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Breaking Barriers in STEM

Irish EdTech Solutions for Primary and Second Level

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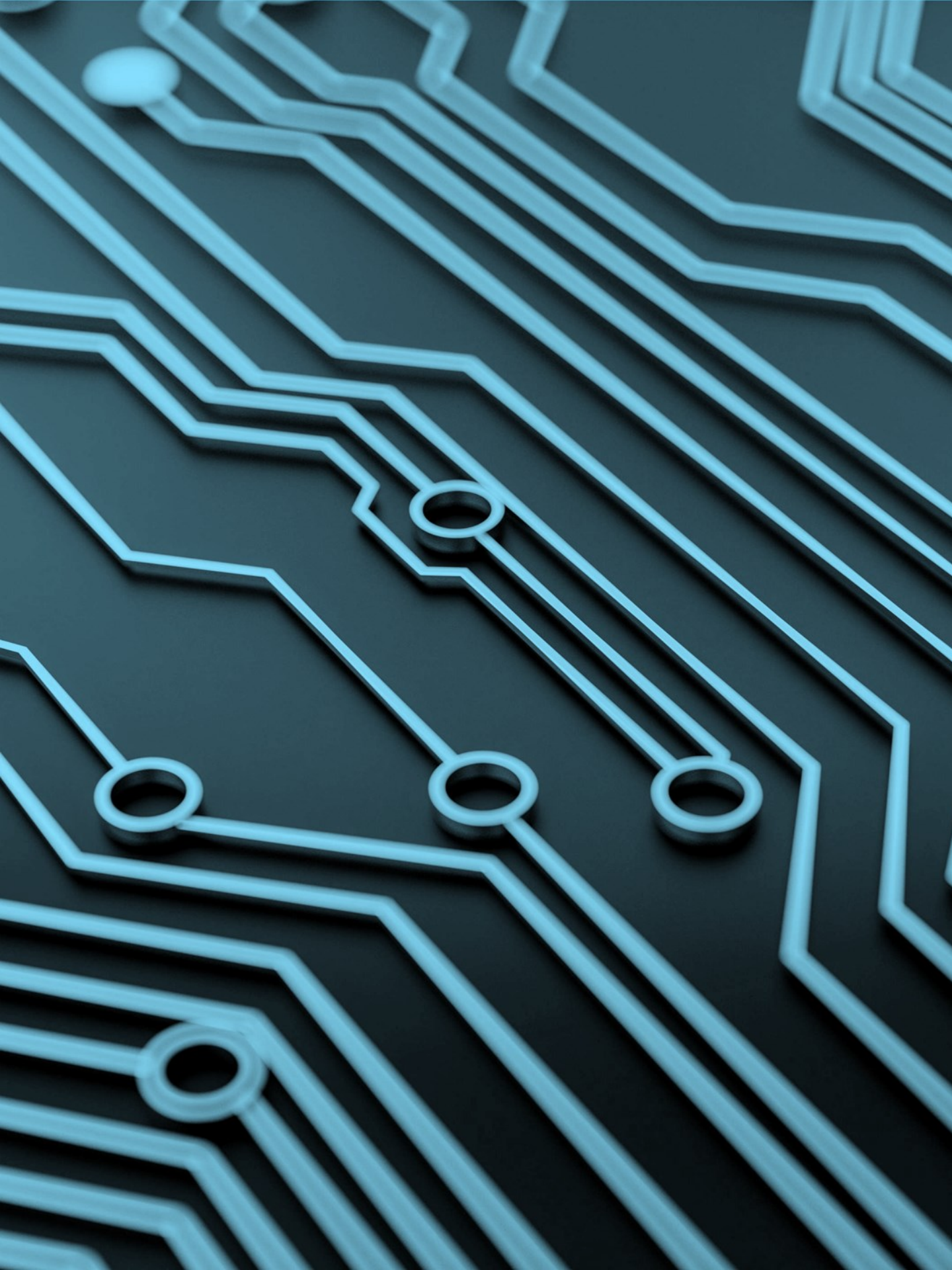

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EXPLORING EDTECH #9 DECEMBER 2024

Editorial

Welcome to **Exploring EdTech #9**.

As we close out 2024 and look ahead to the new term and a New Year, the educational technology landscape presents an inspiring picture of innovation and possibility. This year has been transformative, marked by groundbreaking developments both globally and here in Ireland, demonstrating how technology can enhance teaching and learning while maintaining the essential human elements that make education meaningful.

2024 has marked what Dr. Daithí Ó Murchú describes as "the precipice of a technological revolution that promises to redefine the very fabric of human existence." Globally, we saw multi-billion-euro investments in EdTech, reflecting a worldwide transformation in how we approach teaching and learning. This isn't merely about new tools; it's about reimagining education for a technology infused future. Here in Ireland, we're beginning to embrace this potential transformation through substantial investment and infrastructure development in our education system, that's not to say that technology in education is indeed the core issue, there has been much reflection this year on how, what and why we teach.

Certainly, the rapid emergence of AI in education over the past two years, has raised profound questions about how we balance technological advancement with human-centered learning. As Ó Murchú argues, we must remain "committed to the core values of education: fostering curiosity, critical thinking, mindfulness, creativity, soulfulness, empathy, and compassion." That said, international research indicates growing adoption of AI tools, with Forbes reporting that 60% of US teachers have integrated AI tools into their classrooms. In Ireland, we're seeing our own evolution in how technology out to be integrated into teaching and learning.

The STEM Passport for Inclusion initiative exemplifies how technology can break down barriers and create opportunities through education. With over 5,000 students participating and 79% now considering STEM studies at third level, we're seeing concrete evidence of how digital skills can transform aspirations and outcomes, particularly for underrepresented groups.

Perhaps one of the most fascinating developments this year has been the emergence of esports in education. What began as after-school gaming clubs has evolved into a powerful tool for engagement and skills development, although in its nascent stage in Ireland, there is optimism for the future. This represents a broader trend we're seeing: the transformation of traditional educational spaces into dynamic, technology-enhanced learning environments that connect with students' interests while developing crucial future-ready skills (which should not be conflated with workplace skills).

The growing emphasis on evidence-based EdTech adoption is particularly encouraging. The International Centre for EdTech Impact's work in developing standardized benchmarks for efficacy is helping schools make informed decisions about technology investments. This focus on proven impact ensures that our technology choices genuinely enhance learning outcomes rather than simply digitising existing practices.

What makes this particularly exciting for us in Ireland is how our homegrown innovation ecosystem is flourishing. Companies like Bool Technologies, Athena Analytics, and Nurture (back in May, the Education Authority of Northern Ireland chose Limerick-based Nurture as their assessment and feedback technology provider across 1,100 schools, benefiting over 20,000 teachers and 345,000 students in Northern Ireland) are developing solutions that address real classroom needs, from attendance management to personalized assessment feedback. These aren't just technology solutions – they're pedagogically sound tools designed with Irish educators and students in mind.

As we prepare for the new term, there's never been a more exciting time to be an educator in Ireland. The Digital Strategy for Schools to

2027 plan, provides a clear roadmap for technology integration, while innovative tools and approaches are making it easier than ever to create engaging, personalised learning experiences.

The future of education in Ireland looks bright, with AI-powered adaptive learning, immersive technologies, and data-driven insights offering the opportunity to better understand and support each student's learning journey.

As we move forward, the power of our educational community lies in our ability to share knowledge and experiences. This magazine is your resource for staying informed about the latest developments in educational technology, and we encourage you to share it with your colleagues. It's available free of charge because we believe that knowledge about educational technology should be accessible to all.

Visit our website to subscribe to our News service, which will keep you updated throughout the year on all things EdTech. By staying connected, we can collectively navigate this exciting technological frontier while ensuring that every innovation serves our core mission: providing the best possible education for our students.

The opportunities ahead are boundless, and together, we can shape an educational future that's more engaging, equitable, and effective than ever before. Here's to another year of innovation, collaboration, and transformation in Irish education.

Please feel free to contact me with any ideas and suggestions for future issues.

Tim Lavery, Editor, December 2024
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ESPORTS

THE RISE OF GAMING IN EDUCATION

Tim Lavery

ESPORTS

The Rise of Gaming in Education

Tim Lavery

> *The sound of rapid clicking fills a converted classroom as students huddle around high-performance PCs and large monitors, their faces illuminated by the screens' glow. This isn't a typical computer lab - it's the newest type of school sports facility: an esports arena. What began as informal gaming clubs has evolved into a global movement that's calling on the education community to rethink their approach student engagement, career preparation, and skills development.*

The Esports Revolution

In recent years, a new phenomenon has been sweeping through educational institutions across the globe: esports. Once dismissed as mere entertainment, competitive video gaming has evolved into a powerful tool for engagement, learning, and career preparation. Exploring EdTech, in the first of two articles, looks at the rise of esports in education across the US and several European countries, and its implications for students, educators, and the future of learning. In our next issue we will look closely at esports in Ireland, from after-school clubs to third-level championships, the national organisation - Ireland Esports and the Gamerfest event.

The Emergence of Esports in Education

Esports, short for electronic sports, encompasses a wide range of competitive video gaming activities. Esports in education is a multifaceted field that includes game design, event management, broadcasting, and marketing. It's preparing students for the digital economy in ways we couldn't have imagined a decade ago.

"*Esports isn't just about games*," explains Chris Aviles, of Garden State Esports GSE (based in New Jersey, US). "*We are seeing numbers as high as half of the kids participating in esports don't participate in any other activities at their school.*" This level of engagement has caught the attention of educators globally, especially as the industry continues its meteoric rise (GSE Report, 2022).

The growth of esports has been fuelled by technological advancements, increased fibre-internet accessibility, and the surging popularity of gaming among younger generations. According to Twitchtracker.com, Twitch (live-streaming service that focuses on video games) saw year-on-year increase in viewership after the pandemic hit, although numbers have decreased somewhat from a high of 26.5 billion hours watched to 19 billion hours of content viewed so far this year, it indicates an immense global audience and the appeal of esports and gaming in general.

For educators, understanding and leveraging esports means tapping into a powerful medium to enhance educational outcomes and student engagement. The educational benefits of esports extend far beyond the gaming screen. According to Intel's 2022 report on esports in K-12 education, a 2020 survey of over 1,100 esports athletes found that more than 60% planned to pursue careers in STEM or esports-related fields (Intel/Clarity Innovations, 2022).

Unlike traditional sports, esports break down physical barriers that can often limit participation. This inclusivity extends beyond physical abilities, GSE reports that 12% of its players have special needs, while data shows that games like Valorant maintain a roughly 40% female player base.

Why Schools Are Embracing Esports

Educational institutions in the US and several European countries, most notably in the UK, are increasingly incorporating esports into their educational programs, reaching students who might not have found their place in traditional extracurricular activities. The British Esports Federation, which hosts the International Esports in Education Summit, has seen dramatic increase in attendance by Senior Leaders, Curriculum Managers, Lecturers, and Educational Institutions with a keen interest in esports, with attendees registered from over 20 countries. Not only is there a keen interest in implementing esports in the curriculum and as regular extra-curricular but there has been major development in esports education (in Britain over 9,000 students are studying Esports/Game Dev and related subjects at BTEC).

According to Kalam Neale, Head of Education, British Esports “Esports education continues to provide an opportunity for students to access state-of-the-art facilities, develop skills for digital and creative industries and to pursue a passion in education that has

previously been unavailable. Centres offering esports are reporting substantial increases in student engagement, re-engagement of students into education, as well as increased retention and attendance figures." (Esports in Education Summit breaks record attendance for fifth successive year, British Esports)

Beyond engagement, esports offer numerous opportunities for students from 21CL skills, game dev and SEL to STEM, problem solving and teamwork

Career Pathways: The esports industry is booming, offering diverse career opportunities beyond professional gaming. Students can explore paths in game development, event management and digital marketing. The global professional esports revenue topped €900 million in 2020 with an audience of over 450 million people and a projected revenue exceeding €1billion this year.

Skill Development: Esports promotes essential 21st-century skills such as teamwork and effective communication. Educators in the US, that have esports programmes have reported seeing improvements in problem-solving skills, strategic thinking, and social-emotional learning among participating students.

Inclusivity: Unlike traditional sports, esports break down physical barriers, allowing students of all abilities to participate on an equal playing field.

STEM Integration: Esports programs are closely tied to STEAM education, encouraging students to explore technology, computer science and creative media.

The educational benefits of esports are significant. Esports can make learning more engaging and accessible, capture students' interest, and make complex concepts more relatable. Many state and national esports leagues have integrated wellness into their esports curriculum. In the US, the NASEF, the Network of Academic and Scholastic Esports Federations partnered with the Susan Samueli Integrative Health Institute/Samueli Foundation to develop a global education curriculum which includes resources on healthy relationships, choices, and goal setting, which capitalises on interest-based learning, capturing student attention through esports.

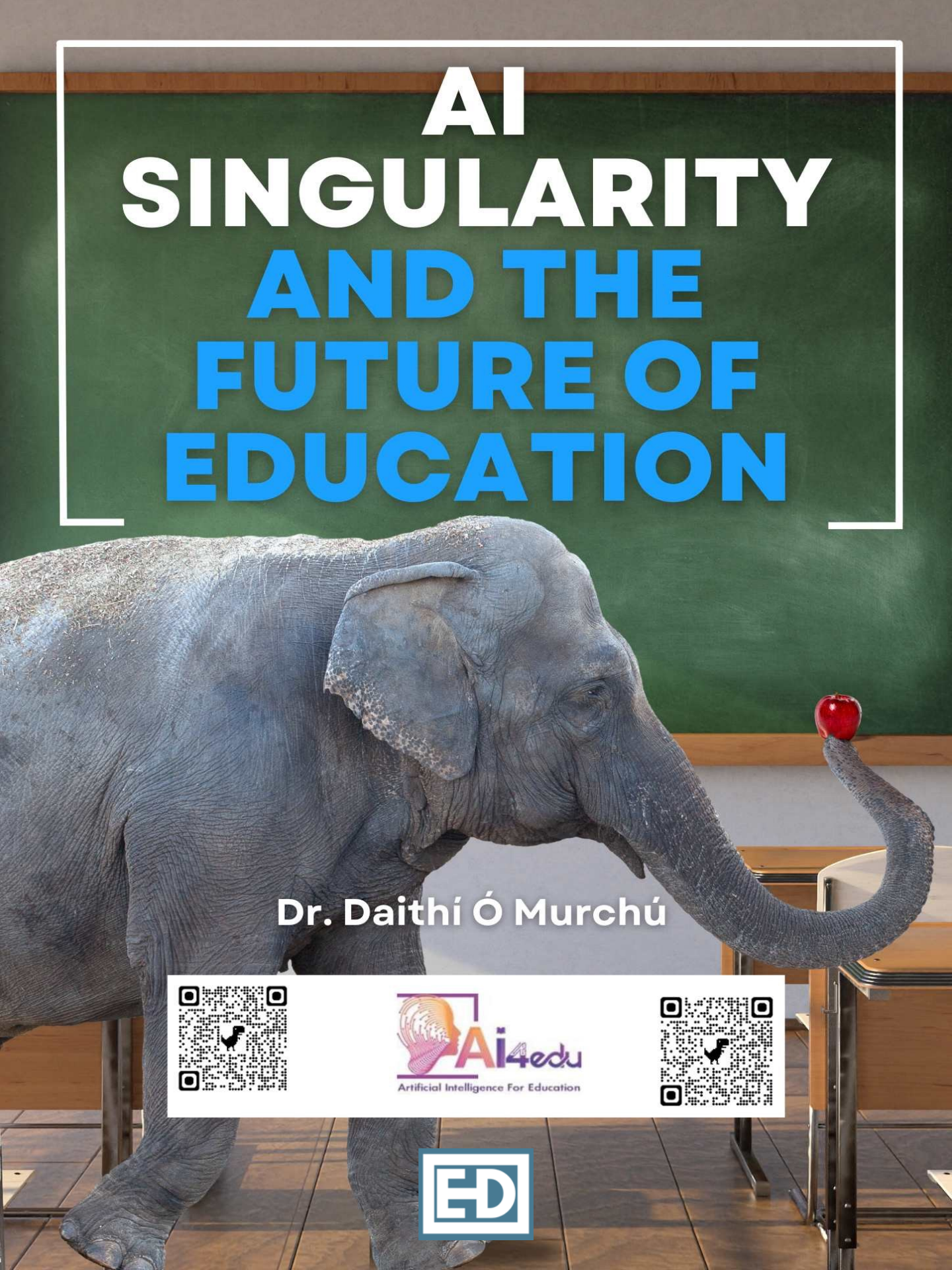
However, implementing esports in schools is not without challenges. Funding for equipment and infrastructure can be a major hurdle, and there are valid concerns about screen time and gaming addiction. According to Ireland Esports, the organisation which promotes esports across the island, it is important to remember that esports offer a variety of cognitive, self-esteem and social benefits when done in moderation.

The Future of Esports in Education

As esports continues to gain recognition in educational circles, its integration into curricula is likely to expand, we will undoubtedly see more dedicated esports courses, advanced facilities in schools, and even esports scholarships becoming commonplace in higher education.

For educators and school leaders looking to embrace this trend, staying informed and open-minded is key. Esports isn't just about games, it's about connecting with students, fostering their passions, and preparing them for a digital future. Join us in the next issue when we shift our focus to esports in education here in Ireland.

AI SINGULARITY AND THE FUTURE OF EDUCATION



Dr. Daithí Ó Murchú

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AI, SINGULARITY AND FUTURE OF EDUCATION

Navigating the New Frontier

Dr. Daithí Ó Murchú

Introduction

We stand at the precipice of a technological revolution that promises to redefine the very fabric of human existence. Artificial Intelligence (AI) and the looming spectre of technological singularity are not merely buzzwords; they are portents of a future that is rapidly becoming our present. Nowhere is this transformation more profound and far-reaching than in the realm of education.

As we peer into this brave new world, we must ask ourselves: How will AI and the potential singularity reshape the landscape of learning? What opportunities and challenges lie ahead? And most crucially, how can we harness these transformative forces to create an educational paradigm that is not only effective but also equitable, meaningful, mindful, soulful, empathetic, and deeply human?

This blog post, the first of ten, is an overview, and delves into these questions, exploring the intricate dance between AI, singularity, and education. My hope is that these blogs lead us on a journey into the uncharted waters of future learning, examining both the promise and the perils that await us. So, buckle up, for we are about to embark on an expedition that will challenge our preconceptions, and hopefully incite debate, and expand our horizons.

Understanding AI and Singularity

Before we can fully grasp the implications of AI and singularity on education, let us first explore and understand these concepts in their own right.

Artificial Intelligence and Machine Learning

Artificial Intelligence refers to the development of computer systems capable of performing tasks that typically require human intelligence. This includes visual perception, speech recognition, decision-making, and language translation. Machine Learning, a

subset of AI, focuses on the ability of systems to learn and improve from experience without being explicitly programmed.

In education, AI manifests in various forms: from intelligent tutoring systems that adapt to individual learning styles to automated grading systems that can process vast amounts of data in seconds. The potential of AI in education is not just to automate routine tasks, but to fundamentally transform how we teach and learn.

Technological Singularity

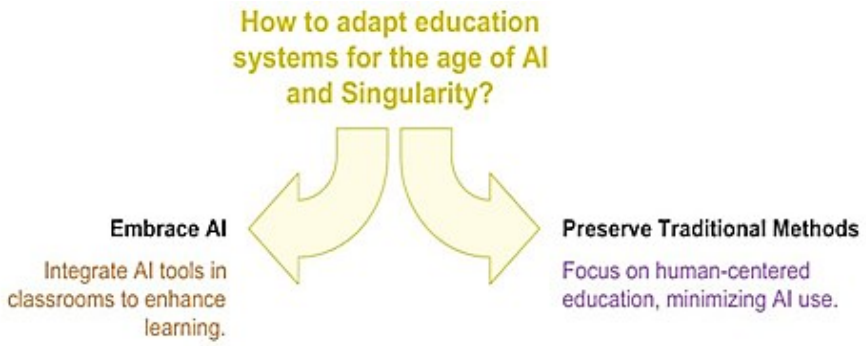
The concept of technological singularity, popularised by mathematician and science fiction author Vernor Vinge, refers to a hypothetical future point when artificial intelligence surpasses human intelligence, leading to runaway technological growth and unforeseeable changes in human civilization.

In the context of education, the singularity presents both tantalising possibilities and existential questions. Could we reach a point where knowledge transfer becomes instantaneous? What would learning look like in a post-singularity world? These are not mere thought experiments but potential futures for which we must prepare!

Current State of AI in Education

As of 2024, AI has already made significant inroads into education. Adaptive learning platforms use AI algorithms to personalise content for individual students. Natural language processing powers chatbots that provide 24/7 support to learners. Data analytics help administrators make informed decisions about resource allocation and student interventions.

However, we are still in the early stages of this revolution. The true potential of AI in education remains largely untapped, waiting for visionaries, disruptors and innovators to fully realise its capabilities.



The Changing Face of Education

As we venture further into the AI era, the educational landscape is undergoing a seismic shift. Let us explore the strengths and opportunities this brave new world offers, as well as the challenges and threats we must navigate.

Strengths and Opportunities

1. Personalised Learning at Scale

AI-driven adaptive learning systems are revolutionising how we approach individual student needs. These systems can analyse vast amounts of data on a student's learning patterns, preferences, and performance to create truly personalised learning experiences. Indeed these ‘systems’ are more and more evolving and becoming Personalise Intelligent Tutoring Systems (PITs).

Imagine a world where every student has a virtual tutor that understands their unique cognitive style, adapts in real-time to their progress and abilities, and equitably and culturally challenges them at just the right level and pace. This is not science fiction; it's the emerging promise of AI in education.

Moreover, AI can customise curriculum content, pacing, and assessment methods based on individual learning patterns (ILPs). This level of personalisation, previously impossible at scale, could dramatically improve learning outcomes and student engagement.

2. Enhanced Accessibility

AI has the potential to break down longstanding barriers in education. Geographical constraints become irrelevant in a world of AI-powered online learning platforms. Students in remote areas can access the same quality of education as those in urban centres.

For students with disabilities (those who are differently-abled), AI offers ground-breaking solutions. AI-powered tools can convert speech to text for hearing-impaired students, describe images for visually impaired learners, or provide alternative input methods for those with physical disabilities. The democratisation and humanology of education through AI could be some of the most significant social equalisers of our time.

3. Real-time Feedback and Assessment

The days of waiting weeks for graded examinations are becoming obsolete. AI systems can provide instant feedback on assignments, enabling and empowering students to learn from their mistakes immediately and iterate their understanding in real-time.

Moreover, AI can offer continuous evaluation, tracking a student's progress moment by moment, rather than relying on periodic high-stakes testing. This not only reduces stress on students but also provides a more accurate picture of their learning journey.

Perhaps most importantly, AI has the potential to reduce human bias in grading. By using objective criteria and vast datasets, AI systems can provide fair, equitable and consistent assessments, free from the unconscious biases that can affect human graders.

4. Advanced Simulations and Virtual Reality

The integration of AI with virtual and augmented reality technologies opens up unprecedented possibilities for immersive learning experiences. Students can explore historical events in VR, conduct dangerous scientific experiments in safe virtual environments, or practice complex medical procedures on AI/AR-powered simulations.

These technologies not only make learning more engaging but also provide practical, hands-on experience in fields where real-world practice might be too costly, dangerous, or simply impossible. The boundaries between theoretical knowledge and practical application blur, creating a more holistic learning experience.

5. Efficient Administrative Processes

Behind the scenes, AI is streamlining educational administration. Automated scheduling systems can optimise resource allocation, ensuring that classrooms, equipment, and instructors are utilised efficiently. Predictive analytics can identify students at risk of dropping out or falling behind, allowing for early interventions.

These efficiencies free up educators and administrators to focus on what matters most:

supporting meaningful and mindful student learning and

development. The time and resources saved through AI-driven administration can be reinvested into improving the quality of education.

Challenges and Threats

1. Digital Divide and Inequality

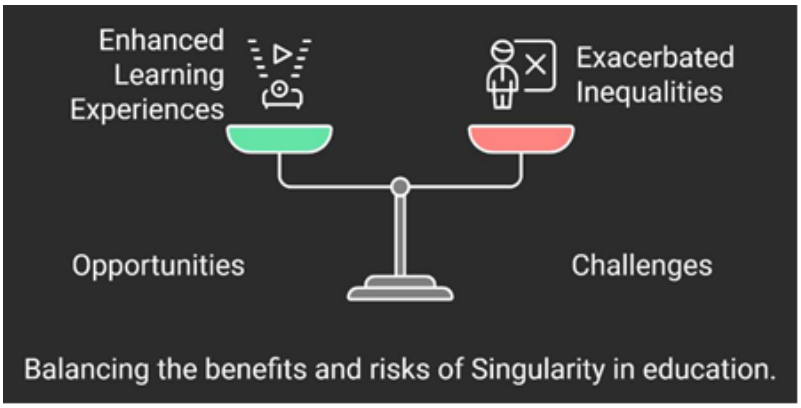
While AI has the potential to democratise education, it also risks exacerbating existing inequalities. The digital divide – the gap between those who have access to technology and those who don't – could widen educational disparities.

Students in affluent areas with access to cutting-edge AI educational tools may surge ahead, while those in underprivileged, disadvantaged or developing regions fall further behind. As we embrace AI in education, we must be vigilant in ensuring that these technologies are accessible to all, not just the privileged few.

2. Privacy and Data Security Concerns

The personalised learning promised by AI relies on vast amounts of student data. This raises serious concerns about privacy and data security. How do we protect sensitive information about students' learning patterns, cognitive abilities, and personal characteristics?

Moreover, there are ethical questions about the extent of data collection. Should AI systems be allowed to monitor students' emotional states or track their activities outside of formal learning environments? The balance between leveraging data for educational benefit and protecting individual privacy is a tightrope we must walk carefully.



3. Job Displacement in Education Sector

As AI systems become more sophisticated, they may displace certain roles within the education sector. Automated grading systems, AI tutors, and administrative AI could reduce the need for human employees in these areas.

However, this displacement is likely to be accompanied by the creation of new roles. Educators may need to evolve into facilitators, mentors, and AI supervisors. The challenge lies in managing this transition, ensuring that educators are prepared for their changing roles and that the human element in education is not lost. Indeed, continuous professional development (CPD) is critical for all educators and those working in the education sector.

4. Over-reliance on Technology

There's a risk of becoming overly dependent on AI systems in education. What happens if these systems fail? Moreover, there's the question of whether constant technological mediation might impair students' ability to think independently or interact face-to-face.

Maintaining a balance between leveraging AI and fostering crucial human skills like critical thinking, creativity, and interpersonal communication will be essential. We must use AI as a tool to enhance human capabilities, not replace them.

5. Ethical Considerations in AI Decision-making

AI systems make decisions based on the data they're trained on and the algorithms they use. This raises questions about transparency and fairness. How do we ensure that AI educational systems aren't perpetuating biases or making crucial decisions about students' futures based on opaque criteria?

There's also the broader question of how much decision-making power we're willing to cede to AI in education. Should an AI system be allowed to determine a student's educational path or career recommendations? These ethical dilemmas will require careful consideration and robust governance frameworks.

Ethical Aspects of AI in Education

As we navigate the integration of AI into education, ethical

considerations must be at the forefront of our minds. The decisions we make today will shape the learning landscape for generations to come.

1. Fairness and Equity

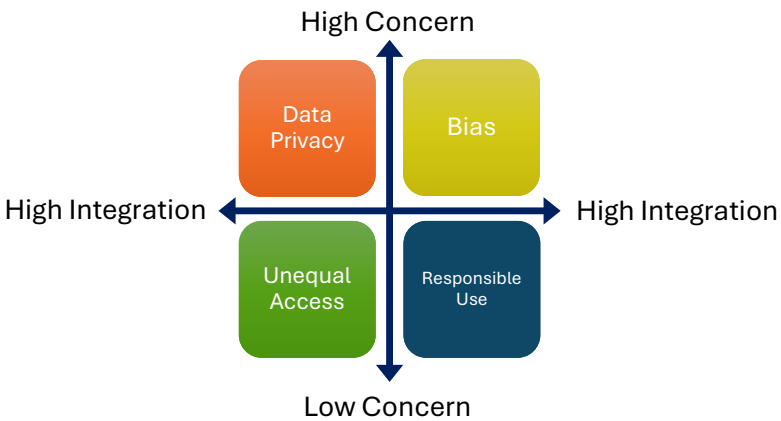
AI systems must be designed with fairness and equity as core principles. This means not only ensuring equal access to AI-driven educational tools but also scrutinising these tools for built-in biases that could disadvantage certain groups of students.

We must strive to create AI systems that recognise and celebrate diversity, adapting not just to individual learning styles but also to cultural differences and varied socioeconomic backgrounds. The goal should be to use AI as a great equaliser in education, not a tool that further entrenches existing inequalities.

2. Transparency and Explainability

The "black box" nature of many AI algorithms is particularly problematic in education, where the stakes are so high. We need to develop AI systems whose decision-making processes are transparent and explainable, not just to technologists but to educators, students, and parents. The “Black box” nature refers to the inability to trace the system's AI algorithm’s, thought process and see why decision were made.

This transparency is crucial for building trust in AI educational tools and for allowing meaningful and conscious human oversight. If an AI system recommends a particular learning path for a student, both the student and their teachers should be able to understand and question the reasoning behind this recommendation.



3. Privacy and Consent

As AI systems collect and analyse unprecedented amounts of data on students, we must establish robust frameworks for data protection and informed consent. Students and their guardians should have clear information about what data is being collected, how it's being used, and who has access to it.

Moreover, we need to consider the long-term implications of data collection in education. How long should this data be retained? Could information about a student's learning difficulties at a young age be used against them later in life? These are complex questions that require careful consideration and strong safeguards.

4. Human-AI Collaboration (HumAInology)

As we integrate AI into education, we must be mindful of maintaining the irreplaceable human element in learning. The warmth of a teacher's encouragement, the spark of inspiration from a passionate, empathetic lecturer, the social learning that happens among peers – these are aspects of education that AI should enhance, not replace.

We need to develop models of human-AI collaboration in education where the strengths of both are leveraged. This might involve AI handling personalised content delivery and assessment, freeing up human educators to focus on mentorship, emotional support, and fostering critical thinking and creativity.

5. Long-term Societal Impact

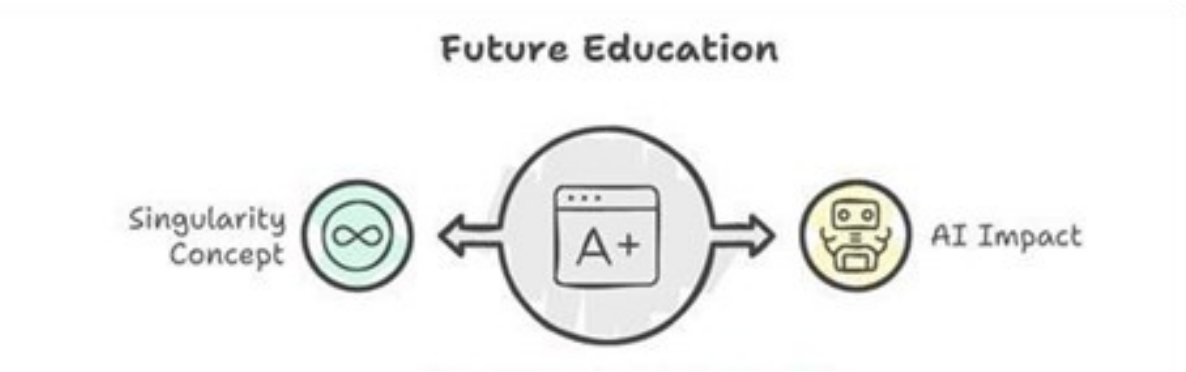
The decisions we make about AI in education today will have far-reaching consequences for society. We need to consider not just the immediate benefits and risks, but also the long-term implications of raising generations in AI-integrated learning environments.

How will this shape their worldviews, their problem-solving approaches, their very ways of thinking? How do we ensure that students develop the skills and adaptability needed for a rapidly changing, AI-driven world while still cultivating uniquely human qualities?

These are not just educational questions but societal ones that require input from diverse stakeholders – educators, technologists, ethicists, policy-makers, and the students themselves.

The Road to Singularity: Future Possibilities

As we peer further into the future, towards the possibility of technological singularity, the potential transformations in education become even more profound and speculative.



1. Brain-Computer Interfaces in Learning

Advances in neurotechnology and AI could lead to direct brain-computer interfaces that revolutionise the very concept of learning. Imagine the possibility of downloading knowledge directly into one's brain or sharing experiences and skills mind-to-mind.

While this technology could exponentially accelerate learning, it also raises profound ethical questions. How would this change our understanding of intelligence, skill, and personal growth? What are the implications for privacy when our very thoughts could be accessible to external systems?

2. AI Teachers and Mentors

As AI systems become more sophisticated, we might see the emergence of fully AI teachers and mentors. These wouldn't just be content delivery systems, but complex entities capable of forming relationships with students, understanding their emotional needs, and adapting their teaching styles accordingly.

This raises questions about the nature of the student-teacher relationship. Can an AI truly replace the role of a human mentor? How would this impact the social and emotional development of students?

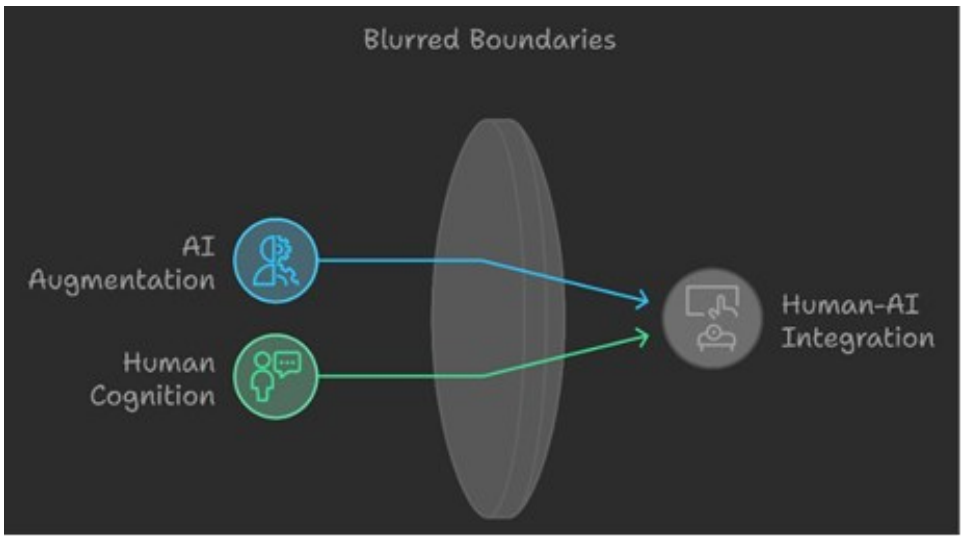
3. Global Knowledge Networks

The singularity could bring about a world where all human knowledge is instantly accessible through a global, AI-curated network. Education might shift from the acquisition of knowledge to the development of wisdom – learning how to navigate, interpret, and apply this vast ocean of information.

This scenario presents challenges related to information overload and verification. How do we teach discernment and critical thinking in a world of instant, ubiquitous information? How do we preserve the value of deep, focused study?

4. Augmented Human Intelligence

The line between human and artificial intelligence might blur, with AI augmentation becoming a standard part of human cognition. This could dramatically enhance our learning capabilities, allowing us to process and retain information at unprecedented rates.



However, this also raises questions about equity (who has access to these augmentations?), identity (how does AI augmentation change our sense of self?), and the very nature of human intelligence and creativity.

5. Post-Singularity Education Paradigms

Beyond the singularity lies a world that is difficult for us to imagine with our current frameworks. Education might evolve into something

entirely different, perhaps a continuous process of updating and expanding one's consciousness in a merged human-AI network.

In this scenario, how do we preserve human values and ethics? How do we ensure that education continues to serve the holistic development of individuals and societies, rather than becoming a purely utilitarian process of data and skill acquisition?

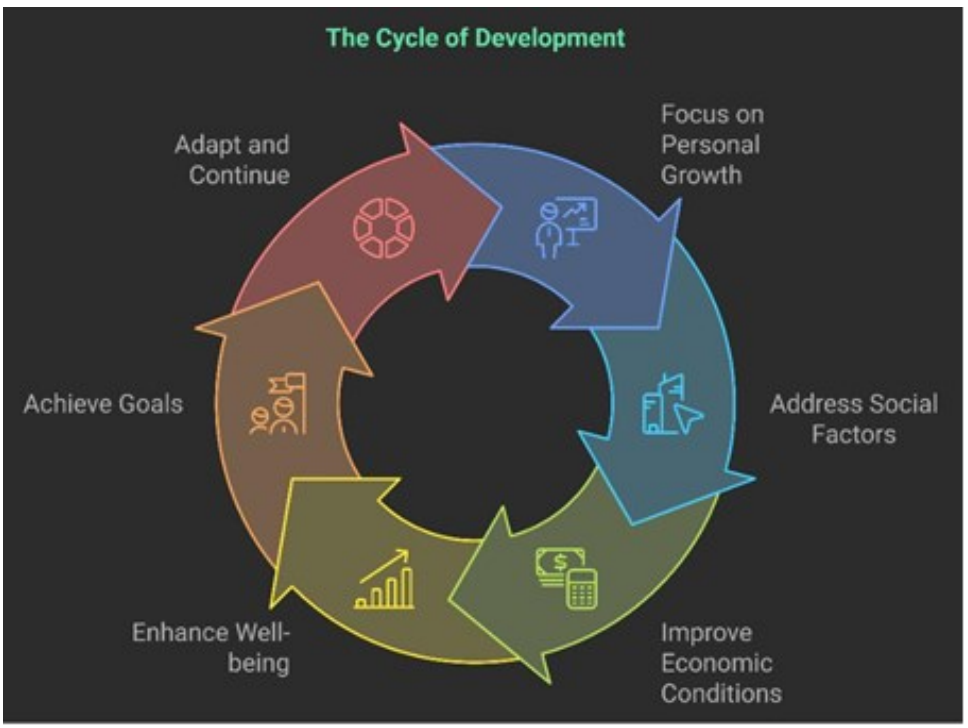
Preparing for the Future

As we stand on the rim of these transformative changes, how can we best prepare ourselves and our educational systems for AI Singularity?

1. Developing AI Literacy

Just as reading and writing became essential skills in the past, AI literacy and multi-literacies will be crucial in the future. We need to integrate AI education into curricula at all levels, ensuring that students understand not just how to use AI tools, but also their underlying principles, limitations, and ethical implications.

This AI literacy should go beyond technical knowledge to include critical and creative thinking about AI's role in society. Students should be equipped to question and shape the AI systems that will increasingly influence their lives.



2. Ethical Guidelines and Governance

We need robust, adaptable ethical guidelines and governance structures for AI in education. These should be developed through collaborative efforts involving educators, technologists, ethicists, policymakers, and students.

International cooperation will be crucial, as AI and its implications transcend national borders. We should strive for global standards that ensure the responsible and equitable use of AI in education while allowing for innovation and cultural adaptation.

3. Adaptive Skill Development

As AI takes over many routine cognitive tasks, education should focus on developing uniquely human skills that are harder to automate. These include creativity, emotional intelligence, consciousness, complex problem-solving, and adaptability.

Moreover, we need to instill a mindset of lifelong learning. In a world of rapid technological change, the ability to continuously learn and adapt will be more valuable than any fixed set of knowledge or skills.

4. Collaborative Human-AI Educational Models

We should start designing and implementing educational models that effectively leverage both human and AI strengths. This might involve AI handling personalised content delivery and assessment, while human educators focus on mentorship, fostering creativity, and helping students navigate complex ethical and social issues.

Crucially, we need to prepare educators for their evolving roles in this new landscape. This will require significant investment in teacher training and professional development.

Conclusion

The integration of AI and the approach of technological singularity present us with a future full of both thrilling possibilities and daunting challenges for education. We stand at a intersection, with the power to shape this future in ways that amplify the best aspects of human learning and development, that which I have referred to as HumAInology.

As we navigate this new frontier, we must remain committed to the core values of education: fostering curiosity, critical thinking, mindfulness, creativity, soulfulness, empathy, and compassion. We must ensure that in our embrace of AI, we don't lose sight of the deeply human nature of

meaningful, mindful and 'soulful' teaching, learning and growth.

The future of education in the age of AI and potential singularity is not predetermined. It will be shaped by the choices we make today – in research, in policy, in classrooms, and in our individual approaches to learning and teaching. As educators, students, policymakers, and global citizens, we all have a role to play in guiding this transformation.

It is my hope that this overview will provide enough 'Food for Thought' to engage and incite debate. Each one will delve deeper into the aforementioned areas and ask the hard questions as the AI Singularity, 'elephant-in-the-room' raises its trunk of disruption! Each Blog will present its own ELEPHANT at the end for your perusal and discussion.

Graphics : Thanks to : https://app.napkin.ai/ & https://deepai.org/

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BREAKING BARRIERS IN STEM

OVER 5,000 STUDENTS BENEFIT FROM INCLUSION INITIATIVE

Stem Passport for Inclusion

BREAKING BARRIERS IN STEM

Over 5,000 Students Benefit From Inclusion Initiative

At an event hosted in Microsoft Dream Space, Dublin, the results of the STEM Passport for Inclusion Report were unveiled by Microsoft Ireland and Maynooth University.

Spearheaded by Microsoft Ireland and Maynooth University, the initiative has focused on offering under-represented students, particularly girls, a supported pathway into STEM. It is co-funded by Microsoft Ireland and Research Ireland,

Since 2021, the Programme has expanded and has been rolled out to over 5,000 students across the four provinces of Ireland and according to the report, 79% of students participating in STEM Passport for Inclusion now considering applying to study STEM at third level, while 76% are now considering a career in STEM.

STEM Passport for Inclusion

The STEM Passport for Inclusion is a national initiative which provides girls who are in Transition Year with the opportunity to participate in a university-accredited qualification in STEM. The module, called Introduction to 21st century STEM skills, carries 5 credits at Level 6; it provides young women in DEIS schools with access to computer science skills, coding, design thinking and generic STEM skills. The qualification is currently accredited in three universities – Maynooth University, Munster Technological University and Atlantic Technological University. The young women also take part in a structured mentoring programme.

The STEM Passport qualification is part of a new initiative which provides DEIS students with an exciting new STEM Pathway; students who complete the module can receive 50 Leaving Cert points towards entry to specific STEM courses in Maynooth University and Munster Technological University. This initiative attempts to address the lack of diversity within STEM courses and careers; we aim to provide DEIS students with the opportunity to see their future in STEM courses and careers.

What is involved

STEM Passport for Inclusion students will attend three full days of education in an Industry Hub in their province. Students in Leinster will complete the module in Microsoft Dream Space, students in Munster will attend the RDI Hub in Killorglin, students in Connaught and Ulster will be taught in selected hubs in Belfast, Letterkenny, Sligo and Galway. The three full learning days start at 9am and finish at 4pm and involve experiential learning experiences based on the learning outcomes of the Level 6 programme; the students work through activities that aim to support in the development of key STEM competencies that are transferable across the STEM disciplines and many other areas of study and work such as computational thinking, empathy, data analysis, collaboration, communication, coding, and AI literacy. Students are expected to complete assignments and engage with remote learning activities to reach the required outcomes for the qualification. The students are fully registered students of the university and have full access to student resources.

Impact Report

Maynooth University, in partnership with Microsoft Ireland, Taighde Éireann – Research Ireland and the Department of Education, has published the STEM Passport for Inclusion Impact Report (November 2024) which reveals that over 5,000 students from disadvantaged backgrounds have participated in the initiative to date. Notably, 76% of these students are now considering a career in STEM.

The All-Ireland STEM Passport for Inclusion programme is a joint initiative by Maynooth University, Microsoft Ireland, Research Ireland and the Department of Education that addresses inequalities with access to STEM careers among post-primary school students in socially disadvantaged communities. Initially developed as a pilot in 2021, the programme was expanded nationwide in December 2023.

Dr Ruth Freeman, Director of Research for Society at Research Ireland welcomed the report, saying: "We are delighted to continue our support of this wonderfully successful initiative through our Discover Programme. Research Ireland is committed to empowering women from all backgrounds to access vital routes to STEM careers. I'm so excited to see how these students will contribute and thrive as STEM professionals in the future."

The programme's innovative approach, which combines a recognised qualification (Level 6 NFQ), education supports, and mentoring from industry role models, provides a unique pathway for female students to progress to third level education and achieve a STEM qualification.

Since its launch, over 5,370 female students from DEIS schools in all four provinces have been engaged, with 50% of participants from rural areas. As part of the programme 1,100 industry mentors have delivered 2,524 mentoring hours. The outcome has been that students from 117 DEIS schools have been empowered to graduate with a university accredited STEM qualification while still in post-primary school.

A survey of programme participants revealed that STEM Passport for Inclusion has positively changed students' view of STEM with 79% now considering applying to study STEM at third level while 76% are considering a career in STEM.

The programme has also increased students' knowledge of, and familiarity with, STEM. Only 45% of students reported knowing what STEM was before participating in the programme. This increased to 95% once students completed the programme.

STEM Passport for Inclusion graduate, Ava Kenny is now a third-year science student at Maynooth University. Commenting on her participation in the programme, Ava said: "Before taking part in the STEM Passport for Inclusion I was unsure if I wanted to pursue a college education, let alone pursue a career in STEM. The realm of science seemed distant and unfamiliar to me, and I didn't know of anyone working in STEM. From my first day in the programme, I was captivated by the many doors a career in STEM could open for me.

"The STEM Passport for Inclusion guided my path into third level education as I am now studying science at Maynooth University. As I move on to the next stage of my life, I am excited about the prospect of a career in STEM and I know that the lessons I learned throughout the programme will stand to me."

This has helped to reduce the STEM confidence gap between girls in DEIS and non-DEIS schools. Previously, only 3 in 10 girls from DEIS schools were confident they could study STEM in the future while close to 6 in 10 girls from non-DEIS were confident. Once girls took part in STEM Passport for Inclusion, the STEM confidence gap between girls in DEIS and non-DEIS schools was all but eliminated.

While the report details the significant impact of the programme to date, it also includes several informed recommendations to further STEM engagement and the impact of the programme across Ireland.

STEM Impact Recommendations

- *Expand the Programme Across All DEIS Schools: Secure funding to implement the programme in every DEIS school in Ireland - ensure nationwide access to STEM education for disadvantaged students.*

- Provide Necessary Resources to DEIS Schools: Many schools lacked the resources to fully participate in the programme. Supplying these institutions with loaned technology, mobile lab kits, and internet support would help bridge this resource gap.

- Introduce Funded STEM Work Experience Programmes: Partner with industry to provide work experiences to enhance real-world learning and skill development. This initiative would be particularly valuable for DEIS students, who often lack exposure to STEM career pathways.

- Fund Longitudinal Research on Programme Impact: Invest in further comprehensive research so stakeholders can gain insights into long-term outcomes, enabling data-driven improvements and enhancing the programme's sustainability.

The National Skills Strategy identified a need to increase STEM participation to develop the talent and skills that are needed for the future of work. Despite female students accounting for more than half of third-level students, they only make up 35% of STEM students. Moreover, fewer than one in ten graduates in STEM fields are from socioeconomically disadvantaged backgrounds. STEM Passport for Inclusion seeks to address this by ensuring that every student, regardless of background, leaves school STEM prepared.

Microsoft is the STEM Passport for Inclusion's lead industry partner, having contributed €600,000 in match funding to date. In addition, Microsoft's Dream Space education team co-designed the Level 6-accredited (NFQ) STEM Passport module and has supported the delivery of the STEM Passport curriculum to participating students in Dream Space venues in both Dublin and Belfast. More than 300 of Microsoft's employees are actively supporting the STEM Passport for Inclusion mentoring programme, alongside other educators and representatives from over 180 private and public sector organisations.

Speaking about Microsoft Ireland's role in the initiative, James O'Connor, Microsoft Ireland Site Leader and Corporate Vice President Microsoft Global Operations Service Centre, said: *"Microsoft Ireland has been involved in STEM Passport for Inclusion since its inception three years ago and we're extremely proud of the role that the Microsoft Dream Space team has played in the co-design and delivery of the programme. In recent years, mass digitalisation and the era of AI have transformed professional expectations and elevated the importance of the next generation engaging in STEM and AI and pursuing a career in the technology sector. We're proud of the impact the initiative has had to date and look forward to working with the team at Maynooth University to continue to drive it forward and reach even more students."*

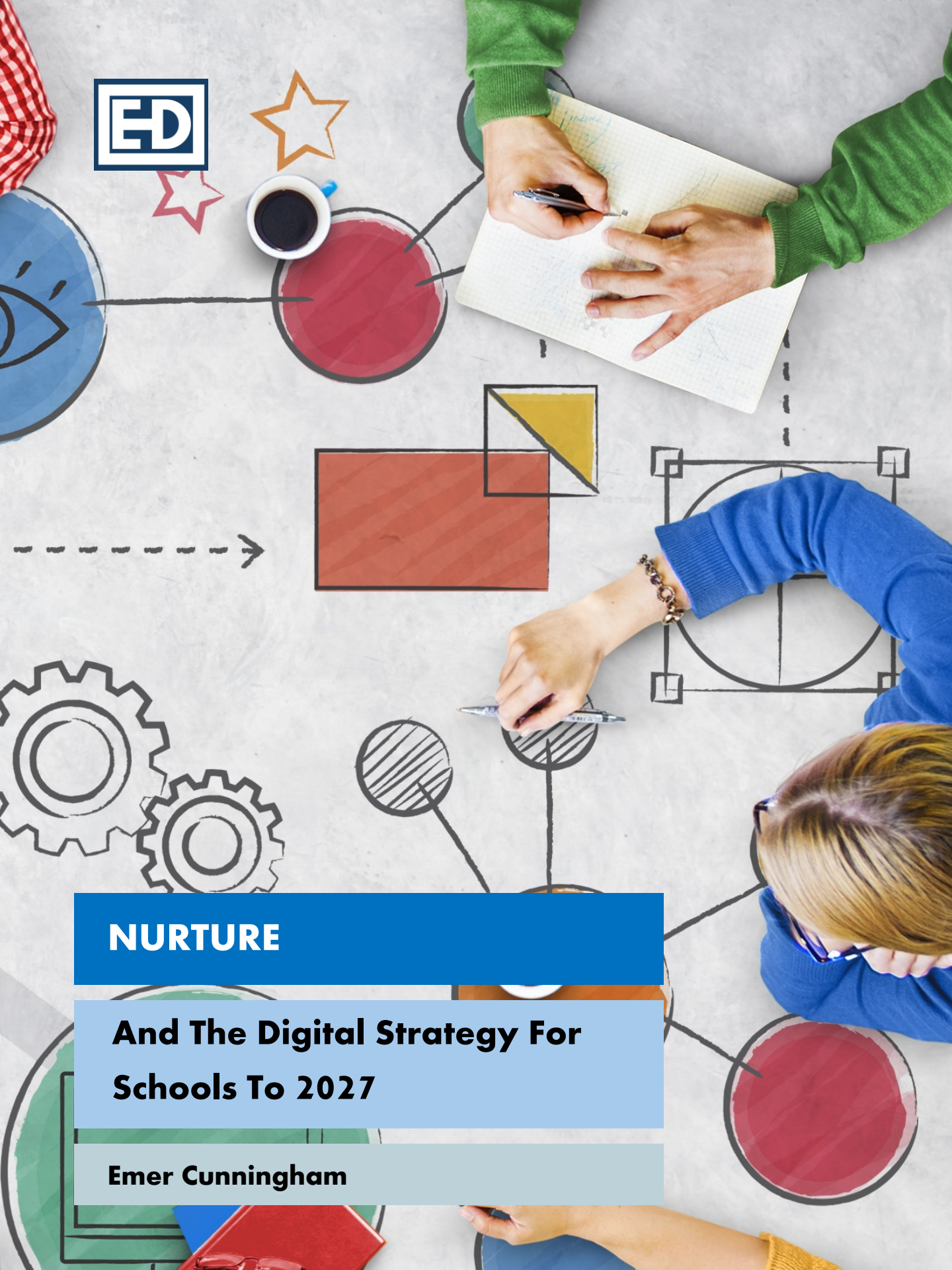
Speaking about her involvement in the initiative and the success of the programme so far, Dr. Katriona O'Sullivan, Digital Skills Lecturer at Maynooth University, said:

"The publication of today's report represents a milestone in the STEM Passport for Inclusion programme. Since its establishment, I have been lucky to see girls complete the programme with a renewed outlook on their potential and their thoughts about themselves have been transformed by the STEM Passport for Inclusion.

When building out this initiative, we at Maynooth University set out to develop an evidence based, system solution, to address the underrepresentation of diverse women and girls in STEM. The success of the programme is evidenced by the roll out of the programme to over 5000 girls so far.

We have been fortunate to receive support from our partners at Microsoft Ireland and Research Ireland throughout this journey. Looking forward, we are excited to work alongside third level colleagues around Ireland as the STEM Passport for Inclusion's reach expands. With the support of philanthropy and our partners, we are expanding the project from 2025-2027, furthering the program's positive impact."

More details on the programme can be found at: STEM Passport for Inclusion | Maynooth University.



NURTURE

And The Digital Strategy For Schools To 2027

Emer Cunningham

NURTURE

And The Digital Strategy For Schools To 2027

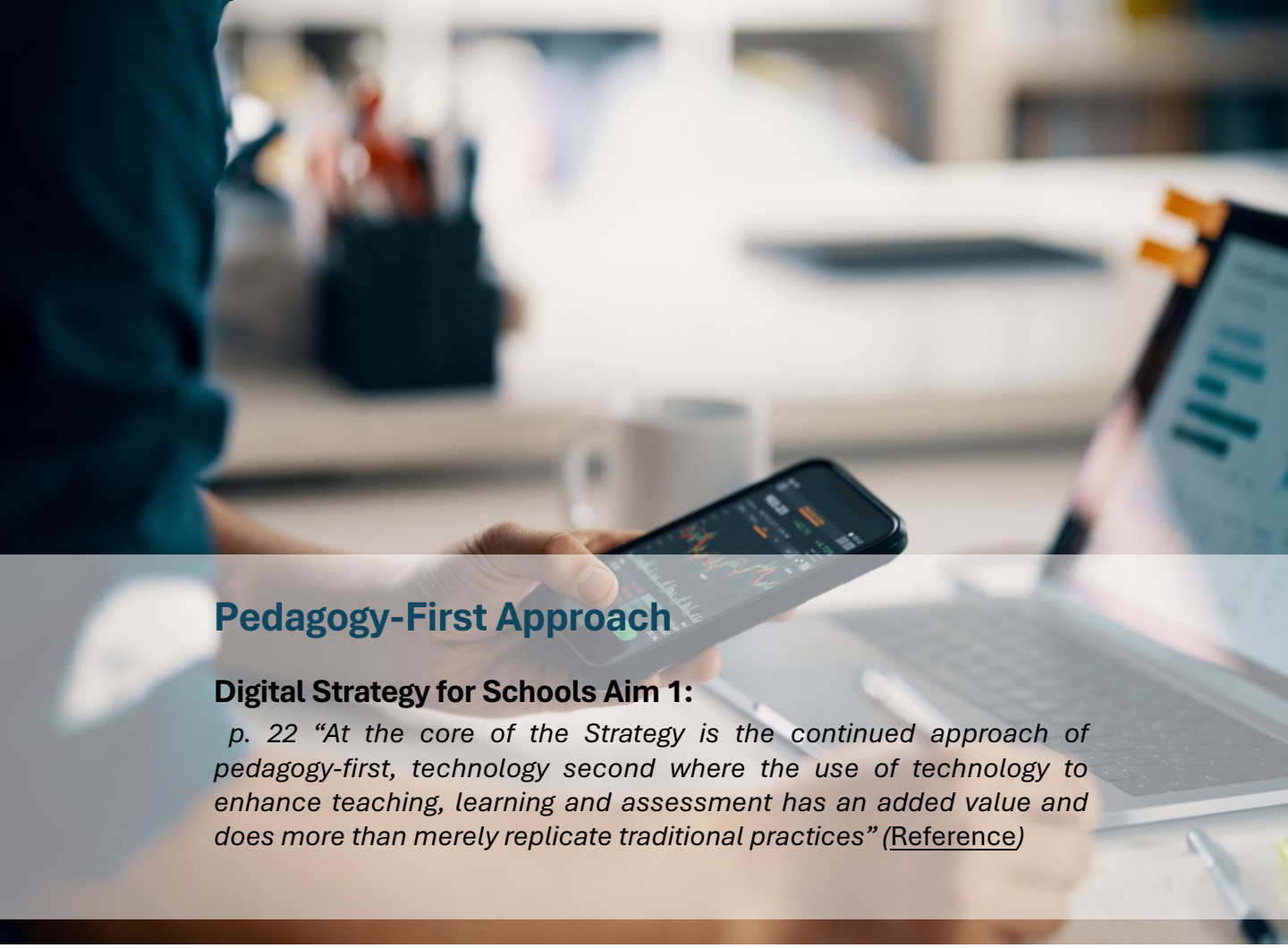
Emer Cunningham

The modern world has swiftly become an ever-evolving space of technological change, particularly in the age of Artificial Intelligence (A.I.). Resultingly, technology has become an integral part of the education system, both now and for the future. With the increasing reliance on digital tools and resources, it is vital for schools to invest time in a measured digital strategy based on their individual needs and context. The 'Digital Strategy for Schools to 2027' outlines the aims for technology-enhanced education in Ireland and prioritises the appropriate integration of technology into schools to improve outcomes and opportunities for students. However, as all teachers will be aware, the integration of technology can be difficult to manage along with planning and preparation, assessments and corrections, supervision and extra-curricular commitments and the myriad of other responsibilities that fall at the hands of our educators.

What is Nurture?

Nurture is a digital feedback and formative assessment software born out of pedagogical research in Ireland. Nurture aims to improve outcomes for students without adding further burdens and responsibilities to teachers. Nurture teachers have commented that their favourite aspect of Nurture is ***"the time-saving and the fact that students can access their feedback anytime to see what they can work on"*** (Teacher, CBS Synge Street).

Without doubt, Nurture is aligned with the Digital Strategy for Schools to 2027 as outlined by then Minister for Education Norma Foley and her department.



Pedagogy-First Approach

Digital Strategy for Schools Aim 1:

*p. 22 "At the core of the Strategy is the continued approach of pedagogy-first, technology second where the use of technology to enhance teaching, learning and assessment has an added value and does more than merely replicate traditional practices" (*Reference*)*

Nurture supports the fostering and development of critical competence, engagement and active learning by embedding pedagogy into the digital assessment flow, guiding students in the skill of self-reflection and self-assessment. This is aligned with the principles of Dr. Reuben Puentedura's SAMR (Substitution, Augmentation, Modification and Redefinition) model. This model places emphasis on the transformation of learning by redefining learning tasks and activities with technology as opposed to simply substituting them with technology.

Nurture's focus on formative assessment and personalised feedback supports the goals of the Digital Strategy by promoting critical thinking, collaboration and personalised learning experiences for students. In the words of one of our lead teachers, ***"Nurture already fit into the way we were marking, it was just packaged up in a technological, more streamlined way"*** (Teacher, Shireland Collegiate Academy, UK).

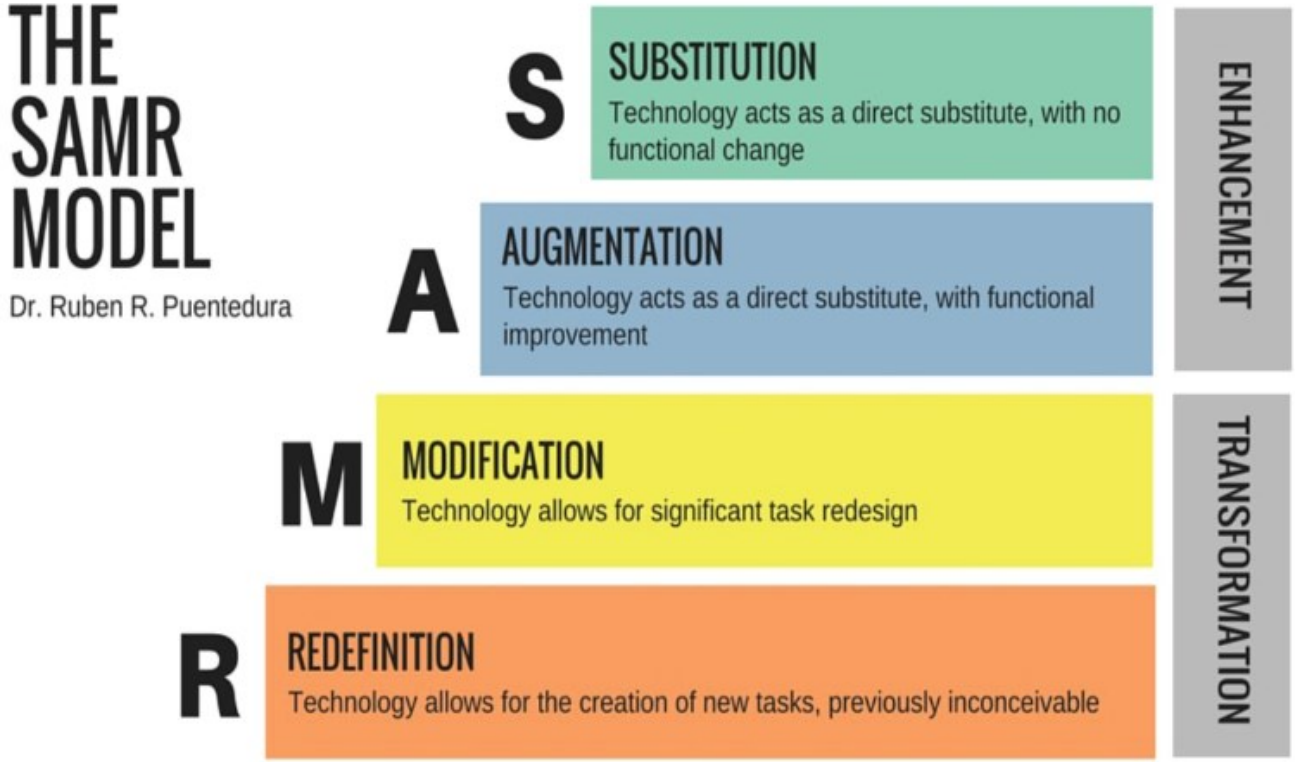


Image: SAMR Model, Dr. Ruben Puentedura

Further pedagogical research that has informed Nurture's software is the work of Black and Williams (2006) and their investigation into the link between assessment, feedback, learning and student achievement. This research heavily informs the structure of Nurture as feedback is delivered according to the following principles as outlined by Black and Williams:

1. Ensuring the feedback clearly aligns with the intended goals/ learning outcomes/ success criteria
2. 2. Providing feedback on the process rather than the outcome
3. 3. Providing information on where to go next.

Nurture certainly has a strong pedagogical foundation, it simply uses technology to streamline such processes, making for more effective feedback for teachers and improving students' ability to receive and reflect on feedback.

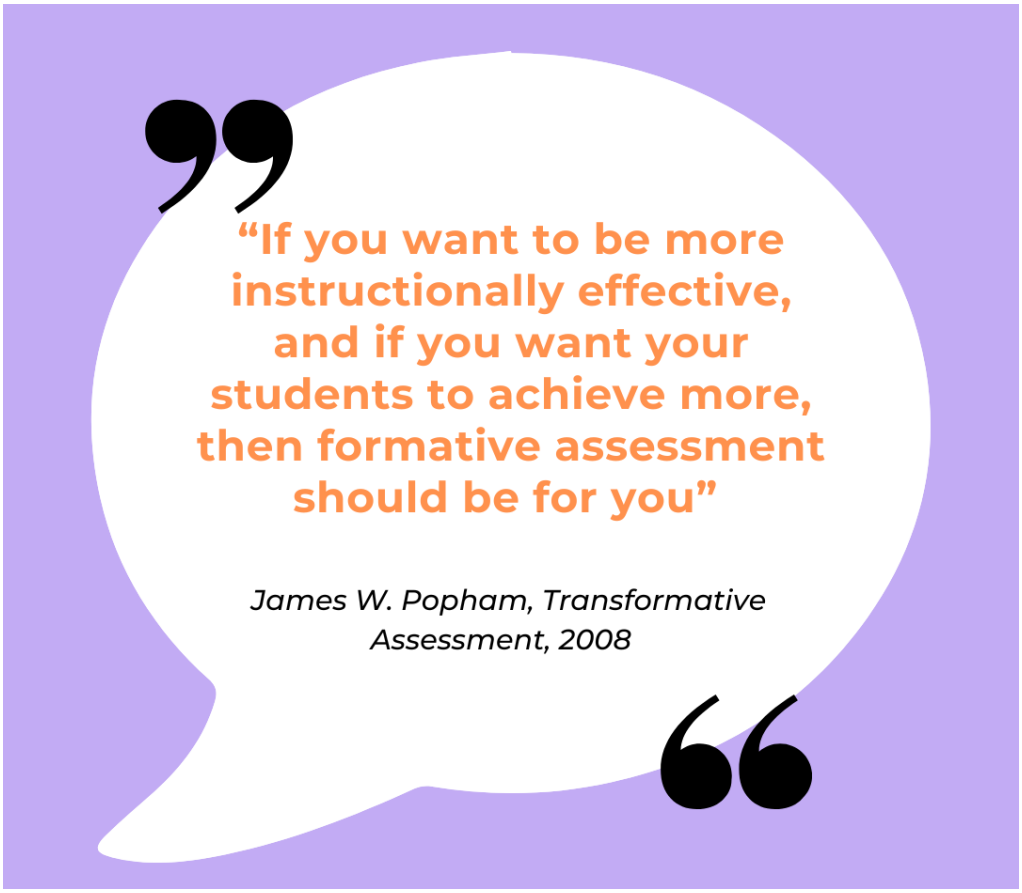
Formative Assessment and Feedback

Digital Strategy for Schools Aim 2:

> *p. 40 "The use of digital technologies and online platforms to support ongoing and formative assessment, in particular where technology can allow for more specific and immediate feedback" (Reference)*

Student attainment and engagement is at the crux of Nurture's philosophy of learning; formative assessment and feedback are the vehicles we use to reach attainment. According to James Popham, ***"formative assessment represents evidence-based instructional decision-making. If you want to be more instructionally effective, and if you want your students to achieve more, then formative assessment should be for you"*** (Reference).

Furthermore, Nurture understands that ***"the most powerful single moderator that enhances student achievement is feedback. The simplest prescription for improving education must be dollops***



of feedback" (John Hattie, Influences on Student Learning). In the knowledge that formative assessment and feedback are the best pedagogical tools to improve student outcomes, Nurture streamlines this process for teachers and students using the digital platform, Microsoft Teams.

Nurture understands that teachers have always used the tools of formative assessment and feedback in their teaching- our software allows teachers to enhance their existing practices using technology that is research-driven and pedagogically sound.

To put this into context, you are a teacher dedicated to feedback and spend extra time delivering high quality feedback on student assessments, and you'd love to be able to follow the Hattie and Timperley model of feedback and create formative assessments that place an emphasis on curricular learning outcomes. You spend hours each week in the photocopier room printing feedback sheets for you and your students to fill out. Your students receive their feedback and dissuaded by their grade, throw the assessment in the bin.

You can't say with confidence that your hard work has made a difference and, what's worse, there's no record of your hard work. In this instance, Nurture is the solution as it digitally streamlines this process and forces the student to reflect on their work to unlock their grade. This process therefore saves you time, increases your students' engagement and makes the formative assessment and feedback process more convenient, effective and easier to reflect on as all assessments are stored digitally.

Personalised Learning Experiences

Digital Strategy for Schools Aim 3:

> *p. 23 "It is important that learners are encouraged to understand how they learn so that they can control of their own learning and develop their skills further" (Reference)*

One of the fundamental objectives of the Digital Strategy for Schools to 2027 is the importance of personalised learning experiences. Similarly, one of the fundamental objectives of Nurture is to close the feedback loop between students, teachers and students' actions going forward. We are dedicated to making the process of feedback a more

streamlined and effective process for teachers and learners.

As previously referenced, there has been extensive pedagogical research detailing the importance of personalised feedback on student achievement and, by default, the evolution of the self-directed learner.

The structure of Nurture's feedback, as previously mentioned, allows schools to achieve digital transformation based on research-proven methods of delivering feedback as this level of detailed personalised feedback would not be feasible without Nurture.

In the words of a teacher who uses Nurture on a daily basis, ***"It puts the onus on the students to consider what they did well. I could not believe the time it saved me in school reports especially"*** (Teacher, CBS Synge Street).

Supporting All Learners

Digital Strategy for Schools Aim 4:

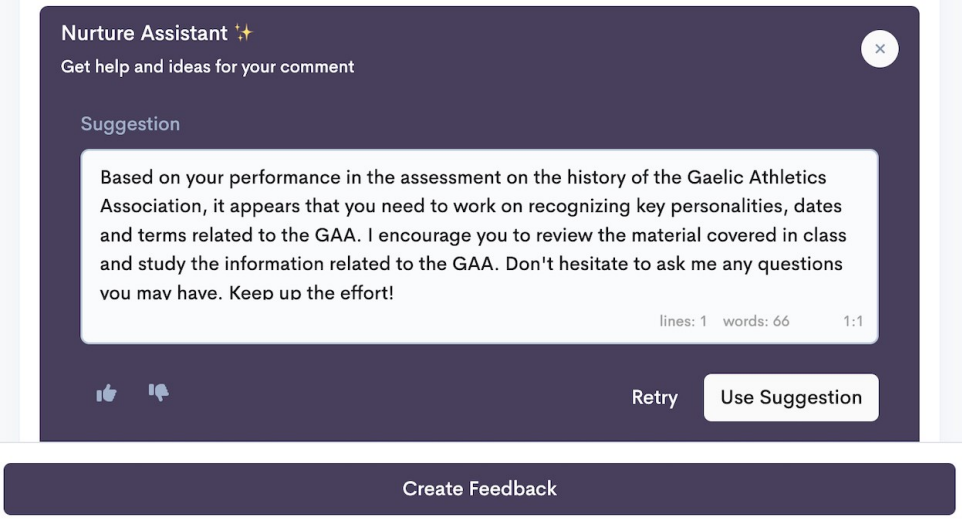
> *p. 23 "Effective use of technology in the classroom and across the school environment supports inclusion, promotes accessibility and participation and can help to personalise the learning process for all learners, leading to better engagement and the ability to be more involved and self-directed in their own learning" (Reference)*

Imagine you are a student who struggles with dyslexia or a similar learning difficulty and have just completed an assignment in Senior Cycle English.

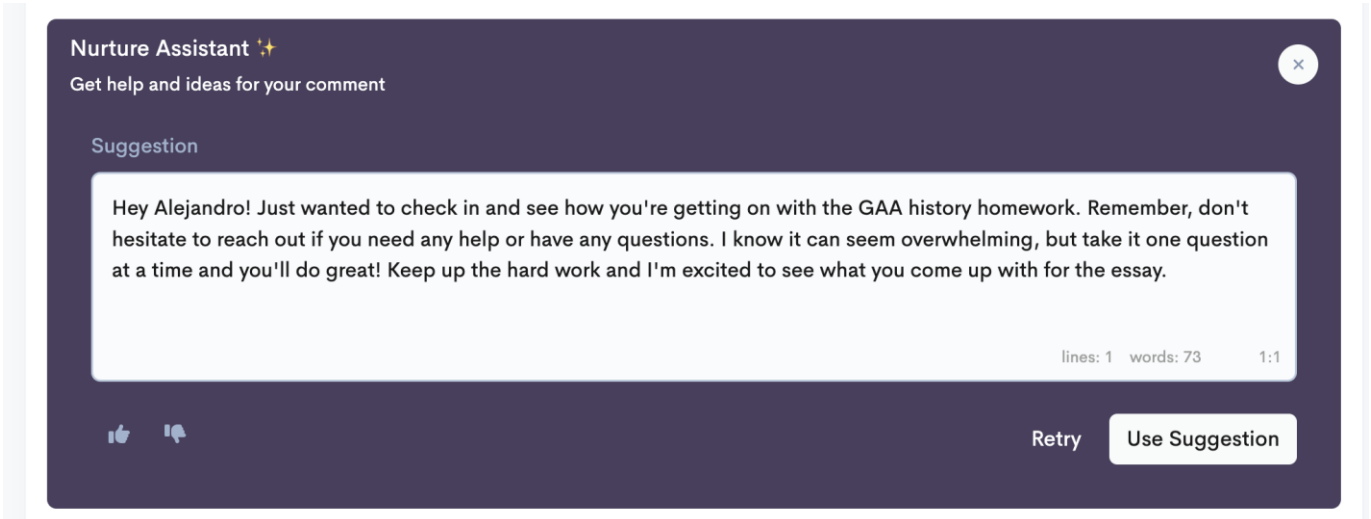
You've tried your best in this assignment but found the formatting difficult and struggled to write in a formal register. You receive your assignment back and you stare at the grade: 24%. The feedback reads, '***This grade suggests you need to move to Ordinary Level'***. Disappointed with your grade and disheartened at this comment, you throw the assignment in the bin.

This exact situation is the type of scenario we at Nurture strive to avoid, and unfortunately such situations can be a reality for students.

Our feedback focuses on the process rather than the outcome to guide students in improving their work and our AI generated comments maintain an encouraging and positive tone to encourage student engagement and motivation. Typically, as seen in the above scenario, students consider their grade first and may dissociate from any reflection or goal-setting due to disappointment in their achievement.



Nurture fosters a cohort of students who can reflect on their knowledge, skills and attitudes towards an assessment and set meaningful goals as a result of their reflection. In this way, Nurture facilitates and encourages students of all abilities in a digital environment, allowing teachers to seamlessly and conveniently differentiate teaching and learning that has positive impacts for every student of every level.



Conclusion

The Digital Strategy for Schools to 2027 is an ambitious document that aims to guide schools in their efforts towards increased digital integration. In the vibrant, diverse and evolving world of technology-enhanced learning, it can be difficult for schools to maintain a Digital Strategy that answers to the needs of their teachers, students and the wider school community.

The Strategy highlights the need for a pedagogy-first approach to digital integration in teaching, learning and assessment, a focus on the value of integrating technology into formative assessment and feedback, the importance of creating and facilitating personalised learning experiences for all learners, a vision for using technology to appropriately differentiate the curriculum for students with a variety of learning needs and a number of other key aims.

In this regard, Nurture is strongly aligned with the Digital Strategy for Schools to 2027, sharing many of the same philosophies and certainly the same vision for the bright future of technology-enhanced learning in education.

WHY EVIDENCE OF IMPACT MATTERS

A Double Return for Financial and Educational Success

Prof. Natalia Kucirkova

WHY EVIDENCE OF IMPACT MATTERS

A Double Return for Financial and Educational Success

Prof. Natalia Kucirkova, University of Stavanger & Co-Founder of the International Centre for EdTech Impact

> *In the fast-growing edtech sector, companies are under immense pressure to scale their products quickly and reach as many users as possible. However, without solid, independent evidence showing how their tools actually improve learning outcomes, they risk losing credibility and missing the mark on truly benefiting students. This is where partnering with researchers becomes not just important, but essential.*

The Importance of Evidence in EdTech

For startup companies, the challenge is clear: scale and access often take priority over proving effectiveness. Yet, in today's competitive and high-stakes education market, relying on assumptions or anecdotal evidence won't cut it. Decision-makers—whether they're schools, governments, or parents—demand proof that a product works before investing in it. By collaborating with researchers, companies can provide that proof and ensure their tools genuinely improve student learning outcomes.

Scaling EdTech with Credibility

It is a known secret in the field that even well-established edtech companies—those at the Series C stage and beyond—are often missing the evidence they need to validate their impact. But with the teacher shortage, post-COVID funding stops and global learning crisis, there is a renewed pressure on all actors of the EdTech ecosystem to demonstrate that every dollar and minute spent with EdTech are well spent. By working with researchers to conduct rigorous evaluations, companies can better refine their products, expand their reach, and build a reputation for delivering results.

The Need for Rigorous Evaluations

Against this backdrop, we at the International Centre for EdTech Impact ("WiKIT") work to support academia-industry partnerships that elevate the scientific rigor of edtech products. The Centre connects companies with researchers who bring deep expertise in

education, learning sciences, and impact measurement. By doing so, we can ensure that products aren't just scalable but are validated through empirical testing that demonstrates their real-world impact on learning. Our goal is to enable all edtech companies to embed independent, evidence-driven insights into their product development process.

One trend we observed in our work with VCs and impact investors, is the appetite for shared benchmarks around what we mean by "impact" and "evidence". Several groups and global agencies are working toward standardizing the evidence required for edtech products. In just a few years, the goal is to create a universal benchmark for what constitutes credible evidence of impact in edtech. With this consensus, companies will not only be able to validate their products across multiple international markets but will also be able to predict which solutions work best for different learners in various contexts. This shift will be game-changing, allowing edtech companies to generate and leverage evidence to build smarter, more effective tools for education.

The ICEIE Certification Advantage

One of the initiatives that our researchers are involved in is the work happening under our sister organisation, Eduevidence.org. Here, the International Certification of Evidence of Impact in Education is quickly gaining traction. Companies that receive the ICEIE certification show that they meet high standards of evidence, helping them stand out in a crowded market. As policymakers and educators increasingly demand scientific backing for the tools they adopt, being ICEIE-certified will become a critical asset for edtech companies aiming for global recognition and trust.

Prioritising Evidence-Based Validation

My recommendation to all edtech companies is to prioritise the importance of independent, evidence-based validation of their products. By partnering with researchers, companies can ensure their solutions are proven to make a measurable and independent impact on student learning. With growing pressure from stakeholders to demonstrate efficacy, collaborating with experts to build and share evidence is not just an option—it's a business imperative. In the end, the companies that prioritize evidence will be the ones that lead the way in shaping the future of education.

IRISH EDTECH SOLUTIONS

For Primary and Second Level

EdTech Ireland Network

IRISH EDTECH SOLUTIONS FOR PRIMARY AND SECOND LEVEL

EdTech Ireland

Ireland's educational technology sector is undergoing a significant transformation, propelled by innovative companies that are merging the nation's tradition of educational excellence with cutting-edge technology.

Across classrooms nationwide, teachers are embracing powerful new tools designed to enhance student engagement and improve learning outcomes. World-class homegrown solutions, ranging from AI-powered personalized learning platforms to immersive digital content, are revolutionizing traditional teaching methods.

Homegrown EdTech Solutions

As the Irish edtech industry continues to grow, educators and developers find themselves at the vanguard of a digital revolution that is gaining international recognition and reshaping contemporary educational practices.

In this the second of several features which focus on the EdTech Ireland Network members, we look at the indigenous edtech companies that are building innovative tech solutions for Primary and Second-Level education.

Bool Technologies

Bool Technologies specialises in providing IT solutions for education around attendance and school admin, focusing on seamless integration and development to enhance user experiences.

Bool's Anseo suite of products has been designed and developed

specifically for Irish secondary schools. Since 2000, through partnership with schools and colleges the system has continually evolved to ensure easy integration into school life and systems already deployed.

According to CEO, Joe Hayes, "*We believe that trusting students to share responsibility for their own attendance recording will improve student's individual roll book records while preparing their mindset for college and later, their professional careers*."

How it Works

- **Record**
  - ✓ Each Student registers their attendance on entry by scanning their ID card
  - ✓ Data instantly available in Anseo and synced to School MIS
  - ✓ Scan out with reason. e.g. Medical Appointment, Home Sick, School Activity
- **Collaborate**
  - ✓ Set up accounts for Year Head, Tutor or Teachers
  - ✓ Automatically store attendance records on school's MIS
- **Communicate**
  - ✓ Text Message to Parents. Automatic if required
  - ✓ Send messages to ancillary groups (Teaching Staff, Sports team, BOM etc.)
  - ✓ End of Term report card on attendance
- **Analyse**
  - ✓ Top Attending, Top Absentees, Most Lates
  - ✓ Compare by Class, Year, Day of Week School MIS
  - ✓ Identify Students requiring intervention.
  - ✓ Set Policies for weekly, monthly or annual levels for attendance, absenteeism or punctuality

Recent enhancements include attendance recording via mobile App, allows students to be able to register their attendance with their mobile phones; Parent entry of absence notes and Permission to Leave Early provides parents with a text message with a link to enter either a reason for absence or input a request and reason for a student to leave school early. Mobile Card Readers ensures that attendance can be recorded through a mobile device freeing up school space for attendance recording and allowing the roll to be checked throughout the school.

Athena Analytics

Athena Analytics, used by over 400 schools, is an award-winning EdTech company offering academic tracking solutions to secondary schools in Ireland. Founded in Co. Kerry by data scientist Emily Brick, Athena Analytics was inspired by her experience in Australia's Department of Education, where schools analysed exam results to help students improve and reach their potential.

The Athena Tracker, uses machine learning to identify a student's baseline potential for each subject, based on their own unique capabilities. The Athena Fitness Mark is an intelligent fitness tracking built specifically for students. Athena Reports provides schools with in-depth reports of their Junior and Leaving Certificate results.

According to Elaine Kelly, Deputy Principal, Mount Anville Secondary School, Dublin:

> *"Our subject teachers, guidance teachers and senior management team have found Athena's evaluation and reporting concise and insightful, their analysis has informed many aspects of school planning and curriculum development."*

Flúirse Education Solutions

Flúirse, founded in Tralee in July 2005 by Kristian O'Donovan and Tomás Finneran, is an award-winning company specializing in learning and training for the education sector. They have training centres in Kerry, Cork, Waterford, Wexford, Laois, Carlow, Wicklow, and Ennis, Clare.

Fluirse Education Solutions consists of several distinct divisions:

- ✓ Firstly, the company operates a successful CPD eLearning division, providing online courses to over 20,000 unique users annually across the globe.
- ✓ Fluirse is closely associated with the Irish education sector and is the largest provider of online training for primary school teachers.
- ✓ Additionally, the company manages eight training centres that offer a variety of Pitman Training and professional courses to adults.

Flúirse's vision is to become the name synonymous with Information and Communications Technology (ICT) in education and training in Ireland, the UK and beyond.

Flúirse Education Solutions has consistently been recognised for its exceptional products and innovative training delivery methods. The company holds numerous accreditations and has received several awards, including *Provider of Training Excellence* accreditation from the Continuing Professional Development (CPD) Standards Office.

Cleverbooks

Augmented Classroom by CleverBooks provides interactive learning in Geometry, Geography, and Space for students aged 5-12 using augmented reality. The platform supports multiple languages, aligns with First to Sixth Class curriculum, and collects no student data.

Nurture

Nurture is an innovative educational platform designed to support teachers and enhance student learning through personalized feedback. Founded by David Neville and Pádraic Hogan in 2021, Nurture aims to reduce teacher workload while improving student outcomes.

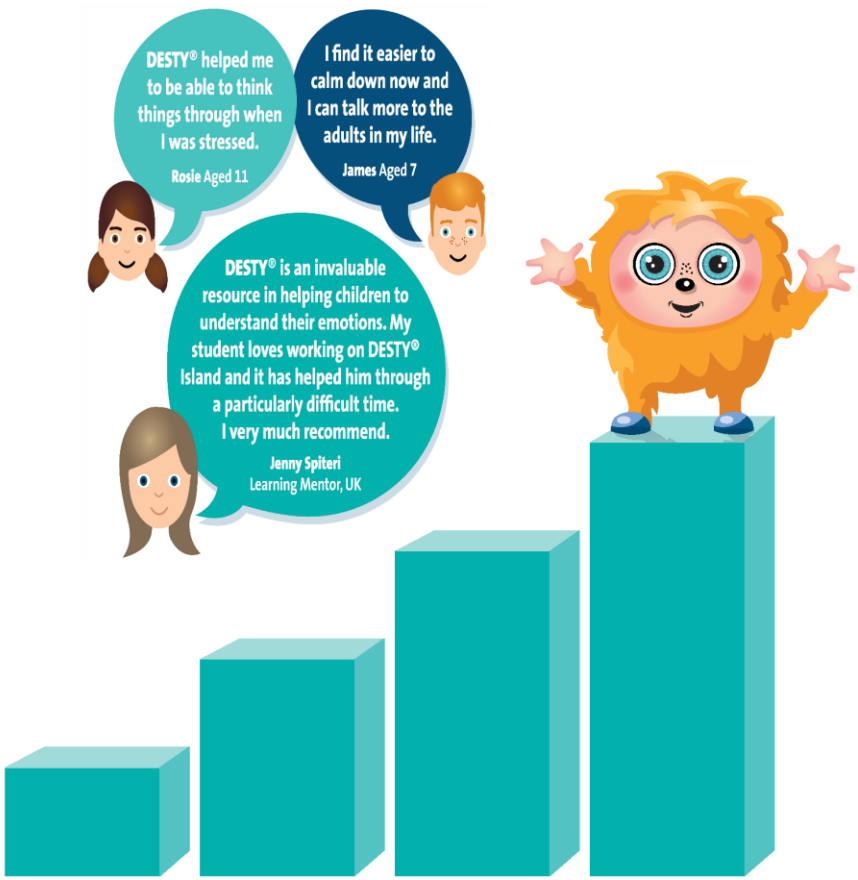
By integrating with tools like Microsoft Teams, Nurture provides fast and effective formative feedback, helping students from diverse backgrounds achieve their full potential. The platform has been recognized for its impact, winning the 2022 International e-Assessment award for "Best Formative Assessment Project"

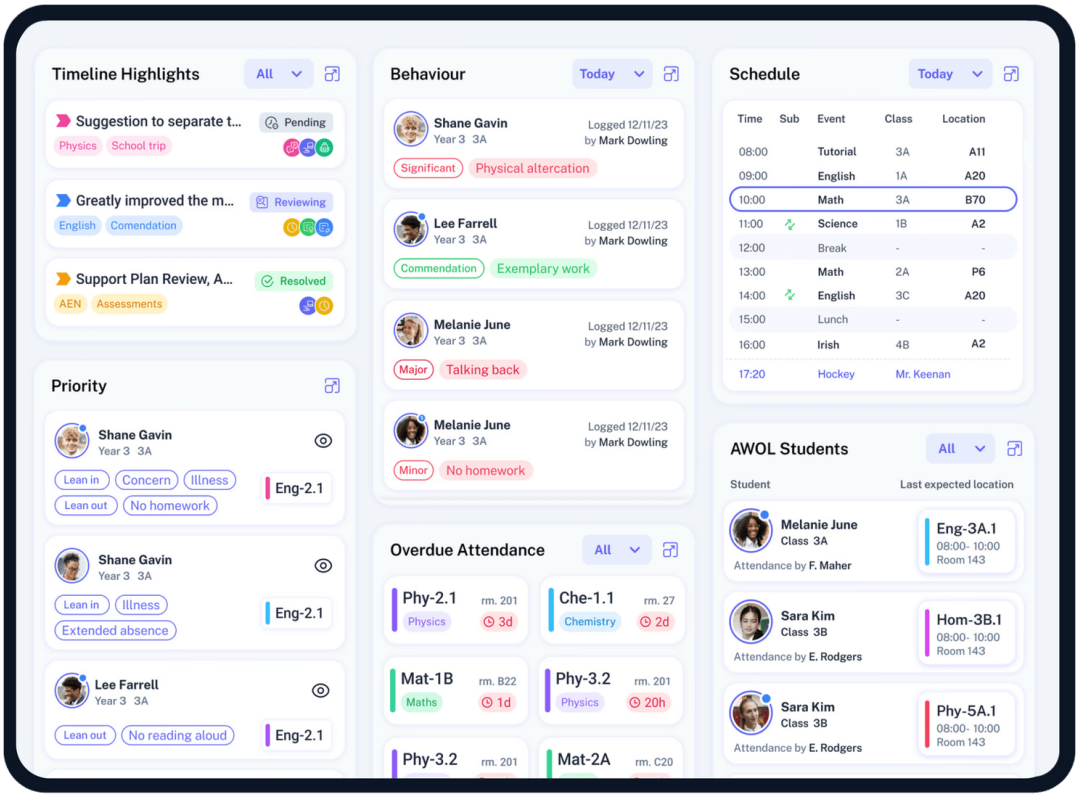
Education DESTY

DESTY is a multi-award winning, educational platform focused on enhancing children's emotional resilience and well-being. Founded in 2015 by educational psychologist Stephanie O'Malley, DESTY offers the DESTY Island Emotional Resilience Programme, a unique, interactive world where children learn about their feelings and how to manage them.

The program involves one-to-one sessions with a trained DESTY Mentor, who could be a parent, carer, or educator. These sessions aim to build children's self-confidence, social skills, and emotional resilience through a combination of online and offline activities.

The program is evidence-based, with studies showing significant improvements in children's emotional well-being, with research undertaken in collaboration with Sheila Burton (National Emotional Literacy Support Assistant Network, UK) highlighting 80% of children who used the DESTY® Island Programme improved their emotional wellbeing.





Tyro

Founded in 2022 by Patrick Barry (who previously founded VSware) and Niall O'Reilly, Tyro is a student-first, mobile-first, student information system (MIS) and timetabling solution designed to streamline school management and enhance the educational experience. Being a mobile-first platform, schools can expect the same functionality and seamless experience across all devices and formats.

Here are some key features of Tyro:

- **Student Management**: Provides tools for better managing student information, including priority notes, support plan recommendations, and student timelines.
- **Timetabling**: Uses an AI-powered scheduler to generate timetables quickly and efficiently, accommodating various school needs like dual grids, split lunches, and more.
- **Parental Engagement**: Offers intuitive mobile apps for iOS and Android, consolidating parental communication, payment processing, absence requests, and permission slips into one platform.
- **Security**: Features Face ID and biometric authentication for added security and convenience.

- **Support**: Provides dedicated support with rapid response times and effective solutions, ensuring smooth transitions and ongoing assistance.

Tyro aims to revolutionize student support and school management by integrating advanced technology and user-friendly features.

SchoolWise

SchoolWise is a comprehensive educational platform designed to streamline various aspects of school management and enhance the learning experience. It integrates assessment, academic tracking, learner support, and curriculum planning into one connected system. This platform helps schools manage their data efficiently, providing actionable insights to improve student outcomes and support every learner's educational journey.

Key features of SchoolWise include:

- **Assessment**: Centralizes all assessment data, making it easier to spot trends and address concerns.
- **Academic Tracking**: Identifies students who are not reaching their potential and helps take corrective actions.
- **Learner Support**: Offers a holistic view of each learner to track their progress and provide necessary support.
- **Curriculum Planning**: Provides a collaborative space for effective subject planning with built-in frameworks and specifications.

SchoolWise also integrates seamlessly with tools like Microsoft 365 and Google Workspace, ensuring that schools can use their existing systems without the need for multiple logins or data duplication.

Compass MIS

Compass is a comprehensive school management system designed to streamline various administrative and educational processes within schools. It is a web-based platform that integrates multiple functions to improve school administration, enhance parental engagement, and support student well-being.

Key Features of Compass:

- **Timetabling & Daily Organisation**: Manage school schedules and daily operations efficiently with the Griddle timetabling solution.
- **Assessment Tracking & Reporting**: Track student progress and performance using the Pulse data module, which generates insightful reports to inform teaching strategies.
- **Wellbeing Management**: The Chronicle module supports mental health check-ins and personalized support plans to foster a nurturing environment for students.
- **Parental Engagement**: The Parent App facilitates seamless communication between parents/guardians and educators, keeping them informed about student progress, events, and announcements in real-time.
- **Teacher Dashboard**: Provides a comprehensive view of daily events, tasks, and reminders to help teachers monitor attendance and support learning.
- **Exams Management**: Simplifies the exam process from scheduling and registration to grading and reporting.
- **Payments**: Allows for convenient and secure online payments for school meals, extracurricular clubs, and educational trips.
- **Data Management**: Centralizes data management, streamlines communication, and standardizes processes to optimize school governance and performance.

SimpleStudy

SimpleStudy, designed specifically for Junior Cycle and Leaving Certificate students is an exam preparation platform that promises to transform the way students approach their studies.

A comprehensive online platform offers a wide array of resources, with over 37 subjects covered, including Maths, English, Irish, Business, Physics. SimpleStudy provides curated notes, sample essays, quizzes, and questions based on past state exams.

Key Features:

1. **H1 Revision Notes**: Well organised and concise notes, reviewed by experts, are divided by topic and highlighted for easy recall during exams.

2. **Exam-Focused Quizzes**: The platform includes fun and engaging quizzes based on past exam questions. These quizzes help students track their progress and stay focused on their exam preparation.
3. **Progress Tracking**: SimpleStudy allows students to set goals, track their progress, and monitor the completion of notes, essays, and experiments.
4. **User-Friendly Interface**: The platform is designed to reduce stress and make studying more efficient.

Child Paths

Child Paths is a comprehensive management software designed for early years and primary schools. It aims to reduce the time spent on paperwork and enhance child development by offering a range of digital tools and features.

Founded by Ciaran Flynn, to bridge communication gaps between parents and educators and alleviate the workload for practitioners. The platform integrates the Irish educational frameworks like Aistear and Siolta and includes a unique development tracker called "Milestones" to monitor children's progress.

Key Features:

- **Digital Forms and Signatures**: Manage paperwork digitally, including incident reports, permission slips, and more.
- **Financial Management**: Online invoicing and in-app transactions to streamline financial processes.
- **Compliance**: Automated compliance features such as attendance and activity logs, room ratios, and staff scheduling.
- **Classroom Management**: Tools for online child registration, occupancy planning, observations, and sharing photos, videos, and audio.
- **Communication**: Instant messaging and reporting features to keep parents and educators connected.

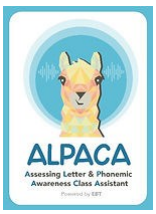
iClass

Founded by Frank O'Grady back in 2012, iClass is well-established, comprehensive website and mobile app platform designed

specifically for schools. It aims to enhance student enrolment and improve communication between schools and parents. Here are some key features of iClass:

- **User-Friendly CMS**: The platform offers an easy-to-use content management system (CMS) that allows schools to manage their websites efficiently, with most tasks being completed in under 60 seconds.
- **Integrated Mobile App**: iClass includes a fully integrated mobile app for parents, which facilitates communication by allowing schools to send messages, files, absentee notes, consent forms, and more.
- **Cost Efficiency**: The platform helps reduce costs associated with messaging and printing by providing digital-first solutions.
- **SEO and Google Ranking**: iClass improves the school's online presence through better Google ranking and SEO.
- **Dual Language Support**: The mobile app supports multiple languages, making it accessible for schools with diverse linguistic needs.

ALPACA



ALPACA, which stands for Assessing Letter knowledge & Phonemic Awareness Class Assistant, is an innovative early literacy assessment tool founded by Joe Fernandez and developed through a collaborative research project involving Trinity College Dublin and the Marino Institute of Education. Launched in February 2022, ALPACA was created with the expertise of Dr. Jennifer O'Sullivan and has been co-developed with 70 teachers across 30 primary schools, involving 1,000 junior infant learners aged 4-6 from five different countries.

Key Features:

- **Early Assessment**: ALPACA assesses junior infant learners at three points during the school year (September-October, January, and May) to identify gaps in foundational reading skills and inform necessary interventions.
- **Progress Monitoring**: The tool provides evidence and capabilities to regularly monitor the progress of children receiving instruction in phonemic awareness and letter knowledge.

- **Data-Driven Insights**: ALPACA helps teachers understand ability levels, informs groupings, and offers recommendations to involve parents in their child's learning journey.

ALPACA is designed to be used with digital devices like iPads and laptops, requiring good quality headphones for optimal use. This tool is a significant step forward in early literacy assessment, providing teachers with the resources they need to support young learners effectively.

ExamRevision

ExamRevision is an online learning platform designed to help Junior Cycle and Leaving Certificate students for state exams. It offers a variety of resources to make studying more effective and engaging. Here are some key features:

- **Video Tutorials**: Short, concise videos created by specialist teachers to help students understand difficult topics.
- **Expert Notes**: Comprehensive notes designed to help students achieve high grades, such as Distinctions or H1's.
- **Interactive Quizzes**: Quizzes that test students' knowledge and help reinforce learning.
- **Live Courses**: Courses that provide real-time instruction and support.
- **User-Friendly Interface**: Easy to navigate, making it accessible for both students and teachers.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