Using *currere* to consider past and future landscapes of technology use in learning and teaching: a view from the Wales Collaborative for Learning Design (WCLD)

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ABSTRACT

This article examines the prior lived experiences and future potential aspirations of technology use through the perspective of a Welsh Government-funded project. The Wales Collaborative for Learning Design (WCLD) has 32 members from all 9 universities in Wales with a specific focus on technology in learning and teaching. Through the autobiographical method of currere, the study aims to give attention to the previous experiences of each member from when they were once the learner; this being referred to as the regressive phase. The study also aims to explore the future landscape of technology use in learning and teaching, utilising the progressive phase of the currere method, to allow participants to wonder what could or might come to be. Once all individual fragments were collected, fragments referring to individual memories, stories, anecdotes and recollections, synthesis allowed any commonalities to be identified and theorised. The main finding of the

research is that technology, and all various technologies, be treated as a tool with which teachers can choose to implement when they deem pedagogically appropriate, especially considering the affordances of technology that can transform learning and teaching opportunities.

Keywords: Currere, curriculum, pedagogy, technology, affordances, barriers, curriculum for Wales

Introduction

The Wales Collaborative for Learning Design (WCLD), a project funded by Welsh Government involving all nine Higher Education Institutions in Wales, examines emerging technologies in learning and teaching. In a time of rapid technological developments, we felt it important to reflect on our own experiences and relationships with technology in education. This offers a range of insights and perspectives as the group contains 32 members from diverse career stages and disciplinary backgrounds, ranging from those near the beginning of their career, to those nearing retirement, from research assistants to established Professors, and everything in between.

Two members of the WCLD were introduced to the concept of *currere* as a research method at a collaborative research retreat involving teachers, researchers, academics and other key stakeholders. The retreat explored and shared experiences of curriculum through the *currere* method. The method afforded time for self-reflection and gave space for individual voices and experiences to be heard. Thus, *currere* provided an ideal method for the WCLD project members to reflect on their individual experiences of the use of technologies in education.

Currere derives from the Latin word for 'curriculum', emphasises lived experience (Pinar, 1975) and typically follows four steps: regressive, progressive, analytic and synthetic (Pinar, 1994). Pinar (2010, p. 178), who pioneered the approach, asserted that *currere* is 'an autobiographical means to study the lived experience of individual participants in curricular conversation'.

Instead of focusing on the contents of the curriculum itself, attention is given to 'the running of the course. The course most broadly is our lives, in schools and

out, and the running, is our experience of our lives' (Pinar, 1974, p. 18). Through *currere*, participants engage in a process of reliving past experiences and making links with the present, possible future and academic knowledge (Wang, 2020). It is suggested that this can be an individual or shared venture (Pinar, 2011). *Currere*, ultimately, provides an autobiographical space in which participants can 'wander and wonder, between public and private, self and other, teaching and being taught, learning and unlearning, past and present, the determinable and indeterminable' (Wang, 2023, p. 19).

The linking of past present and future creates an avenue or passage, where one can dynamically shift from and to past, present and future all at once. The sensation of moving from the past, present and future so fluidly can be disorientating or confusing at first. However, 'disequilibrium is a necessary condition for transformation' (Kanu and Glor, 2006, p. 230). In this context, through examining what we already know and have experienced, we may seek to gain a clearer picture of where to go moving forwards.

Our *currere*

Our interpretation of *currere* in the current study provided an autobiographical space for WCLD members to explore their own experiences of technology in teaching and learning through two key collected written fragments. The first fragment, the 'regressive', was an unstructured reflection on past experiences of technology as a learner (at all ages). The second fragment, the 'progressive', looked to the future landscape of technology in education. In the second fragment, participants were asked to reflect on future aspirations for technology in education. This focus on the past and future allowed participants to 'get under one's exteriorized horizontal thinking' (Pinar, 1975, p. 407). In other words, to 'work with the past, release from it, allows loosened identification with fear of the future, and allows heightened intuitive sense of where one may go' (Pinar, 1994, p. 59).

After gaining university ethical consent, participants were encouraged to reflect either in solitude (Pinar, 2011), company or dynamically. To this end, participants were given two weeks after being introduced to the concept of *currere* to think about and write their own fragments. Participants were also offered the opportunity to attend a 'Virtual *Currere* Retreat' (an online space to sit and write quietly, discuss

personal memories and build towards individual regressive and progressive fragments). This resulted in a total of 47 fragments across 19 participants.

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**Regressive fragments – 'returns to the past,
to capture it as it was' (Pinar, 1975, p. 21)**

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Pinar (2010, p. 178) suggests that 'regressive step or moment, one's apparently past existential experience is conceived as data source … to re-experience the past so that the pool of memory enlarges'. Thus, the following data fragments are presented unedited (except to remove identifying detail), as 'free associative remembrance of the past' (Wang, 2010, p. 276), with each heading representing one individual participant.

Meeting the Internet

My first ever experience of 'meeting the internet' was through a discussion in the classroom at school in our IT class. We did not have access to it at the time, however I remember hearing about the connections it had to all the information available – like an up to date and constantly evolving Encarta encyclopaedia, one of my favourite things on the computer at the time.

One day whilst out shopping, I saw a disc in the supermarket by the counter for free access to AOL: 'the internet'! I took it home with me and eagerly looked forward to downloading all of the internet onto my home computer. I went to my home PC, placed the disc in the drive and sat down to watch the internet be slowly downloaded onto my computer. Five hours later and spot on, the internet was there for me to browse to my heart's content.

When I clicked on the logo however, despite the browser screen appearing, there was a message asking about a telephone line. I didn't understand. I had the disc, and like with my version of Encarta, I had patiently installed the internet onto my computer.

Disappointment. I went to school the next day to ask my teacher about what this meant and what I had to do, however knowing the additional cost of getting this internet onto my computer meant that it was not to be. Anyway, it didn't sound that good and certainly was going to be a bit of an anti-climax.

Just a Few Clicks

Reflecting on my experiences with technology in education, I find myself returning to that pivotal moment in school when I first encountered a computer. The sight of the monitor lighting up, the hum of the CPU [Central Processing Unit], and the click of the keyboard fascinated me. This moment opened a world that felt vast and limitless, anything seemed possible with just a few clicks.

As a learner, technology shaped my educational journey in many ways. Initially, I used computers in a basic sense, for playing games and learning to type. These early experiences were playful and engaging, yet they subtly built a foundation for critical thinking and critical thinking skills. As I grew older, I began using computers to research my interests, and even explore creative outlets like web design and coding. The introduction to the internet became my gateway to knowledge beyond the textbooks, allowing me to explore subjects that piqued my curiosity and expand on my coding interests.

However, my relationship with technology was not always seamless. I encountered moments of frustration, particularly when coding, or experiencing technical difficulties and slow dial-up internet connections. Yet, as I reflect, I see these challenges were part of the growth process, teaching me perseverance and adaptability.

Looking back, I see how technology became a tool not just for learning, but for shaping my identity as a learner that ultimately became my career. It allowed me to explore new worlds, question established norms and cultivate a sense of curiosity that remains with me today. My early fascination with that first computer continues to influence how I engage with technology, both as a tool for learning and as part of my career.

The Grand Unveiling

I guess my first ever memories of technology as a learner were probably in primary school. I recall about halfway through primary school the grand unveiling of a computer lab – a dark navy-blue room, with a high U-shaped table that seated a small group of children. Once a reading room, now half the space was occupied by big chunky off-white computers and high chairs that we had to struggle to climb up on to! Once a week, I remember queuing up outside the room full of excitement

and enthusiasm that it was our class's turn to use the computer lab. We would wait patiently in the reading area for half the group to use the computers until it was our turn. I remember taking my seat at the computer, the screen appearing fuzzy and pixelated and feeling the slight stick when I pressed down on the big, plastic keys on the keyboard. I don't really quite remember exactly what we were using the computers for. I vaguely recall practicing spelling and creating visual shapes on the screen – either way it was novel, fun and exciting!

Embrace Technology Fully

Being educated in a technology-free environment at a Steiner Waldorf primary school and with minimal access to technology at home, my early education was primarily analogue, rooted in books and hands-on learning. However, my exposure to technology began when visiting my father, where I learnt basic computer skills and how to interact with technology. It was not until secondary school that I formally engaged with technology in a rigorous, technical manner, and received a very technical, mathematical training of using technology and computers. I did not start to learn more generally using technology until towards the end of my secondary education, where I started to rely on tutorial videos, web documents and collaborative platforms, but using technology came instinctively to me.

The Thrill of Programming

I've been interested in technology and how it impacts teaching and learning throughout all aspects of my teaching career. From early interactions with computers and calculators during my O- and A-levels, and throughout my degree and masters theses.

My year group was one of the first to be allowed to use a calculator in the A-level maths exam, although we still had to demonstrate that we knew how to use log books – I still have my *Godfrey & Siddons: Four Figure Tables*. I think this transition from paper to handheld technology allowed me to witness first-hand the benefits of generating large amounts of data and results quickly, thus focusing on analysing the results rather than the laborious generation of the data. I remember the thrill of programming the calculator with the quadratic formula, thus being able to solve many equations in next to no time. This was my first experience of using the

technology to investigate the result of varying one parameter at a time to discover the result.

In Awe of This Turtle

My earliest memory of technology as a learner was sitting in the dimly-lit computer room of my old primary school. The room itself was nothing spectacular, a room of old desktop computers with barely enough to entertain a class of nearly 30 pupils. The very fact it was next door to the classroom we sat in day-to-day, week-to-week should have made it all the more ordinary. However, there was something about going to the computer room that made the lesson suddenly interesting and engaging, and learning didn't seem so awful.

The program I remember most vividly using was being able to control and command a turtle on screen. The turtle would move and turn however you told it to, and you could instruct the turtle to trace its steps (drawing a line for every space you made it move). With this, you could make some very basic shapes like a square or a circle, but also intricate pieces of art and drawings. I now know this to be some of the basic principles of coding, but the child sat staring at the computer screen just saw this as fascinating and beyond comprehension.

I guess thinking back, it makes me realise how extraordinary some of the technological advancements that have been made are, but how mundane or simply accustomed I have become to seeing technology in action. Nine-year-old me was in awe of this turtle following my simple instructions, but now I use far more advanced technology every day without taking even a second to appreciate or realise its power.

A Game-Changer

Twenty years ago, the classroom was in transition – Google was just emerging, and we were moving from chalkboards and cellophane with OHPs to PowerPoints and projectors. Technology quickly became my lifeline. As someone with undiagnosed ADHD, the structure and organisation it offered felt like a game-changer. I was constantly drawn to new ways of integrating tech, always on the lookout for ways to 'hack' teaching and make it a more sustainable career.

My motto was all about micro improvements. I figured if this formula worked for Team GB in cycling, why not for me?

Looking back, I see how technology became both a tool and a trap. It satisfied my need for stimulation and gave me those quick wins, yet it also nudged me toward burnout as I struggled to balance novelty with sustainability.

A late ADHD diagnosis finally brought clarity to this journey. I recognised the patterns I had lived with – the constant need for structure, the craving for efficiency, and the challenge of staying focused on tasks that didn't instantly engage me. Technology, and now AI, has given me a framework to manage my thinking, set goals, and explore ideas I often lack the words for. AI has become a trusted companion, responding quickly enough to keep pace with my curiosity and helping me stay productive without getting pulled into distractions.

The Thrill of Watching David Attenborough

Reflecting on the role of technology in my education brings me back to primary school in the late 1980s, when technology in classrooms was a rarity. The highlight was seeing the TV and VHS player wheeled in on a trolley. I still vividly remember the thrill of watching David Attenborough narrate a volcanic eruption, making the distant world feel astonishingly real.

Looking back, I realize how advanced the technology in my home was compared to that of my peers. My mum, a traditionally trained typist, worked at a local agricultural college. To earn extra income, she would type up student dissertations in the evenings, initially on a typewriter. Later, she began working remotely as a secretary for the Royal Society for Applied Bacteriology, which was very uncommon at the time. This role provided her with an early word processor, making her a pioneer of digital word processing. Her proficiency grew to the point where she began teaching word processing at the local college in the evening. Observing her adaptability and skill, I absorbed a sense of how technology could open doors, transform work, and create new opportunities.

When I moved into secondary school, classroom technology was still limited, we had now moved on to overhead projectors! Yet my interest in it had clearly been ignited, as I was certain I wanted to study Information Technology for my GCSEs. This determination was so strong that I transferred schools to pursue it. While the GCSE itself didn't necessarily set my passion for technology on fire, it established a foundation that would continue to shape my future. After a roundabout path, I eventually spent 15 years working for an online tech company. Although I can't

write a line of code, I found a unique thrill in being immersed in the fast-paced, ever-evolving world of technology.

Still a Learner

When I first read this statement, my immediate thought was, 'Crumbs, my undergraduate studies were a long time ago!'. However, as I started to reflect more, I realised that I am still a learner, and my experience of technology is still being shaped today.

Thinking back to my undergraduate studies, I cannot remember having access to a virtual learning environment; many lectures were still delivered using acetates on an overhead projector or chalk and a blackboard. A lecturer using PowerPoint was the exception rather than the norm, and PubMed was in its infancy, so many nights were spent in the library trying to find the physical textbook or paper.

Fast forward to today and my current experience of trying to keep ahead of technological innovation, and it is almost the opposite problem … too much tech! There seems to be a need for a technological solution to everything, and sometimes, it is hard to keep up!

What Value Did It Bring to Me

I suppose my journey of using technology in education as a learner is a bit more prehistoric than some. I went to school when technology consisted of two ancient computers and a dot matrix printer in a classroom that was laughingly referred to as the 'computer lab'. That and the TV that was wheeled out once a week. This and the scientific calculator which we were told never to really rely on as when were you going to walk around with those in your pockets. At university, I came to mistrust technology after a computer crash meant I had to re-write a final year assignment three times from scratch. For me, therefore, this has always been more about what value did it bring to me, I need to see the value in order to use whatever it may be. I don't like reading on screens, I love the printed word and couldn't really see how technology could enhance that. For my doctoral studies we were taught all sorts of ways in which research could be organised and supported with technology, which was interesting, but not quite for me. I liked the way in which I could organise on paper in a way that a computer programme couldn't

replicate. As a learner, technology felt generic, impersonal and not as tangible as physical resources and this may also explain my extensive notebook and pen collection to some extent.

My Earliest Recollections

As a learner my experiences of using technology to enhance my learning are limited. This is due to the availability of IT and equipment related during the 80s and early 90s. Within school, limited use of BBC Micros was used, but not for any real purpose other than to 'learn computing'. Outside of this the technology was just VCRs for use of viewing programmes and staff had limited skill with these. The pupils were more skilled in getting equipment working effectively compared to the teachers. Indeed, the teacher asking for pupils to tune in the video recorder on the television for them is one of my earliest recollections of technology use. Other instances of using wiring, data loggers, etc within science lessons always lacked reliability or didn't work at all. The main experience of note was the introduction of Windows during the course of my PhD. Through self-tuition I navigated my learning of using spreadsheets and word processing (Office) to be able to produce the thesis. Data logging equipment was used to retrieve analytical results from the chemistry equipment that the PhD was based upon. This involved using IT to produce graphs, tabular information that was then processed and discussed manually in order to view trends for the PhD.

A Spark of Curiosity

My earliest encounters with technology in an educational setting occurred during my primary school years. I recall utilising BBC computers, using programmes where I had to order and outline the steps involved in preparing a cup of tea. This experience, though rudimentary, ignited a spark of curiosity and a fascination with the potential of technology.

Subsequently, I acquired a Sinclair ZX Spectrum, a personal computer that afforded me the opportunity to delve deeper into my technological interests. I spent countless hours composing stories on a basic word processor. This period marked the inception of my lifelong affinity for technology, fostering my creativity and problem-solving abilities.

As I transitioned to secondary school, I had access to a dedicated computer room and regular IT classes. Here, I was introduced to software applications such as Word, Paint, and Publisher, which became indispensable tools for my academic endeavours. I vividly remember the thrill of crafting my first digital documents and the challenge of securing my digital identity through the creation of usernames and passwords.

The advent of the World Wide Web coincided with my secondary school years, revolutionising the way I accessed and processed information. I immersed myself in online research, exploring historical and geographical topics, and even discovered a wealth of digital resources to support my musical pursuits, such as guitar tabs which could be downloaded. This period marked a significant turning point, as the internet became an integral part of my learning journey, expanding my horizons and fostering my intellectual curiosity.

My university experience further solidified my relationship with technology. I became proficient in advanced software applications such as Word and Excel, while also experiencing the intricacies of networks and online storage. The majority of my academic work was conducted digitally, and the increasing availability of online journal articles facilitated my research. This period marked a significant advancement in my technological literacy, empowering me to navigate the digital landscape with confidence and efficiency.

Such a Privilege

Learning using technology can be risky, frustrating and filled with trepidation, but when it works well, it has genuinely transformed my learning experiences. Technology has helped me to understand intricate anatomical structures without the need for human tissue, it has helped me solve complex scientific problems and learn new techniques and procedures. Being able to learn using technology is such a privilege, and sometimes when it has gone wrong or not worked I have been able to reflect on how lucky I am to have it in the first place. When my laptop won't start, my WiFi goes down or my app crashes, I am reminded that access and literacy to technology is inequitable across Wales. I feel very lucky to have been able to learn so much using technology, but I am acutely aware that not everyone is quite so lucky.

Ignited a Passion

In reality, technology as we know it today was in its infancy when I was a learner. I fondly recall hearing the dial-up tone and being introduced to a very slow and clumsy mouse. As the entire school shared a single computer, the impact of technology on my early years was minimal. By the time I reached secondary school, things had improved significantly and I was awestruck by classrooms designed only for IT lessons, with individual computers for each student.

Initially, our primary focus with these computers was on typing skills. Much to the annoyance of our teacher, most of us would not only type one-handed, but only use one finger, and spent most of our time hunting for the right keys to log in.

However, as I approached my GCSEs, the potential of technology became increasingly evident. It was clear that computers could serve a purpose beyond being an advanced typewriter or a passing trend. I take pride in recalling my Design and Technology project – a coffee table where the top was made using a CNC router. The professionalism of that piece not only impressed me, but also ignited a passion that led me to become a teacher in this subject for over 16 years.

Extreme Patience

If a word cloud was used to collate the words associated with my experiences of using technology during my early education, words such as 'frustration', 'queues', 'waiting', 'arguments' and 'extreme patience' would appear the largest in the cloud. I always remember the teacher being more excited than us about using these technical tools in class, any contagious excitement that spread across the room soon dwindled as we were ushered into queues behind fellow classmates and waited patiently (usually in silence) to use the digital resource. I vividly recall being given the task of programming a 'BeeBot' to go on a shopping spree through a high street painted onto a desk mounted mat. I relished the opportunity to problem solve the different directions this robot would need to make to succeed in his retail quest. I can still feel the frustration of not being able to think, being shouted at by peers in the queue behind me urging me to key in to turn right then left or left then down then right. I remember entering a long list of directions only to be met with the disappointment of low batteries. In a similarly underwhelming

experience, I recall the frustration of watching a friend control the mouse on a bulky desktop screen and what seemed like an entire lesson for the same desktop to save a drafted paragraph of a story I had written only for this to be overwritten by another pupil after break. I think if you had told an eight-year-old me that I was going to be exploring, researching and teaching others technology in education he wouldn't have believed you!

Progressive – 'what is not yet present' (Pinar, 1975, p. 24)

This step is where 'one looks toward what is not yet present, a form of free association inviting fantasies of who one is not now, of what is felt to be missing, sought after, aspired to' (Pinar, 2010, p. 178).

For Good and Evil

There is no limit in my view to what we can achieve by using technology in the classroom. It offers opportunities to do things and show things in a completely new way, one which allows the topic to be understood better by all. The use of virtual reality (VR) is an excellent place to experience environments and undertake all kinds of activity that would normally be impossible. Perhaps because they are too dangerous, too expensive, or inaccessible by some, geographically or otherwise. Whether this is via headsets or short throw projection is still an ongoing struggle for me. Institutions that bar its use, or limit the resources directed to it, are going to struggle with attracting students and retaining them, when other opportunities are seen elsewhere. Not just in the library of learner content, but also in the way in which the material is delivered – we are no longer constrained to didactic in-person, lecture type delivery and we have a pandemic to thank for it. The inevitable use of AI for dealing with routine or repetitive tasks is already here – all tools are used for good and evil and I believe it is more around educating users on those boundaries.

Accessible Format for All

Aspirations for teaching with, or through technology in the future lies in the development. The ability to use immersive technology to enhance and support

teaching and learning, while gaining efficiencies around assessment timescales and creating effective scenarios for both teaching and assessment is an exciting opportunity. Also, the ability to take teaching outside of the classroom in an accessible format for all students supports the values the university (and I) have on creating an inclusive learning environment.

In my role, I have always been keen on using technology appropriately and effectively to support learning. I have an aspiration for others to embrace the use of immersive technology in support of learning and teaching. I am currently involved in the development of a new learning lab and immersive suite for this purpose, due to be completed in December 2025. Supporting staff to overcome fears of technology and changing mindsets about the appropriate use of technology and the opportunities to use immersive technology to support learning is a very exciting opportunity.

The Changes of the World

As a recent graduate, who has experienced an education that has been heavily influenced by technology, I believe there is much to be said about the incorporation of technology within education and moving forward in the future.

With the ongoing technological advancements of the modern world, I believe it is important keep up to date with these improvements and adapt teaching accordingly. The use of AI, for example, is rapidly becoming the norm in many businesses, and many students graduating from university in the years to come will use AI at some point in their careers. Education seems to be somewhat behind the rest of world when it comes to AI. I believe this needs to change.

I understand the hesitancy around academic misconduct and not knowing whether a piece of work submitted was generated entirely by AI. To combat this, many lecturers have proposed the use of authentic assessments. While I encourage these over closed book examinations for their real-world applications and ability to assess a wide range of transferable skills, I also believe that an assessment cannot be truly 'authentic' if it does not keep up the changes of the world and that includes AI. As AI technology continues to improve and its use grows, I believe students should be taught how to use AI appropriately and with integrity. It is a valuable tool that I believe will not only improve students' understanding of content material, but also serve as an additional skill to be learnt which can be applied to the workplace.

Technology in Aid of Teaching

For the future, I can certainly see that there are plenty of engaging opportunities to develop and utilise technology in learning; though this does come with a caveat in that technology in education must not come at the detriment of good quality teaching. Though technology is becoming more widely used in FE and HE settings, I am starting to see classrooms move slowly towards office-style cubicles, where group collaboration tables are dominated by flipped up screens and all communication purely through a format of text communication and 'camera-off' teams calls – lacking the personal connection and effective community of inquiry that supports learning.

My aspiration therefore for the future of technology within education, is that we can use it not to dominate teaching and learning, but instead support teaching and learning through the streamlining of processes that dominate our roles, allowing for us to focus on the strengths of teaching – 1-2-1, group collaboration/discussions and open debates – providing the space and grounds for critical engagement.

A Plethora of Future Opportunities

Looking toward the future, I seek to further develop the potential of teaching with technology, especially through AI and immersive tools; to transform learning opportunities for all students, particularly those from disadvantaged backgrounds. With AI, I envision further improvement of the personalised learning experiences that I sought to include in my own teaching. With the added facility of being able adjust to each student's pace and ability, a vision that holds promise for students who may have gaps in their prior knowledge or who struggle in traditional educational settings. In these future classrooms, I see the potential for every learner to receive more individual support, something that was once only possible with additional human resource. Such advancements could be significant for students with additional learning needs, or those from areas of deprivation.

Immersive technologies hold equally exciting potential. Imagine a student who has never left their town/city due to financial limitations, a more common occurrence than often realised. Yet with these technologies that very same student can experience a walk along the Great Wall of China or conduct a complex science experiment in a fully equipped virtual lab. These experiences can transcend

socioeconomic constraints for students who may lack access to these enriched learning environments making learning both real and engaging, offering a plethora of future opportunities. This vision, my vision, underpins my commitment to technology in education and my belief in its power to foster the possibilities it enables, as it did for me when I saw that very first computer in school.

Active, Independent Thinkers

As I reflect on my aspirations for teaching with technology in the future, I envision a classroom where digital tools not only enhance learning, but also empower pupils and teachers to become active, independent thinkers. I aim to further integrate innovative technologies that promote collaboration and creativity, such as augmented reality and gamified learning experiences. My goal will be to create an inclusive environment where all learners feel confident in using technology, recognising it as a means of expression and exploration rather than a barrier.

   I aspire to design curricula that are adaptable and responsive to the diverse needs of my students, leveraging data analytics to personalise learning experiences and supporting the development of metacognitive and self-regulatory skills with the aid of technology. By incorporating project-based learning with technology, I hope to encourage critical problem-solving skills and real-world applications. Additionally, I am committed to fostering digital citizenship, ensuring that my students not only utilise technology effectively but also understand its ethical implications. As I continue to grow as an educator, I look forward to collaborating with colleagues to share best practices and explore emerging technologies that can transform teaching and learning. Ultimately, I aim to inspire future educators to harness the power of technology to create engaging, meaningful, and equitable learning environments, especially within Welsh-medium education, where innovative resources for teachers are often thin on the ground.

The Possibilities are 'Most Likely' Endless

The possibilities are most likely endless when you really think about it, aren't they? It's difficult to imagine ways in which we may be using technology in 10 or 20 years' time. I think for me, it's less about what's to come and I would really like to focus

on changes that can happen with current practice. I currently lead a blended learning course which involves a lot of remote teaching and the design and development of self-directed activities. I am constantly looking at new ways in which I can develop this course to offer the students an engaging and positive experience. At times, I think creativity can be stifled by institutional licenses and clunky virtual learning environments which are by no means pretty and don't lend themselves to online and blended learning – I would love to see this change!

Missed Opportunities

I worry that using technology in education is sometimes inequitable. I worry about the students who don't have smart phones, those whose WiFi is dodgy and those (particularly mature students) who may not have the digital literacy to be able to engage. I don't not think Universities are investing heavily enough in technology. We used it when we needed to during the pandemic but we seem to have regressed back to very traditional in-person approaches which do not provide learners with innovation or flexibility. There are many missed opportunities.

A More Agile Approach

Looking ahead, I envision technology playing a transformative role in both my personal and professional growth. One key area I hope to advance in is GenAI, digital content creation and, generally, software used for data analysis, particularly for qualitative research. Gaining expertise in these areas would enable me to streamline tasks in teaching and research, make my content more engaging and ultimately enhancing both efficiency and the quality of content I provide. Developing these skills aligns with a potential future ambition of transitioning from academia into data science also, building on my background in mathematics and current proficiency in RStudio.

I'm particularly excited about the future of AI in education, from intelligent tutoring systems, support in learning and teaching, to advanced research tools. While I already incorporate AI into my practice, I hope our university will adopt a more agile approach to integrating emerging technologies. Institutional restrictions and resource limitations often inhibit the full potential of technology, which I believe is essential for achieving and delivering excellence. Ideally, our future

learning environments will provide upgraded technological tools that prioritise accessibility, ensuring all students benefit from enhanced digital experiences; and equally, give staff the provision necessary to deliver said excellence.

The Future Will Far Exceed

The use of technology is supported by the Welsh Government's Digital Competence Framework (DCF), which aims to integrate digital literacy, citizenship, and communication across the curriculum. This said, I believe the future will far exceed this stated aim.

Whilst I don't think (or hope!) that teachers will be replaced by AI, I see a real place for AI to support pupils' learning through individually tailored exercises and problems. Also, instant feedback via text or possible an AI avatar, giving explanations, tutoring and support.

Pupils could work together with other pupils across the country, or even internationally, on real life scenarios, in virtual reality classrooms and labs. Although the physical classroom space might not be necessary given the tech, I hope this is not the case as the social aspects of the classroom might be harder to replicate virtually.

However, there are challenges. While the Welsh Government has invested in digital resources, there's still a digital divide; not all students have the same level of access to devices and reliable internet outside school. In my experience, this disparity can hinder consistent engagement. Balancing the use of technology with more traditional approaches has been crucial in ensuring all students can participate meaningfully.

Adaptive learning platforms that adjust to students' progress, for instance, would allow more personalised support, particularly beneficial in mixed-ability classrooms. The potential of data analytics to track students' progress is another area I'd like to see. Real-time insights into each student's understanding could allow gaps to be addressed earlier.

Overall, technology should empower students not just in maths, but also in critical thinking and resilience, enabling them to thrive in a digital world.

Move With the Times

It can be daunting to even consider the future aspirations and opportunities for technology in education, especially in the rapid development phase of AI that we

find ourselves in. I guess one main hope or aspiration would be that equity and access to technology is improved and maintained over time. It would be a shame to see these fantastic technologies be behind a paywall or out of arm's reach for some, whilst it would also be a shame to see some simply never have the chance to use the tech itself.

Another rather bold, but hopeful aspiration for the future is the revolution of assessment in education. There was a time where pen and paper, examination halls, row by row, were all necessary to conduct a foolproof assessment. However, assessment has to move with the times. It brings me back to seeing technology as a 'tool in the arsenal', and learners should be judged, examined and assessed on how they can use that tool effectively. At present, the majority of assessment almost puts its head in the sand and furiously refuses to acknowledge the existence of such technologies.

Unlocking Students' Potential Earlier

As an educator, I find myself still in the exploratory phase of using AI in education, embracing a 'learning by doing' approach. My ADHD makes me the queen of procrastination, so I'm mindful of the rabbit holes AI can lead me down. I've become more critical and selective, honing the art of crafting quality prompts and engaging in an iterative, back-and-forth dialogue with AI. It feels like a game of Socratic questioning, or a reenactment of WarGames (1983), where AI reaches its limits, leaving me to refine my understanding. At its core, successful use of AI still requires an informed, discerning educator.

Currently, AI is adept at distilling facts, although often from a Eurocentric viewpoint. I carefully manage how AI handles my data, avoiding features that might lead it to form a memory of our interactions. While I use AI to code and create efficient Excel shortcuts, I sometimes wonder if these tools truly save time, or if I'd be faster without them, questioning how much I actually learn in the process.

Looking forward, my aspiration is to train a bespoke AI model that prioritises asking questions over providing answers. Imagine an AI that acts as a virtual me, supporting flipped learning where students engage with material by asking 'why', 'how', and 'where', just as scientists and mathematicians historically have. This would encourage deeper understanding beyond test-focused curricula, unlocking students' potential earlier. For example, Joseph-Louis Lagrange (1736–1813) became

a professor at 19 because he had a thirst for knowledge and a love of maths. The academic route to knowledge as we know it can be remodelled. With an affirmational model of disability, my ADHD becomes a creative blessing, and AI could be my partner in innovation.

Be Curious and Creative

My aspirations for teaching with technology centre on equipping pupils with the skills they'll need to thrive in a world where change is constant. According to the World Economic Forum, 40% of jobs that our pupils will do in the future do not exist yet, underscoring the importance of developing adaptability and resilience in young learners. With this in mind, my aim is to foster a classroom environment where students don't just use technology but learn through it, building essential skills like problem-solving, teamwork, and digital literacy.

One of the most exciting opportunities on the horizon is the integration of artificial intelligence (AI) in education. AI has the potential to transform learning by providing personalised experience for learners with differentiated lessons as well as giving pupils real-time, individualised support. I envision leveraging AI to enable learners to lead their own learning, embracing the opportunities to be curious and creative.

In addition to preparing pupils for academic success, I'm passionate about using technology to teach life skills such as cooperation and collaboration. Through digital projects and group activities, pupils can work together to solve problems and explore new ideas, mirroring the collaborative environments they'll encounter in future workplaces.

For The Right Reasons

My first hope is that technology is used for the right reasons and is not seen as this inevitable panacea that solves every educational problem, because I don't believe it ever can or will.

Secondly, I am excited by the potential of tools like GenAI to produce a more equitable learning experience for an increasingly diverse student body. Suppose the potential power of technology can be leveraged to create robust, personalised learning journeys for students to self-pace their studies while balancing other life

demands. In that case, this will allow students to have more flexible degree options.

Transformative Learning Experiences

For the future it is hoped that my own skillset improves on the use of IT to produce learning materials, to really provide transformative learning experiences. Whether that be better understanding of how to teach use of green screen, better use of AI, etc. Short-term improvement and understanding of which AI tools are best for producing learning materials is required. For example, there are many AI tools out there, but given cost and skill in using them, identifying the appropriate portfolio of AI tools is an immediate challenge as a lot of time can be wasted 'teaching new tricks'. Ensuring value from the IT learnt both in a monetary way (from subscriptions), but also value in the time afforded to learn how to use the software. As a teacher educator within a partnership with many schools, hopefully in the future our skillset can be used more widely to give professional development for teaching staff to allow them to become more confident in their digital pedagogy. In the short term thought, this could be just INSET or guest teaching from our teaching staff at university.

The Technology Itself

My aspirations for the future of education involve a more blended learning approach, seamlessly integrating technology with traditional face-to-face teaching. I envision a future where AI plays a significant role in enhancing the learning experience.

One specific goal is to leverage AI-powered chatbots to provide immediate support and guidance to students. These chatbots could answer frequently asked questions, offer personalised advice, and even provide tailored feedback on assignments. This would free up valuable time for instructors to focus on more complex issues and provide in-depth support when needed.

Additionally, I aim to explore the use of AI to develop sophisticated formative assessments. AI-powered tools could generate personalised assessments tailored to each student's needs, providing real-time feedback and suggesting specific areas for improvement. This would empower students to take ownership of their

learning and develop personalised improvement plans based on the AI-generated feedback.

However, it is crucial to acknowledge that the integration of AI into education must be accompanied by a strong emphasis on teaching students about the technology itself. By understanding the capabilities and limitations of AI, students will be better equipped to utilise these tools effectively and ethically in their future endeavours. Therefore, a significant part of my teaching philosophy involves fostering digital literacy and critical thinking skills, enabling students to navigate the ever-evolving technological landscape.

It's a Question of Balance

To me, I have high hopes for the future of education and technology, but as a techno-skeptic. I see the opportunity there to focus on the reasons why we use it rather than how we use it. We can't escape it: the barn door is well and truly open and the horses have firmly bolted with the Chatbots firmly astride them. I see the challenge for education to provide the guidance and the steer by which technology can be used ethically and safely. I refer to safety not just in the sense of the horrific incidents that have occurred as a result of social media abuse for example, but safety for the human mind. The ability to develop and enhance and not lose ourselves and our skills because Copilot can write better emails than we can. If we don't practice such skills, we lose them or never gain them in the first place. Yes, ChatGPT can save us hours of time, but those hours of time may be necessary to develop our critical thinking and to problem-solve for ourselves. It's a question of balance and supporting others to understand that balance. Clearly there are benefits and the ability for it to connect and empower is wonderful, but it has to be appropriate and have clear added value. As the saying sort-of goes, 'you can buy a man a fish, but if you teach him to fish using only VR, then he still has no fish and you'll probably have to buy him one anyway'!

Discussion

Following the regressive and progressive stages, we turn to the analytical phase, which considers both the past and the present, where 'one's distantiation from past

and future functions creates a subjective space of freedom in the present' (Pinar, 2010, p. 178). This, however, presents a challenge as we acknowledge that as academics working in the field of educational technology, it would be hard, if not impossible, to do this objectively, without reflecting, or acknowledging, existing theories, and our own potential biases. But, we suggest that such subjectivity 'is something valuable, rather than problematic, [and] is a key aspect of qualitative sensibility' (Braun and Clarke, 2023, p. 12). Indeed, Strong-Wilson (2015, p. 613) labels *currere* as the 'critical and engaged study of subjectivity in education'. In this spirit, we also attempt to re-enter the circumstances typifying the present and synthetically listen carefully to the autobiographical inner voices of the participants to ask, 'What is the meaning of the present?' (Pinar, 2010, p. 178).

In our 'returns to the past' (Pinar, 1975, p. 21), we explored the starting point of our separate and shared curriculum journeys. These took many forms, such as a 'thrill', 'awe' or 'excitement' at the concept of technology itself; it was 'novel, fun and exciting!'. They often demonstrated the innocence and purity of first experiencing technology in education. This was evident even in the early days of technologies, however unsophisticated they were compared to more modern technology: 'The sight of the monitor lighting up, the hum of the CPU, and the click of the keyboard fascinated me. This moment opened a world that felt vast and limitless, anything seemed possible with just a few clicks.'

The regressive fragments also show a variety of frustrations, or barriers, to technology use. Although discussing teachers, Ertmer's (1999) concept of first- and second-order barriers to change is useful in framing these frustrations. Ertmer describes first-order barriers as institutional, those *external* to the teacher, such as missing resources or inadequate training. This also chimes, however, with the frustrations of, in our case, learners. For instance, the lack of sufficient computers, technical issues or poor internet. Nevertheless, when removed from the 'horizontal thinking' (Pinar, 1975, p. 407) of present struggles, we suggest that, despite any barriers, technology still had the ability to capture, inspire and amaze; and different technologies excited in different ways from drawing complex shapes to saving time in maths.

Ertmer's (1999) second-order barriers are personal, or *internal*, to the teacher, and reflect beliefs about teaching and technology – specifically computers – and may negatively affect the ability to implement change. In our case, first-order, external barriers as learners, did not lead to second-order personal barriers

when using technologies as educators. In fact, regression allowed new insights into the subtle realisation of the potential of technologies, summed up as 'I absorbed a sense of how technology could open doors, transform work, and create new opportunities'. The progressive fragments suggest that we were consciously, or unconsciously, influenced by realising the affordances of the technologies, that is 'the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used' (Norman, 2002, p. 9). Put more simply, Hammond (2010, p. 206) provides the example of a tree, which can offer shelter from rain, food, somewhere to hide, but

> The properties of the tree remain the same, or invariant, but the opportunities provided the tree differ according to need. Further, the same tree might afford different things at the same time to different organisms.

In terms of technology the regressive texts show a recognition of the pedagogic affordances of a wide variety of existing and emergent technologies, especially Artificial Intelligence (AI). Significantly, the same technology affords different things to different educators, depending on their need, or, most importantly, those of their students. The clear recognition of different affordances forms the basis for the advocation of an altruistic use of technology across the curriculum, and in assessment. Indeed, a sense of social justice and equity is inherent in the reflections. In addition, it is important to remember that learners of all ages can also recognise technological affordances and it is important that educators empower them to exploit them in their own learning, especially in Wales, a core purpose of education is to enable 'ambitious, capable learners, ready to learn throughout their lives' (Welsh Government, 2024).

   The fragments show a rejection of technological determinism (where the future of education is driven technology), in favour of the *pedagogic* use of technology (where pedagogy drives the selective use of technology). As one participant asserted, technology use in learning and teaching 'has to be appropriate and have clear added value'. Although *currere* shows us that the running of the course is the focus, it is important to go forth with a 'heightened intuitive sense of where one may go' (Pinar, 1994, p. 59). A vision emerges of a future where technologies, particularly AI, will not replace teachers. Instead, they will be part of an agile teaching toolkit, to provide more equitable learning experiences for an increasingly

diverse student body, including: immediate support and guidance to students; personalised support; intelligent tutoring systems; robust, personalised learning journeys for students to self-pace their studies, while balancing other life demands; and acting as a 'virtual me'.

We concur with Facer and Sandford's (2010, p. 74) contention that education is a 'future-facing activity', and also share their rejection of the view of future as 'a singular, inevitable trajectory in the face of which educators and citizens have no agency' (p. 750). We suggest that the educators in this study not only recognise the importance of agency for themselves and learners, but, as important, they share hope and a vision of a transformative role for technologies in education at all ages, to benefit both learners and educators.

References

Braun, V. and Clarke, V. (2023) *Thematic Analysis: A Practical Guide*, London: Sage.

Ertmer, P. A. (1999) 'Addressing First- and Second-Order Barriers to Change: Strategies for Technology Integration', *Educational technology research and development*, 47(4), pp. 47–61.

Facer, K. and Sandford, R. (2010) 'The next 25 years?: future scenarios and future directions for education and technology', *Journal of computer assisted learning*, 26(1), pp. 74–93.

Hammond, M. (2010) 'What is an affordance and can it help us understand the use of ICT in education?', *Education and information technologies*, 15(3), pp. 205–17.

Kanu, Y. and Glor, M. (2006) ''Currere' to the rescue? Teachers as 'amateur intellectuals' in a knowledge society', *Journal of the Canadian Association for Curriculum Studies*, 4 (2), pp. 101–22.

Kennewell, S. (2001) 'Using affordances and constraints to evaluate the use of information and communications technology in teaching and learning', *Journal of Information Technology for Teacher Education*, 10 (1-2), pp. 101-116.

Norman, J. (2002) 'Two visual systems and two theories of perception: an attempt to reconcile the constructivist and ecological approaches', *Behavioural and Brain Sciences*, 24 (6), pp. 1–62.

Pinar, W. (1974) 'Currere: Toward reconceptualization' In: J. Jelinek (Ed.). *Basic problems in modern education* (pp. 147–71). Tempe, AZ: Arizona State University, College of Education.

Pinar, W. F. (1975) *The method of currere* [Paper presentation]. American Educational Research Association (AERA), Washington, DC, United States.

Pinar, W. F. (1994) *Autobiography, Politics and Sexuality: Essays in Curricular Theory 1972-1992*. Peter Lang Publishing.

Pinar, W. (2010). 'Currere'. In Kridel, C. (Ed.) *Encyclopedia of Curriculum Studies* (p. 178). California: SAGE Publications, Inc.

Pinar, W. F. (2011) *The character of curriculum studies: Bildung, Currere, and the recurring question of the subject* (1st ed.). Palgrave Macmillan.

Strong-Wilson, T. (2015) 'Phantom traces: Exploring a hermeneutical approach to autobiography in curriculum studies', *Journal of curriculum studies*, 47(5), pp. 613–32.

Wang, H. (2010) 'The temporality of currere, change, and teacher education', *Pedagogies*, 5(4), pp. 275–85.

Wang, W. (2020) *Chinese currere, subjective reconstruction and attunement—When calls my heart.* Palgrave Macmillan.

Wang, W. (2023) 'Teacher Knowledge and Currere', *New Waves-Educational Research & Development*, 26 (2), pp. 1-24.

Welsh Government (2024) *Introduction to Curriculum for Wales guidance,* Available at https://hwb.gov.wales/curriculum-for-wales/introduction-to-curriculum-for-wales-guidance/ Updated 31.01.24 (Accessed 03.12.24)