disabilities, English language learners (ELLs), and students with different learning styles. Closed captioning, text-to-speech, screen readers, and adjustable font sizes are some examples of accessibility features that technology can offer. These features can ensure that all students have equal access to educational content and can participate fully in the learning process.

Technology can connect better with students by providing personalised learning experiences, interactive and multimodal content, real-world connections, collaborative learning opportunities, immediate feedback, and accessibility and inclusivity features. When used thoughtfully and intentionally, educational technology can enhance student engagement, motivation, and learning outcomes, and create more meaningful and effective learning experiences for students.

How does technology boost collaboration?



The fourth benefit of technology we can see in the classroom is that technology can boost collaboration in several ways:

Online Collaboration Tools: Technology provides a wide range of online collaboration tools that enable students and educators to collaborate in real-time regardless of their physical location. These tools include collaborative document editing platforms like Google Docs, project management tools, communication and messaging apps, and virtual whiteboards, among others. These tools allow students to work together, share ideas, contribute to group projects, and provide feedback, fostering a collaborative learning environment.

Virtual Meeting and Video Conferencing: Technology allows for virtual meetings and video conferencing, which can facilitate collaboration among students and educators. Virtual meetings and video conferencing tools, such as Zoom, Microsoft Teams, or Google Meet, enable students to participate in virtual discussions, group activities, and presentations. Students can

collaborate on projects, discuss ideas, and receive feedback from peers and educators, even when they are not physically present in the same location. This feature might benefit Further & Higher Education on a more regular basis, given distance learning, but it can also have a place in post-primary settings during exam periods when students are revising from home.

Cloud-based Storage and File Sharing: Technology provides cloud-based storage and file sharing options, such as Google Drive, Dropbox, or Microsoft OneDrive, that enable students and educators to store, access, and share files and documents in a collaborative manner. This allows for easy sharing of resources, documents, and information among team members, promoting collaboration and teamwork.

Social Media and Discussion Forums: Technology facilitates collaboration through social media platforms and discussion forums. Social media platforms such as Facebook, Twitter, and Instagram can be used for group discussions, idea sharing, and collaboration among students. Discussion forums, whether within a learning management system or on dedicated online platforms, provide a space for students to ask questions, share ideas, and collaborate on projects, fostering a sense of community and engagement.

Online Project Management Tools: Technology offers online project management tools, such as Trello, Asana, or Basecamp, that can facilitate collaboration among students working on group projects. These tools allow for task assignment, progress tracking, communication, and file sharing in a structured and

organised manner. This can help students coordinate their efforts, stay accountable, and work together towards a common goal.

Gamification and Simulations: Technology can provide gamification and simulation experiences that promote collaboration among students. Gamified learning platforms or educational simulations allow students to work together in a virtual environment, solve problems, and make decisions collaboratively. These experiences can encourage teamwork, critical thinking, and problem-solving skills, while providing an engaging and interactive learning environment.

Technology can boost collaboration among students and educators by providing online collaboration tools, virtual meeting and video conferencing options, cloud-based storage and file sharing, social media and discussion forums, online project management tools, and gamification and simulations. When used effectively, technology can foster a collaborative learning environment that encourages teamwork, creativity, and critical thinking skills, leading to enhanced learning outcomes.

How does technology support learning?

The fifth benefit of technology we can see in the classroom is that technology can support learning in several ways:

Access to Information: Technology provides easy access to vast amounts of information through the internet, digital libraries,

databases, and educational websites. Students can access information from various sources, including articles, e-books, videos, and multimedia resources, to support their learning. This allows for self-directed learning and promotes information literacy skills.



Personalised Learning: Technology enables personalised learning experiences tailored to individual students' needs, interests, and areas of strength/weakness. Adaptive learning platforms, intelligent tutoring systems, and learning management systems can provide personalised learning pathways, adaptive assessments, and feedback based on individual performance, helping students to learn at their own pace and level of ability.

Interactive and Engaging Learning Experiences: Technology offers interactive and engaging learning experiences through educational apps, games, simulations, and multimedia resources. These resources can make learning fun and engaging, stimulating students' curiosity and motivation to learn. Interactive elements,

such as quizzes, videos, and simulations, can also help students grasp complex concepts and reinforce learning.

Collaboration and Communication: Technology enables collaboration and communication among students, educators, and peers, facilitating discussions, group activities, and knowledge sharing. Online collaboration tools, discussion forums, social media platforms, and virtual meeting platforms allow for collaborative learning experiences, where students can work together, exchange ideas, and learn from each other.

Flexibility and Accessibility: Technology provides flexibility and accessibility in learning, allowing students to learn anytime, anywhere, and at their own pace. Online learning platforms, digital resources, and mobile learning apps enable students to access learning materials and participate in learning activities beyond the traditional classroom setting. This can benefit students with diverse learning needs, schedules, and geographical locations.

Assessment and Feedback: Technology supports assessment and feedback processes, providing automated grading, immediate feedback, and performance analytics. Online quizzes, assignments, and assessments can provide instant feedback to students, allowing them to reflect on their learning and make improvements. Educators can also use analytics and data from learning management systems to monitor student progress and provide targeted feedback.

Enhancing Digital Literacy and 21st Century Skills: Technology equips students with digital literacy skills and 21st-century skills, including critical thinking, problem-solving, communication, and collaboration skills that are essential for success in the modern workforce. Students learn to navigate digital tools, evaluate information credibility, and use technology effectively for learning and productivity.

Technology supports learning by providing access to information, personalised learning experiences, interactive and engaging learning experiences, collaboration and communication opportunities, flexibility and accessibility, assessment and feedback processes, and enhancing digital literacy and 21st-century skills. When used appropriately, technology can enhance the learning process, engage students, and prepare them for success in the digital age.

Ideas for Integrating Technology in the Classroom

Benefit of technology #1: Gamified Learning

Gamified learning, which integrates elements of game design into educational activities, can support students in various ways, as a benefit of technology:

Increased Engagement: Gamified learning can make the learning

process more enjoyable and engaging for students. Game elements such as points, levels, badges, and leaderboards can motivate students to actively participate, complete tasks, and strive for achievements. This increased engagement can lead to improved retention of information and concepts.

Enhanced Motivation: Gamified learning can tap into students' intrinsic motivation by leveraging their natural inclination towards competition, achievement, and rewards. As students progress through levels, earn points, or unlock new content, they feel a sense of accomplishment and motivation to continue learning and advancing.

Active Learning: Gamified learning often involves active participation, problem-solving, and decision-making, which can promote deeper learning. Students may need to apply knowledge and skills in context, make choices, and solve challenges within the game, leading to a more immersive and interactive learning experience.

Immediate Feedback: Gamified learning often provides immediate feedback on students' performance, allowing them to learn from their mistakes and make improvements in real-time. This feedback loop can help students understand their strengths and weaknesses, and adjust their learning strategies accordingly.

Personalised Learning: Gamified learning can be designed to provide personalised learning experiences, where students can progress at their own pace and receive tailored feedback. Game mechanics can adapt to individual student performance, providing challenges that are appropriately challenging yet achievable, and accommodating different learning styles and preferences.

Social Interaction: Gamified learning can facilitate social

interaction among students, promoting collaboration, competition, and peer learning. Multiplayer games, collaborative challenges, and leaderboards can foster a sense of community and encourage students to work together, discuss strategies, and learn from each other.

Skill Development: Gamified learning can also help students develop various skills, such as critical thinking, problem-solving, decision-making, creativity, and teamwork. Game-based activities may require students to analyse information, make strategic choices, and work collaboratively, which can transfer to real-world skills.

Real-World Application: Gamified learning can provide opportunities for students to apply their knowledge and skills in authentic, real-world contexts. Simulations, virtual environments, and scenario-based games can allow students to practice skills in realistic settings, helping them bridge the gap between theory and practice.

In conclusion, gamified learning can support students by increasing engagement, enhancing motivation, promoting active learning, providing immediate feedback, facilitating personalised learning, fostering social interaction, developing skills, and promoting real-world application. When designed effectively, gamified learning can be a powerful educational tool that enhances the learning experience and promotes student success and presents another benefit of technology in the classroom.

Benefit of technology #2: Virtual Field Trips

Virtual field trips, which allow students to explore places and environments virtually through technology, can support students in several ways, as a benefit of technology:

Access to Diverse Learning Opportunities: Virtual field trips provide access to a wide range of learning opportunities that may not be physically accessible to all students. Students can virtually visit historical landmarks, museums, national parks, scientific laboratories, and other locations that may be geographically distant or financially prohibitive to visit in person. This allows students to broaden their understanding of the world and experience new cultures, environments, and perspectives.

Enhanced Engagement and Interest: Virtual field trips can spark students' curiosity and interest, making learning more engaging and enjoyable. Through interactive virtual experiences, students can actively explore, observe, and interact with the virtual environment, which can stimulate their senses and boost their engagement with the content.

Immersive Learning Experiences: Virtual field trips can provide students with immersive learning experiences that can enhance their understanding of a subject. For example, students can virtually visit a historical site and visualise the historical events that took place there, or explore the inside of a cell to understand its structure and function. These immersive experiences can help students make connections between theory and real-world application.

Flexibility and Customisation: Virtual field trips can be customised to meet the specific needs and interests of students. Teachers can select virtual field trips that align with their curriculum, learning objectives, and student interests. Additionally, virtual field trips can be accessed at any time and from anywhere, providing flexibility in scheduling and allowing students to revisit the virtual environment to reinforce their learning.

Inclusive Learning Opportunities: Virtual field trips can provide inclusive learning opportunities for students with diverse abilities. Virtual environments can be designed to accommodate different learning styles, and students can interact with the content at their own pace. Virtual field trips can also provide accessibility features, such as closed captioning or audio descriptions, to ensure that all students can fully engage with the virtual experience.

Cost-Effective and Sustainable: Virtual field trips can be a cost-effective and sustainable alternative to physical field trips. Physical field trips often require significant logistical arrangements, expenses, and environmental impacts, while virtual field trips can be accessed with minimal costs and environmental footprint. Virtual field trips can be a practical option for schools or districts with limited resources or for reducing the carbon footprint associated with field trips.

Connection to Real-World Applications: Virtual field trips can help students make connections between classroom learning and real-world applications. Students can see how concepts and skills learned in class are applied in real-world settings, which can enhance their understanding and motivation to learn. Virtual field trips can also inspire students to pursue further study or careers in fields related to the virtual trip, such as history, science, or culture.

In conclusion, virtual field trips can support students by providing access to diverse learning opportunities, enhancing engagement and interest, providing immersive learning experiences, offering flexibility and customisation, providing inclusive learning opportunities, being cost-effective and sustainable, and connecting classroom learning to real-world applications. Virtual field trips can be a valuable educational tool that expands students' horizons and enriches their learning experiences.

Benefit of technology #3: Create Student Websites

Creating websites can be a powerful way to support student learning in various educational settings. Here are some ways in which creating websites can enhance student learning, as a benefit of technology:

Hands-on, Project-Based Learning: Creating websites involves hands-on, project-based learning where students actively engage in designing, developing, and publishing content. This allows students to apply and reinforce their knowledge and skills in a practical, real-world context. They can conceptualise, plan, and implement their websites, making decisions about layout, content, design, and functionality, which fosters critical thinking, problem-solving, and creativity.

Authentic Audience and Purpose: Creating websites provides students with an authentic audience and purpose for their work.

When students create websites, they often publish their work online, making it accessible to a wider audience beyond the classroom. This motivates students to produce high-quality work and take pride in their creations, as their websites can be viewed by peers, parents, teachers, and even the broader public. This real-world relevance and purpose can increase students' motivation and engagement in the learning process.

Digital Literacy and Technology Skills: Creating websites requires students to develop digital literacy and technology skills, which are essential for success in the digital age. Students learn how to navigate web-based tools, use website builders, create multimedia content, apply design principles, and manage online resources. These skills are transferable and can be applied in various academic, personal, and professional contexts, helping students become digitally competent learners and citizens.

Personalisation and Ownership: Creating websites allows students to personalise their learning experiences and take ownership of their work. Students can choose the topic, design, and content of their websites based on their interests, preferences, and learning goals. This fosters student agency, autonomy, and creativity, as they have the freedom to express themselves, showcase their talents, and make their websites unique reflections of their learning journeys.

Collaboration and Communication: Creating websites can facilitate collaboration and communication among students. Students can work collaboratively in teams, contributing their individual strengths and skills to create a cohesive website. They can also engage in peer review, feedback, and editing processes to improve the quality of their websites. Additionally, students can use websites as a means of communication and expression, sharing their ideas, thoughts, and perspectives with others, and engaging in discussions or debates on the online platform.

Multimodal Learning: Creating websites allows students to engage in multimodal learning, where they can integrate various forms of media, such as text, images, videos, audio, and interactive elements, to convey their ideas and messages. This helps students develop digital literacy and critical media literacy

skills, as they learn how to evaluate, create, and present information in different media formats. Multimodal learning also caters to different learning styles, as students can choose the media that best suits their strengths and preferences.

Real-World Applications: Creating websites can help students see the real-world applications of their learning. They can create websites related to authentic issues, topics, or projects that have real-world relevance, such as social issues, scientific research, historical events, or community initiatives. This connects classroom learning to real-world contexts, helping students see the practical applications of their knowledge and skills.

Creating websites can support student learning by providing hands-on, project-based learning opportunities, offering an authentic audience and purpose for student work, developing digital literacy and technology skills, fostering personalisation and ownership, facilitating collaboration and communication, promoting multimodal learning, and highlighting real-world applications. Incorporating website creation as a learning activity can empower students to become active creators of content in the digital age and enhance their learning experiences in meaningful ways.

Benefit of technology #4: Online Discussion

Online discussions can be a powerful tool to support student learning in various educational settings. Here are some ways in which online discussions can enhance student learning, as a benefit of technology:

Active Engagement: Online discussions require active participation from students, as they need to read, analyse, and respond to prompts or questions. This active engagement promotes critical thinking, reflection, and analysis, as students articulate their thoughts, ideas, and perspectives. Online discussions also encourage students to express themselves in writing, helping them develop written communication skills, which are essential in academic and professional contexts.

Collaboration and Peer Learning: Online discussions provide opportunities for collaboration and peer learning. Students can engage in discussions with their peers, sharing their ideas, perspectives, and insights, and engaging in constructive dialogue. Through online discussions, students can learn from each other, expand their knowledge, and gain new perspectives on the topic at hand. This collaborative approach fosters social learning, communication skills, and teamwork, which are important 21st-century skills.

Flexibility and Accessibility: Online discussions can be flexible and accessible, allowing students to participate at their own pace and convenience. Students can engage in discussions asynchronously, meaning they can contribute at different times without being constrained by a specific class schedule. This

flexibility accommodates diverse learning styles, preferences, and availability, making online discussions accessible to a wider range of students, including those with different learning needs or responsibilities outside of school.

Reflection and Metacognition: Online discussions can promote reflection and metacognition, as students reflect on their own ideas, perspectives, and learning processes. Through written responses and interactions with peers, students can clarify their thoughts, deepen their understanding, and make connections between different concepts or experiences. This metacognitive process encourages students to think critically about their own learning and develop self-regulation skills, which are important for lifelong learning.

Amplification of Voices: Online discussions can provide a platform for all students to participate and have their voices heard. In traditional classroom discussions, some students may be hesitant to speak up or may be overshadowed by more vocal peers. However, online discussions can level the playing field, allowing all students to contribute and share their ideas. This can empower introverted students, students from diverse backgrounds, or those who may feel marginalized in face-to-face discussions to participate more actively and engage in meaningful discourse.

Diverse Perspectives and Global Connections: Online discussions can provide students with opportunities to engage with diverse perspectives and connect with peers from different cultural, geographic, or linguistic backgrounds. This can broaden students' horizons, foster empathy and tolerance, and enhance their global awareness. Online discussions can also provide a platform for students to collaborate with peers from different parts of the world, allowing them to learn from different perspectives and cultures.

Authentic Assessment: Online discussions can be used as a form of authentic assessment, where students demonstrate their understanding and application of course content in a real-world context. By participating in online discussions, students can showcase their critical thinking, communication, and

collaboration skills, as well as their ability to apply their knowledge to real-world situations. This can provide valuable feedback to both students and teachers about the effectiveness of their learning and help inform future instruction.

Online discussions can support student learning by promoting active engagement, collaboration and peer learning, flexibility and accessibility, reflection and metacognition, amplification of voices, diverse perspectives and global connections, and authentic assessment. Incorporating online discussions as a pedagogical approach can enhance student participation, critical thinking, communication skills, and global awareness, contributing to a meaningful and engaging learning experience for students in online or blended learning environments.

Benefit of technology #5: Use Social Media

Social media, when used appropriately and purposefully, as a benefit of technology, can support student learning in several ways:

Access to Information and Resources: Social media platforms can serve as a rich source of information and resources that can support student learning. For example, educational organisations, institutions, and educators often share relevant articles, videos, infographics, and other educational content on social media platforms. Students can follow these accounts, join relevant groups or communities, and access a wide range of content related to their subjects of study, expanding their knowledge and learning opportunities.

Collaboration and Peer Learning: Social media can facilitate collaboration and peer learning among students. Students can use social media platforms to connect, communicate, and collaborate with their peers on group projects, assignments, or discussions. Social media platforms can provide opportunities for students to share ideas, resources, and feedback, as well as engage in discussions, debates, and knowledge-sharing. This collaborative approach can foster teamwork, critical thinking, and communication skills, as well as promote a sense of community and belonging among students.

Authentic Audience and Feedback: Social media platforms can provide students with an authentic audience for their work. Students can showcase their learning and creative projects, such as writing, art, videos, or presentations, on social media platforms, and receive feedback from a wider audience beyond their immediate classroom. This can motivate students to produce high-quality work, take pride in their accomplishments, and improve their skills based on feedback from real-world perspectives. This authentic audience can also help students understand the relevance and application of their learning in real-world contexts.

Real-World Connections and Perspectives: Social media can connect students with real-world experts, professionals, and organisations, providing them with diverse perspectives and insights. Students can follow industry leaders, professionals, or experts in their fields of interest, and learn from their posts, articles, and discussions. Social media can also facilitate interactions with experts or professionals through Q&A sessions, interviews, or virtual mentoring programs, enabling students to gain valuable insights into their fields of study and understand real-world applications of their learning.

Current Events and News: Social media platforms can help students stay updated with current events, news, and relevant topics. Students can follow news organisations, journalists, or experts on social media platforms to access real-time information, debates, and discussions on current events or trending topics. This can enrich their understanding of the world,

develop critical thinking skills, and foster civic engagement and social awareness.

Informal Learning and Informal Education: Social media platforms can support informal learning and informal education, complementing formal classroom education. Students can access educational content, resources, and discussions on social media platforms at their own pace and convenience, outside of formal classroom settings. This can promote self-directed learning, curiosity, and exploration, and allow students to pursue their interests or passions beyond the formal curriculum.

Digital Citizenship Skills: Social media can help students develop digital citizenship skills, which are essential for responsible and ethical use of technology. Through social media platforms, students can learn about online safety, privacy, digital etiquette, and responsible social media use. They can also learn to evaluate the credibility and reliability of information, navigate through online discussions, and engage in respectful and constructive online interactions.

It's important to note that educators, students, and parents should be mindful of responsible and ethical use of social media in an educational context. Proper guidelines, supervision, and digital citizenship education should be in place to ensure that social media is used in a safe and productive manner for supporting student learning.

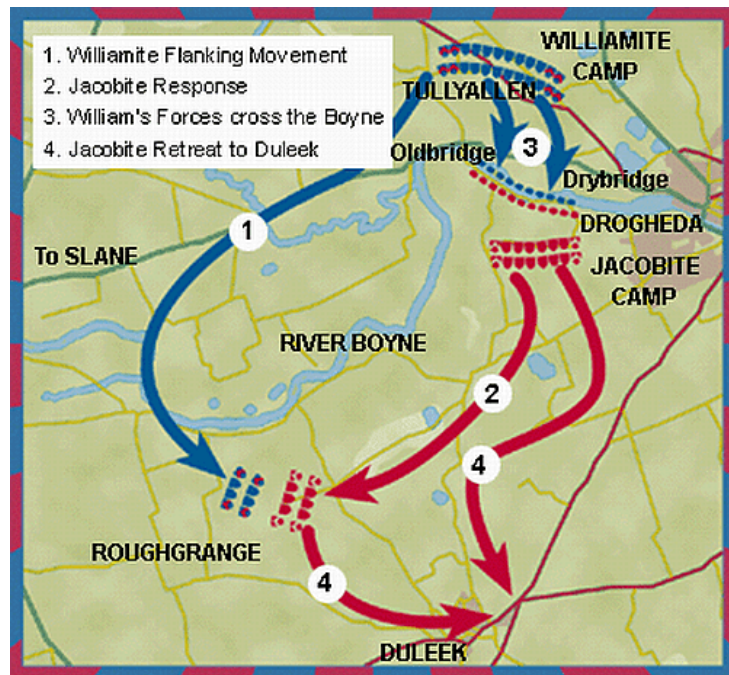
Final Thoughts

The benefits of technology in the classroom, when thought out, planned, carefully constructed and well executed can give clear and obvious benefits to the learning of the pupil and enhance the standard of teaching. When expertly constructed and competently delivered, the use of technology in the classroom can reduce confusion and add clarity to instruction and understanding to curriculum content.

As a quick example (and proof that not everything needs to be digital – but innovative): I studied History at A-Level. As part of our course, we studied the Battle of the Boyne – a battle in history that is contentiously remembered in Northern Ireland to this day. When I studied this course (1998-2000), my history teacher was nearing the end of his career and used photocopied, type-written notes. The original copy had no doubt been lost to

the sands of time (and will probably be found somewhere close to the Dead Sea Scrolls), but we were working from a copy of a copy (parts of the page did not photocopy properly, so he told us what to write in these sections).

The part I want to focus on, are the events of the actual battle. At that time, through his instruction (a marker of teaching at that time), I did not understand at all what happened in the battle – only who won and lost and why it was historically significant. It stayed this way for 15 years, until I was driving past the Boyne Valley in Ireland with my family and we decided to stop at the museum. They had a 3-D model of the the battle, which detailed the events of the battle as seen in the image below.



This dispelled a persistent fog that existed over part of my understanding from this time. I couldn't understand (audibly) how the battle unfolded and neither the text, nor the explanation helped. After that the teacher moved on to other content. The introduction of a physical representation (complete with LED lights indicating the progress of the Battle) showed me what words and text could not. (I appreciate I could have looked it up online since then, but never had cause to, so phrasing it as a 'persistent fog' is a beautiful over-dramatisation of the facts.)

It's been a powerful moment in my history as a learner. Seeing something at work will always benefit the learner and their ability to understand in a far greater manner than listening/reading about it. When I teach ICT, it is the demonstration of a task that benefits pupils most. Theory can be perfectly understood, but seeing a concept in action (and working) is a powerful tool for any teacher to use in the classroom.

Fast forward to the present day and our opportunity to use technology has increased; our ability to use technology has increased and the cost of technology has largely decreased. The benefit of technology should enhance and improve our reach so far beyond the classroom that our curriculum is delivered more efficiently and effectively to enhance our teaching in the classroom.

The benefit of technology is clear – for learners, for teachers, and for teachers as learners – using technology to access CPD is

another benefit that hasn't been considered today, but is of course part of the benefit of technology that we can make use of.

The next step is simple – think about what you want to create (you'll know this from your classes – what would they benefit from most: video content? audio (podcast) material? Written content (eTextbooks)? and set about creating it! The next move is yours, but if you want to reach out for some focused advice, please do through one of the social platforms you find me on!

6 Research-Backed Reasons to Prove Video Lessons Are Important



Six Research-Backed Reasons to Prove Video Lessons Are Important

Hello! How are you? It has been a minute or two since my last post, and so while this is long overdue, like many of you, exam season (in Northern Ireland at least) has arrived and with it brings all the marking and report writing, so having largely cleared those tasks, I have had a few moments to finalise my thoughts on this post.

So, let's start this post with a question: Do you ever feel like you could be doing more to help your students?

I would imagine, a majority of you will say yes. But what do we do after that acknowledgement? How do we get from knowing we could do more, to actually doing more?

In this post, I will present one way we can do this, really effectively: video content.

Putting yourself in front of the camera can be scary at first, but there are a number of tools (many of them free) that will make the process fairly painless and don't require much technological skill. As most of my videos are ICT-related and so I don't always have my face on screen. My first videos were during lockdown and used PowerPoint, a microphone and Microsoft Teams to record the lecture (I worked in a Further Education College at the time). There are many other tools you could use instead of Teams, like [Explain Everything](#), [Screencast-O-Matic](#), or [OBS Studio](#) (which I have started using). So when I created my first instructional videos using a mic and a screen-casting programme to record the lecture over PowerPoint slides. I then uploaded the video to YouTube, which I then embedded to [Canvas](#) and included questions to check for understanding.

This strategy was so effective that after a while I began recording while teaching. In the first instance, I recorded the lecture and published it after the lecture, but the time constraints made it too much. I began to record the lecture while delivering it to students. The lecture content was the same, but I would support them with examples which I couldn't always remember afterwards, or would use completely different examples – it was important that the students heard the same message in the recording and 'in person.'

An initial question is, it worth the investment of time? In the beginning, you can keep it simple: Start with a significant topic,

break it down into manageable segments, and create short videos. Meanwhile, an increasing amount of research suggests that using video content to supplement or replace class lessons can be a powerful approach to learning. This in part is because it allows students the ability to pace their learning, learning content can be chunked into easier-to-follow segments, which facilitates retrieval and review for students, and leverages visual cues to reinforce the material.

Here are six research-backed reasons why you should consider recording (at least some of) your lessons.

Short Videos Align With Known Attention Limits

Have you ever watched a short video on YouTube, Facebook, Instagram, or TikTok? Has it ever been just one video? Of course not! Part of the way the platform has been designed is to keep you watching, but it is the length of the video that is the key. A short video works within our attention spans and ends before we reach cognitive exhaustion, allowing us to continue watching until 45 minutes have passed and you realise you have spent much longer watching those videos than you intended.



The key takeaway to this is that we should be looking to replicate this within any video we produce as teachers. Our pupils will have a lower attention span due to the developmental stage they are at, so we shouldn't expect them to be attending

for long periods of time. BrainBalanceCenters puts out the following information regarding normal attention span expectations according to age:

2 Years Old	4 Years Old	6 Years Old	8 Years Old	10 Years Old	12 Years Old	14 Years Old	16 Years Old
4-6 minutes	8-12 minutes	12-18 minutes	16-24 minutes	20-30 minutes	24-36 minutes	28-42 minutes	32-48 minutes

These figures would tend to go against current research: in 2014, researchers from MIT, Harvard, and Berkeley analysed millions of video sessions and came to the conclusion that the “median engagement time is at most 6 minutes,” with video length being “by far the most significant indicator of engagement.” This is more important than other characteristics like instructor presence and video production quality. In a similar finding in 2022, university professors did nothing more than cut a 55-minute video into several smaller 8-minute videos, and found that viewing time increased by 25 percent, and the academic performance of students improved. In most aspects of school, and life, we tend to overestimate our abilities when it comes to maintaining attention. Studies suggest that young children’s attention begins to drop after 10 minutes, and older students often struggle to remember material covered later in a lecture.

Instructional videos give you the ability to break up longer lessons into several shorter ones—this will increase the likelihood that students will be able to sustain attention and commit what they’re learning to memory.

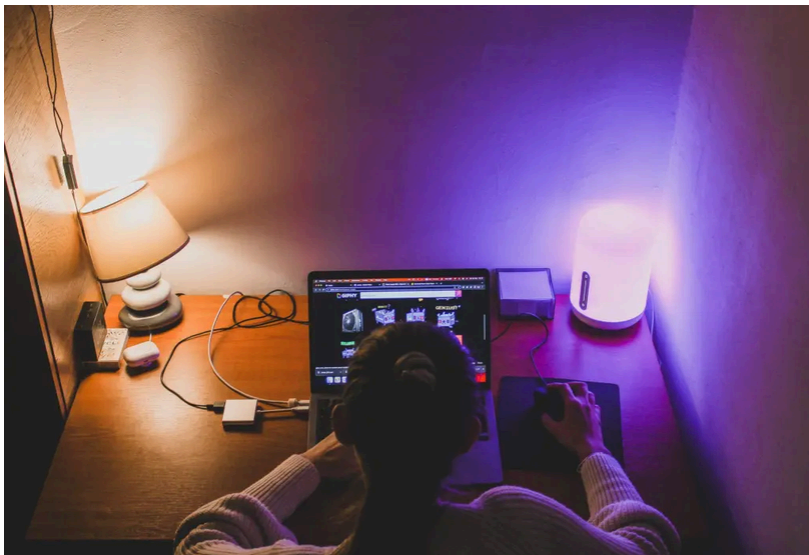
A good rule of thumb is to think about where to break your lessons in class. After how long in a demonstration, or opening section do you move your class towards an activity? “It is recommended that teachers should make the videos as short as possible, but one complete knowledge point should be contained in one video,” the researchers in the 2022 study suggests.

It will seem that I am contradicting the times listed in the table – and I am. For video content, try to keep it short. In my own video content for my students, I started with longer video but the data analysis showed me how student attention began to wane after 10 minutes. This supported findings provided by other teachers who published video content and led to me making adjustments to my own planning. At which points in my larger content plans

could I cut the content (naturally) into smaller, but complete pieces?

The important point here is that I haven't reduced the content, just repackaged it into more manageable sizes for students to choose what they want to focus on.

Video Libraries Enable Self-Paced Learning



The asynchronous, always-available nature of video libraries can help to solve many of the sequencing issues that plague teachers: how do we re-incorporate students who are returning to school after an absence? What do we do with pupils who need to revisit some of the foundational concepts? Or how can we more effectively differentiate between students?

Being able to access a video library at different points— the ability to move ahead or revisit previous lessons for further reinforcement—is a built-in advantage of video learning, and it allows students to self-pace in their own time, allowing them to take ownership of their learning. In a 2019 study, researchers concluded that students “learn better when multimedia instructions are presented in learner-paced segments, rather than as continuous units.” This is because the ability to control the pace of video provides the student with more time to process or review specific information. This allows students to “adapt the presentation pace to their individual needs.”

The ability for the student to control the video playback in real time – by pausing and replaying- allows “students to regulate their cognitive load, [which leads] to better learning,” researchers conclude in a 2021 study. “This ability to self-pace has been previously identified as a key feature contributing to the success of online learning, more generally.”

Videos Support Rich Formative Assessment - Asynchronously and at Scale



In today's digital age, the power of modern tools for video creation and distribution extends far beyond their basic functionalities. These innovative solutions incorporate auditing systems that capture invaluable data, shedding light on what truly connects with your students and what doesn't. The best part? These tools operate asynchronously, granting flexibility and convenience. Additionally, they offer user-friendly visual representations such as charts and graphs, simplifying the process of formative assessment, including gauging students' on-task behaviour.

Imagine the ability to evaluate specific knowledge retention within instructional videos. By utilising programs like Edpuzzle, you can embed questions seamlessly throughout the video, resulting in improved student interaction and invaluable formative assessment data. According to esteemed educational technology expert Robert Barnett, this approach is highly effective. A study conducted in 2020 revealed that college students who watched videos with embedded pop-up questions achieved significantly higher test results compared to those without those interactive elements. Interestingly, their test performance even jumped by almost half a grade. Similarly, a study from 2015 concluded that students who watched videos with embedded questions were more likely to take notes, experienced reduced anxiety regarding final exams, and felt a lesser mental burden while engaging with the content.

Moreover, these video-creation tools, such as Edpuzzle and Screencastify, are tailored for classroom environments. They offer teachers comprehensive usage-based auditing trails, empowering them to provide more effective feedback, instruction, and grading.

If you want to know which students watched your videos and to what extent, or if you are curious if they engaged with the entire video or only specific segments, or if you want insights on lessons that received limited screen time, enabling you to refine or remove them? Then these tools provide answers to all these queries and more, equipping educators with data-driven decision-making capabilities.

The advent of cutting-edge video creation and distribution tools has revolutionised the educational landscape. By harnessing

their built-in auditing systems, teachers can gain deep insights into student preferences and learning behaviours. Furthermore, embedding interactive questions within instructional videos enhances student engagement and produces invaluable formative assessment data. With classroom-friendly platforms like Edpuzzle and Screencastify, teachers can leverage usage-based auditing trails to refine their instruction, elevate feedback, and ultimately enhance [student learning](#) outcomes. We can embrace these transformative tools and unlock a new realm of educational possibilities both inside and outside the classroom.

Videos Support Flexible Review (and re-view)



Decades of research have unequivocally demonstrated the effectiveness of review and retrieval practice in reinforcing learning. In this digital era, video learning has emerged as a powerful tool, offering a cost-effective and flexible study method that moves beyond geographical limitations. As highlighted in a comprehensive analysis from 2018, encompassing 270 studies on instructional videos, students can leverage video content to review material repeatedly, at their convenience, and at any hour. In contrast, live lectures follow a linear structure, devoid of the ability to be replayed, rewound, or paused for deeper contemplation.

The inability to revisit specific points during live lectures is a noteworthy limitation. Politeness and a desire to maintain a smooth classroom environment often hinder students from interrupting the teacher or asking questions, as observed in a 2011 study. However, video libraries eliminate these barriers by providing students with on-demand access to content precisely when they need it most, such as during review and exam

preparation. Malhotra underscores the significance of this point. After creating a series of instructional videos based on his lectures, he surveyed his students and made a remarkable discovery: the majority of them watched the videos multiple times. This compelling evidence suggests that a single lecture alone would not have sufficed in meeting their learning needs.

Videos Allow Pupils to Replay the Points Where Confusion Set In



Educator Laura Thomas has noted that sometimes it's crucial for students to grasp not just what is incorrect, but also why it is incorrect or why a particular concept proves challenging. One common approach to address this is by inviting students to explain their "muddiest points," shedding light on areas where confusion or difficulty arises.

However, in reality, many students may hesitate to raise their hand and ask the teacher to revisit a concept during class time. This discomfort can impede their learning and hinder their ability to fully comprehend challenging concepts.

The repercussions of failing to master a foundational but challenging concept can be profound, casting a shadow over the entire academic term for the pupil. Fortunately, video learning offers a transformative solution. When students watch educational videos at home, they gain the freedom to rewind and review content as many times as necessary. This empowers them to revisit confusing concepts, enabling a deeper understanding. Additionally, they can jot down questions and engage in discussions with peers or their teacher, fostering a collaborative learning environment. A recent study conducted in 2022 highlighted the benefits of even a simple pause button, as it helps students alleviate cognitive overload. By granting the ability to pause and reflect, students can ease the burden of processing a continuous stream of new information, allowing for better integration with existing knowledge structures.

Video learning offers many advantages that empower students to take control of their education. The flexibility it affords

ensures that students can explore challenging concepts at their own pace and convenience. No longer confined by the limitations of classroom time, they have the freedom to revisit content, seek clarification, and develop a more comprehensive understanding. The profound impact of video learning is evident in the positive outcomes observed in recent studies.

Video learning not only promotes student autonomy and flexibility but also serves as a powerful tool for reflection and comprehension. By watching educational videos at home, students can overcome the hesitations of asking questions in class and instead engage in deep reflection, enabling a solid grasp of complex concepts. Let us embrace the transformative benefits of video learning, paving the way for enhanced understanding, active student participation, and a truly enriching educational experience.

Videos Dramatically Improve Content Clarity and Impact

Have you ever thought you delivered a brilliant impromptu example that beautifully tied everything together, only to realise that, upon seeing yourself on video, the connections weren't as clear as you initially thought? This is where the magic of video lectures comes into play. Unlike in-person lessons, videos

provide ample time to organise your thoughts and offer a unique opportunity to watch and refine your delivery, correcting any inconsistencies or logical leaps that might have slipped through in a live lecture.

The benefits of video lectures extend far beyond self-improvement. In a recent study conducted in 2021, researchers highlight how videos enhance the coherence and efficiency of teaching. Unlike in-person lessons that can veer off-track due to digressions and distractions, videos enable teachers to make content more coherent and apply design principles that might



As you embark on your video lecture journey, remember that it's an art form that combines clarity, authenticity, and meaningful content delivery. Through the power of video, you have the opportunity to refine your teaching, captivate your audience, and

not be executed perfectly in a classroom setting. They can strategically time key points with slides, highlight important information, and prioritise core content while eliminating irrelevant details that might divert students from the intended learning objectives.

It's important to note that striving for perfection should not be your primary focus. According to Farah, an experienced educator, and supported by learning-video pioneer Sal Khan, embracing your authentic personality and allowing your natural conversational style to shine through is key to creating engaging and effective videos. Research confirms that videos in which instructors speak with enthusiasm and authenticity garner the highest levels of student engagement. Farah and Barnett emphasise that students genuinely appreciate knowing that it's their actual teacher behind the video, fostering a sense of connection and familiarity.

create an immersive learning experience. Embrace the process, embrace your unique style, and unleash the full potential of video lectures to make a lasting impact on your students' educational journey.

Final Thoughts

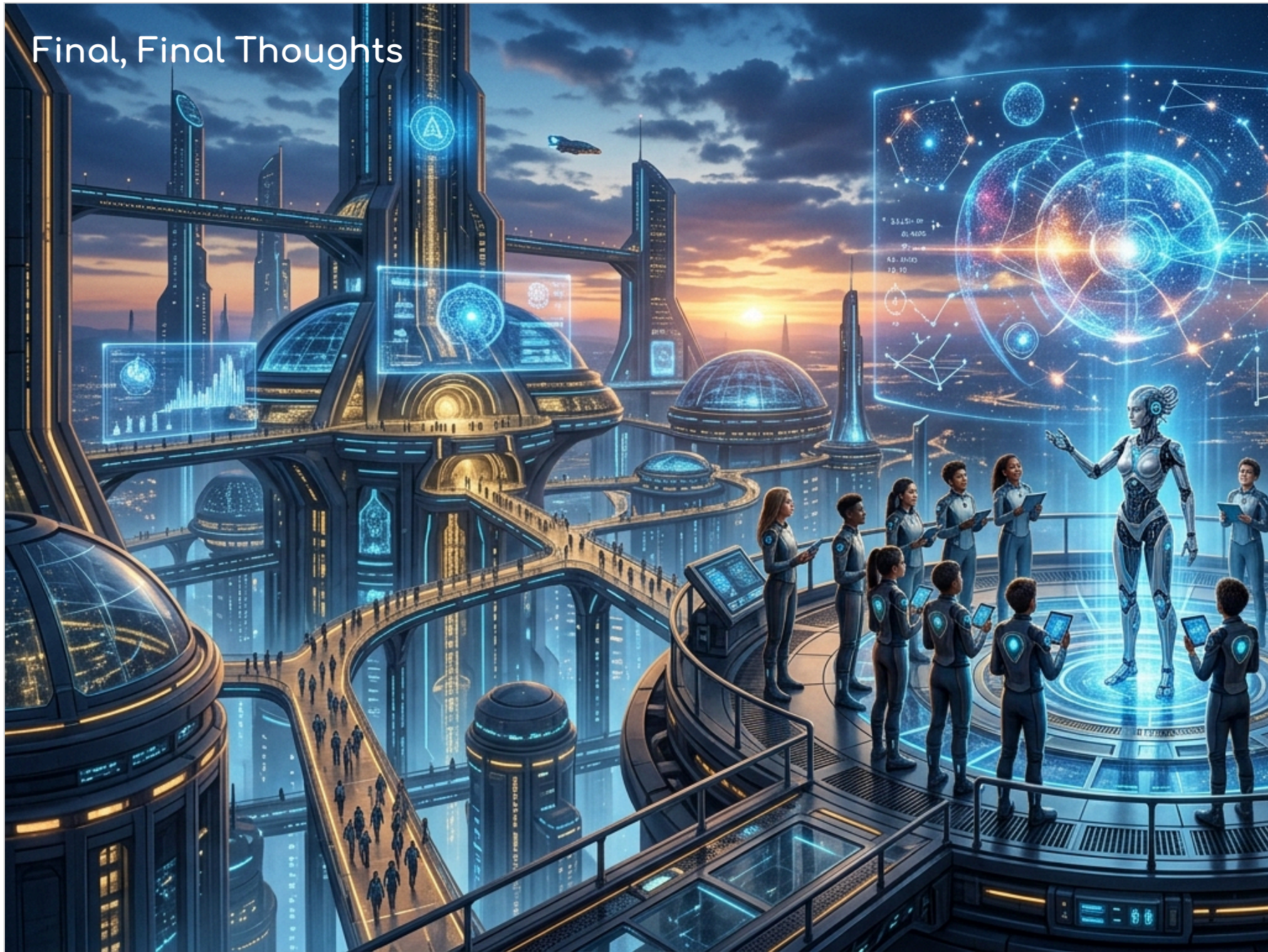
Video lessons can have a crucial impact on your pupils learning. There are negatives – like the time investment it takes, but it is important to remember that you're not producing for Pixar, or to win Oscars. The learning is the key aspect here and the video simply needs to be clear in its aim to deliver learning content that you have covered in class.

The positives are many and have been outlined above. The benefits to video content is what it provides to the student – the opportunity to receive your teaching content outside of the classroom and in ways that suit their timeframe and learning needs. We didn't touch on it in the post, but video content has significant benefits to

students with additional learning needs. Pupils who have processing difficulties, attention deficits or a difficulties surrounding the classroom environment can all benefit from accessing video learning content.

My final take on this is that, yes it does take time to implement video library content, but by working according to a prioritised plan of what is most needed by your students, you can build your video learning libraries over time and bring learning to your pupils outside of the classroom.

Final, Final Thoughts



Final, Final Thoughts

It has been quite the journey to arrive here. But as we hear so many times, I am just getting started!

There is still so much to explore, research, develop, produce, publish, and imagine! The list as they say is endless!

Technology is one of those areas that is constantly moving forward and because of this, it keeps me interested. I'm not about to jump onto the 'ADHD bandwagon' but there are definite tendencies towards always looking to the next topic, the next guide, podcast or book. This of course will benefit you (as a teacher) and if I'm writing about it, thinking about it and working out how it can work better in the classroom, then my classes - my pupils, the ones we do this for, will also benefit.

And because there is a lack of digital knowledge among teachers, I think this will always be needed. There will always be a 'market' to appeal to, to help educate and guide in the area of

how we can better use technology in and around the classroom. Of course, how AI will look in five years time will be unrecognisable to where we are today. We will probably have moved onto personal robots who cater to our every whim, or some other ridiculous sounding Orwellian nightmare.

The simple truth is that as teachers, no matter how much we might despise computers at times, they have made learning more accessible, but there is still work to be done to continue to reach those pupils who are still struggling.

I think that no matter how the future appears, if we face it with curiosity, enthusiasm and a questioning nature that engages our brain, then as teachers, we can't go too far wrong.

Until next time.
MJ

ABOUT THE AUTHOR

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Michael Johnston is an experienced educator and computing specialist who has been teaching since 2005, with a career spanning industry roles, further and higher education lecturing, and leadership as Head of Computing in a highly performing Northern Irish Grammar School. Through years of classroom practice, he has developed a strong focus on educational technology, combining practical teaching insight with a commitment to improving learning outcomes. As the founder of EdTechist, he shares his expertise to help schools and educators use technology effectively, advocating a pragmatic, student-centred approach where digital tools are only adopted when they genuinely enhance learning.



The Book Details

This eBook was constructed using bookcreator.com

All posts can originally be found on edtechist.co.uk

Images: Pexels.com and Gemini Image Generator

Fonts

Headings: Comfortaa (size 50)

Sub-headings: Comfortaa (size 40)

Body Text: Lato (size 15)