

The Factors Influencing the Digital Transformation in Welsh Schools: From Policy to Practice

Rebekah Eve Bawler

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SUMMARY

This research explores how digital education policy in Wales is enacted within primary schools. The focus is on the roles of leadership, professional learning and infrastructure to develop a digital mindset, emphasising the organisational level, rather than the classroom-based delivery of digital skills to learners.

Through a qualitative case study of two digitally leading primary schools and augmented by interviews with policy advisors and document analysis, the research investigates the characteristics and features of these schools along with the barriers they face in enacting their vision at a strategic level.

Drawing on Enactment Theory (Ball et al, 2011a), Communities of Practice (Lave and Wenger, 1991) and supported by two significant pieces of research around digitally competent schools (Tearle, 2004 and Pettersson, 2017), the research considers the roles of policy actors, particularly the central role of the headteacher, in developing, implementing and sustaining an organisation-wide digital mindset within their school community, creating a culture of using digital tools and technologies by staff. This research aims to explore how national policy is translated into school-based reality and considers to what extent these theories explain the development of a digitally competent school learning organisation.

The research found that there are both external and internal factors that influence how individual schools enact digital policy, and within these there are four overarching themes which interlink. External factors include the themes of national policy and infrastructure; Internal factors include the themes of leadership and professional learning.

The study offers recommendations for policy makers, local authorities and school leaders to support all schools across Wales to become digitally enabled, suggesting a model that consists of a strategic, coherent national focus to harness the potential that digital tools and technologies can bring to school staff and help to provide equity of access to digital tools for all.

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1. INTRODUCTION

1.1 THE DIGITALISATION OF EDUCATION

Despite the continuous evolution of our world into a digitally enabled era, the educational system stays tied to the 9am-3pm Monday to Friday - teacher as “sage on the stage” (King 1993) model. In contrast to the increasing adoption of digital tools in other workplaces such as business and health; and when we live in a society that thrives on 24/7 access to media, entertainment, shopping, and banking; education has been slower to embrace technology (UNESCO, 2023). The notion of a technology-based revolution in education is not a novel concept – Thomas Edison foresaw a shift in education through the development of motion pictures replacing the need for textbooks, back in 1913 (The New York Dramatic Mirror, 1913, cited in Keeler, 2012). However, the predicted disruption by this technology has not materialized to the extent he foresaw.

The landscape began to dramatically shift during the COVID-19 pandemic when emergency remote learning became a necessity. Teachers were compelled to adapt to new methods of teaching and learning, those via a screen, in challenging circumstances, sparking a momentum towards digitalized methods. This transformation extended beyond teaching and learning; some schools increasingly considering how to leverage digital technologies for workload efficiencies, time reduction, and enhanced collaboration. (UNICEF, 2025; Open University, 2025). However, following the return to school-based learning after the Covid-19 pandemic lockdowns, the focus shifted from digital to learner achievement in basic literacy and numeracy as well as a focus on social skills and wellbeing (Welsh Government, Miles, 2023).

In the past five years, the integration of digital tools and technologies into teaching has become apparent. A wide range of EdTech providers including global corporations such as Microsoft, Adobe and Google have developed platforms that offer an education focus, and there has been an increase of digital strategies in schools (Baxter, Floyd et al. 2023).

Recently, with the rise of open-access generative AI models, such as ChatGPT, entering the mainstream and into our schools, (Zhang and Aslan 2021), there is a pressing need for digital development in schools in terms of both teacher's knowledge and skills, and in terms

of how schools strategically plan for their use of technology to benefit the learners and the staff.

Schools face many challenges when navigating the perceived opportunities and risks associated with digital tools. While some schools make headlines for banning mobile phones, others harness the potential of hybrid lessons to share expertise across institutions. However, school leaders and teachers must navigate this on a school-to school basis and balance the potential benefits with the clear and well publicised risks. Affecting technological change within the traditional school system, designed in an era vastly different from our own, therefore remains a slow process. The logistics of classrooms, and the role of teachers seen as those who impart fixed knowledge persist despite a changing world. Urgency is paramount – the need for swift and comprehensive strategic digital development in schools is vital to prepare students for the demands of the modern, digitally-driven world, and to attract people into teaching as a modern profession (OECD, 2023; EEA, 2025).

1.2 MY PROFESSIONAL CONTEXT

Since starting my career in 2003, I have adapted to changes both in terms of what I am teaching (subjects and content) and the methods by which I teach depending on what the current thinking was around pedagogy. Holding a degree in Psychology and a PGCE in French and then teaching a large proportion of Religious Education for the first 8 years of my career meant that I was able to learn a range of different approaches to teaching and draw on the expertise of practitioners in these different subjects and from a breadth of professional learning opportunities. Making the transition from blackboard to whiteboard, from overhead projector to data projector and PowerPoints, from paper registers to online systems, coincided with the development of my own professional craft. Returning from maternity leave in 2011, I attended a training day with my Head of Department on the use of iPads in the classroom, leaving with both an iPad and a wealth of ideas of how this would transform our classes.

Becoming Head of IT two years later and championing the use of iPads as a tool for teaching and learning, the school embraced this technology and invested heavily in devices. However, there was a lack of subject focused professional learning for teachers in using digital tools effectively for all learners, and an over reliance on IT subject leads in school to develop and drive forward the use of digital devices at that time.

During this time, the Digital Competence Framework (Welsh Government, 2017), was being developed along with Hwb (www.hwb.gov.wales), our national platform in Wales, and schools were increasingly switching to digital methods to support the administrators, teachers and students daily. Moving to a new school in 2017, I assumed the role of the main lead for digital across the school, coordinating the development and purchasing of infrastructure and devices, supporting teachers in effective use of digital technologies and leading on the curriculum areas of ICT and DCF. There was, however, still a lack of professional learning for leaders, existing teachers and those training to become teachers around how digital tools and pedagogies could support their work as well as prepare their

learners. Critically there was a lack of support for leaders on how digital should be led effectively, a lack of awareness as to what makes a digitally competent school, both for its learners and for its staff. In 2018, with the full support of my headteacher, I began my EdD journey to research how digital can be led and grown in schools so that its potential can be realised for the benefit of all in the school community.

1.3 RESEARCH OUTLINE AND AIMS

This research looks to understand how school leaders adopt and adapt to these new digital technologies, the role of policy, and its enactment at school level - needed before a school can even begin its digital journey. I will outline how, despite a growing emphasis on the role of digital tools in schools in Wales over the past decade particularly, there has been little research into what factors are needed to become a digitally competent school. I draw on findings from existing policy, policy advisors in Wales, and from two case study schools who are leading the way in creating their own digital vision, to provide context so that other school leaders in Wales, or even globally, can apply this to their own school community. With the ever-changing technological landscape, this research may support schools to see the key components needed to develop an organisation-wide digital mindset.

This thesis focuses on how schools translate and enact education policies in practice, focusing on those policies around the use of digital tools in schools considering the ever-increasing importance of digital tools and technologies in our modern world.

This does not focus on the curriculum for learners, the Digital Competence Framework itself, nor considerations of the ethics around using digital tools in the classroom. Instead, this research considers the broader digital needs of school staff, the leadership requirements to enable this, and the consideration of how schools can become digitally competent learning organisations and develop a digital mindset.

This research utilises an illustrative case study approach with two cases, to show the factors that are needed to ensure schools have the tools they need to become digitally competent. The research methods used in this study consist of semi-structured interview, document analysis, and focus groups.

This research is with two primary schools, (from the same local authority, and who are lead digital schools within that area), to consider how policy translates through the leadership to the teachers and wider staff. This research aims to investigate the many factors that schools

must constantly negotiate in the changing digital landscape to provide staff with the best digital experiences and provision.

This research gained data from a sample of “Elite” participants; those who have or have had, an influential role in the support at regional or national level around the adoption of digital practices in our schools. These interviews considered how these digital policy areas were envisaged at their start and through their development, to give background and context to those policies in use in schools today.

The significance of this research is that it aims to provide a link between Welsh policies around digital citizenship and digital futures and how the various policies and documentation provided by the Welsh Government come to be enacted in different schools. It will also consider how school leaders are successfully adopting a digital culture within their schools and how other schools could learn from these.

The importance of becoming digitally competent as learners cannot be underplayed in our modern world and preparing them for this digitally enabled world is critical. To carry out this, schools and teachers need to be digitally competent as well.

Positioning this thesis in Wales, a country with a digital national education platform, (Hwb), and a national digital strategy in place; the thesis aims to show how our most digitally competent and confident schools are leading the way. However, Wales is a small country in the UK, with a devolved and divergent education system to that of its nearest neighbour, England. Comparing it to England, Wales does not have multi-academy trusts running schools, they are still under the control of local authorities. Wales has developed a new curriculum, (Welsh Government 2022), which was constructed at a local level by schools, for schools, and allows for school-to-school differences, rather than following a prescriptive, one size fits all style, national curriculum. Furthermore, Wales has no standardised assessment tests (SATS) for learners, has kept A*-G graded GCSEs, and has embraced a national entitlement for professional learning. Despite these facts, the findings are less about the

nation, and national policy. itself and more about the school level enactment of existing and evolving policies, moving toward digitalisation in schools. For this reason, although set in a country with a strong digital agenda in place, this research may be applicable further afield.

During the years taken to complete this EdD, digital in education has continued to move forward, mostly recently with the gradual introduction of Generative AI tools and the ethical discussions around its place in our young people's lives. Whilst schools are behind the curve compared to business and personal use, many are nonetheless trying to mitigate education systems to incorporate this game changing digital tool (Ofsted, 2025). In Wales, guidance for the use of AI in schools was released in January 2025, and guidance for keeping learners safe was amended to include AI tools prior to this (Welsh Government, 2025).

1.4 THESIS STRUCTURE

Chapter 2 is an overview of national policy and background in Wales around digital.

Chapter 3 is a detailed review of the empirical and theoretical literature around the area of digital development in schools.

Chapter 4 outlines the methodological and research approaches taken to data collection and analysis.

Chapter 5 provides the findings, which are divided into external and internal factors.

Chapter 6 is a discussion linking those findings to the theoretical framework and models.

Chapter 7 offers conclusions and discusses the implications from this research.

2. CONTEXT

This chapter will give an outline of the national context in Wales, placing it within the global digital policies and within its own curriculum framework. During this chapter I will describe several of the key policy areas that schools are working within that link to digital both with education directly and wider national priorities. This context chapter will support the understanding of the current education situation in Wales, which is where the research is based.

2.1 GLOBAL TEACHER DIGITAL SKILLS

The Survey of Schools: ICT in education took place across the European Union in 2006, 2011 and again in 2018 (European Union, 2006, 2011, 2018) and surveyed different aspects such as infrastructure, teachers' access, students' access, teacher and student confidence, leadership and attitudes.

Almost without exception, by 2011 there was an increase in the use of ICT by teachers in every category that was surveyed, and that teachers reporting the use of ICT to prepare lessons was consistently over 95% for all ages of students (European Union, 2011) Whilst there is no comparative survey data collection of teachers specifically in Wales, the increase in digital use across the population as measured by the Wales: A Digital Nation survey (Welsh Government, 2010) would suggest these figures would be replicated in a Wales cohort.

The Survey of School 2018 (European Union, 2018), identified that UK schools were more highly equipped than the EU average, had teachers who self-reported higher levels of digital competence than the EU average but less specific training around digital pedagogies and subject specific ICT use.

2.2 GLOBAL POLICY

Across the world, particularly since the Covid-19 pandemic, many countries and territories have been developing education policies around the use of digital and ICT tools in schools. Many of these education ICT policies look at digital readiness and consider the human rights element of access, underpinned by UNESCO's Sustainable Development Goal 4 (UNESCO, 2022). These sustainable development goals outline a range of considerations for schools to develop an "open school" system, where technology integrates with in-school learning. The European Union Digital Education Action Plan "sets out a common vision of high-quality, inclusive and accessible digital education in Europe." (European Commission 2020 webpage, paragraph 4).

Individual countries such as Ireland's Digital Strategy for Schools to 2027 (Irish Government, 2022), Finland's Digital Compass Strategy (Finish Government, 2025) and Singapore's EdTech Masterplan (Singapore Ministry of Education, 2025) have all created country level digital education plans that acknowledge the need for leadership, professional learning and infrastructure.

2.3 WALES A DIGITAL NATION

“We want everyone in Wales to enjoy the benefits of digital technologies” (Welsh Government, 2010, p3). This was the lofty goal set by the Welsh Government in 2010, with expectations outlined as to what this would look like in 2020.

Transforming the public sector, providing an infrastructure, developing individuals' skills and creating a thriving, inclusive society and economy were always going to be a huge undertaking. In 2010, Wales: A Digital Nation report, (Welsh Government, 2010) noted that 74% of Welsh households had internet access, up from 49% in 2005, but both individuals and businesses in Wales were not yet utilising the internet to its full potential and were lagging other countries. Furthermore, The Bevan Foundation (2009), cites reports which found Wales had the least number of young people connected online (63%) across the UK and the biggest gap between high and low deprivation households (94% in Wales compared to 45% across the UK). Whilst the sample was reasonably small, (just over 1,500 young people of which only 69 were Welsh), the findings sparked further research and government policy (Bevan Foundation, 2009). The Welsh Assembly Government committed to providing basic internet supply across Wales by 2011 and a 30MBps connection to all households by 2020, to address the digital divide that is prevalent across the country. By 2019, 87% of households had internet access, with 98% of households with children under 16 having a connection (National Survey for Wales, 2019). Wales had almost achieved its connectivity goal.

One aim of the Wales a Digital Nation report was that by 2020:

“...Digital Wales has transformed learning. Education services have used digital technology to create entirely new teaching and learning experiences as well as enhancing existing ones”. (Welsh Government, 2010, p.8).

The commitment to becoming a digital nation by the Welsh Government was primarily based on having sufficient digital access (Welsh Government, 2010). However, this is only the

beginning, and to truly become a digital nation there was a need to introduce and invest in digital skills for the population. The Digital Strategy for Wales (Welsh Government, 2021), which covers a wider remit than just education, offers six missions, one of which focuses on the improvement of digital skills so is linked to the education system. However, within the education sector itself there is no one specific and complete digital policy directive. There is therefore a fundamental gap in terms of policies which support schools to becoming digitally competent, to develop a digital mindset, and what factors need to be considered by school leaders to fully harness the potential of digital for their learners and their workforce.

2.4 CURRICULUM IN WALES

Since 1999, education policy, amongst other policy areas, have been devolved to Wales from Westminster as part of the creation of the then National Assembly of Wales (Institute for Government, webpage). This has developed over time with the reform of the national curriculum and most recently the introduction of curriculum for Wales (Welsh Government, 2022). In 2020, the National Assembly of Wales was recognised as a parliament and the name changed to Senedd Cymru (Welsh Parliament) from that point (Senedd Cymru, 2020). Education policy making in Wales now comes directly from Senedd Cymru (Senedd Cymru, 2020).

Following the 2009 PISA results, Wales embarked on a new curriculum plan, beginning with a commissioned report (Donaldson, 2015) and culminating in The Curriculum for Wales, which was introduced from September 2022. This curriculum aims to promote authentic learning opportunities and a bespoke, local curriculum for all. These ideals are like those shared by John Dewey (1897) in his Pedagogic Creed, who believed that schools should reflect the learning in the home and the locality and that this should represent real life for the students.

The curriculum was co-constructed using pioneer schools (who were self-selected) and wider stakeholder groups to develop a core framework that underpins the taught curriculum in each school across the country, rather than a prescribed curriculum in its entirety being dispatched out to schools. The premise of this new curriculum is to allow for diversity of approaches and topics, the potential for an ever-evolving curriculum across a nation. (Welsh Government, 2022)

As part of the curriculum, schools must decide on their own reference points and programmes of study which must fit into the six Areas of Learning and Experience (AOLEs), which are:

- Expressive Arts
- Health and Wellbeing
- Humanities
- Languages, Learning and Communication
- Science and Technology
- Mathematics and Numeracy

Each of these AOLEs then have a series of What Matters statements, breaking down the content further into high level content, and then each What Matters statement has a series of Progression Steps to support school show learner progress. As set out in policy guidelines, schools are free to deliver whatever content they wish if it enables pupils to meet these progression steps and What Matters Statements. The emphasis of literacy, numeracy and digital skills across all subjects in the new curriculum is intended to help the transferable life skills of our next generation of workers, who are intended to benefit from these skills as they move between career paths during their lifetime.

The inclusion of digital skills as a cross-curricular skill alongside literacy and numeracy, places a clear importance on them for learners, and should, following Ball et al's (2011a) thinking, give a clear reason for the enactment of digital policies.

2.5 A DIGITAL CURRICULUM

When looking closely at the education system in schools, and through reports from the independent regulator Estyn, it appears that Wales was not yet fully realizing this aim nine years later. (Estyn, 2019) Yet the use of digital tools in everyday life continues to rise. In the latest National Survey of Wales 2024/25, 96% of respondents (11,520/12,000), reported using the internet several times a day - an increase from 85% in the National Survey 2017/18 (Welsh Government, 2018)). This level of usage demands a level of digital skill so that people can effectively and safely negotiate the online world. To ensure that our learners can take their place in the modern world successfully, the digital skills of the nation must be addressed at school level.

One way to improve digital competency across Wales is to tackle digital competency in schools so that the nation's young people can enter the world as digitally capable.

An ICT steering group in 2013 introduced concept of the Digital Competency Framework (Welsh Government, 2017) for school pupils, a cross-curricular continuum of learning focused on four strands of digital awareness, like the pre-existing Literacy and Numeracy Frameworks. This only became statutory in 2022 with the introduction of Curriculum for Wales.

2.6 ECOLOGY OF DIGITAL TECHNOLOGIES IN WALES

To improve learner digital competency, Wales also invested heavily in a national learning platform, Hwb, which continues to evolve and change. To date, this investment has been over £190million and the Hwb platform is free to access for all school learners, staff and governors along with those following initial teacher training. The platform provides access to a range of software including partnerships with Google, Microsoft and Adobe to offer free access for all students and teachers in Wales. In addition, the Hwb programme offers an annual EdTech fund automatically to schools, via the local authorities to purchase a range of digital devices. This commitment also included the provision of highspeed broadband access and up to date Wi-Fi routers in schools across the country (<https://hwb.gov.wales/timeline>). This shows a commitment by the Welsh Government, including a financial outlay over a considerable period since 2012 and including two national elections (2016 and 2021), to improving the digital offer to schools.

2.7 SCHOOLS AS LEARNING ORGANISATION AND PROFESSIONAL STANDARDS

In 2016, the OECD found that schools should be learning organisations. The Schools as Learning Organisations Model (SLO) was adopted by Welsh education system in 2020 as a non-statutory model, initially as a vehicle to support schools to prepare for the new curriculum and more recently as part of school's self-improvement journey (Welsh Government, 2020). The use of ICT for collecting and exchanging knowledge, for communication and for collaborative learning is stated within the model as part of good practice. Whilst the term ICT is used in this document, relating often to a more business-like use of digital tools, the recognition that digital tools and skills are needed to work through the SLO Model is a strong start point for schools to build a digital vision and plan on, even if the model is optional for schools.

However, within the new statutory teacher standards in Wales, it states:

“...the teacher consistently extends knowledge, skills and understanding and can show how reflection and openness to challenge and support informs professional learning to progressively develop pedagogy.” (Welsh Government 2018).

This allows teachers to self-identify digital competence as part of their own professional development and therefore take steps to make their own improvements supported by their schools.

2.8 THE DIGITAL PROFESSIONAL LEARNING JOURNEY

The Digital Professional Learning Journey (Welsh Government, 2021) follows a similar trajectory to that of the SLO Model (Welsh Government, 2020) for schools and is specifically designed to allow schools to focus on the single area of digital transformation, to adopt an organisation-wide digital mindset.

Its four central themes were:

- Leadership (Vision)
- Curriculum / Pedagogy
- Professional Learning
- EdTech / Infrastructure.

The expectation was that schools using the DPLJ (Welsh Government, 2021), and its supporting toolkit, the 360 DigiCymru, would be able to effectively reflect on their digital journey so far and plan for sensible and sustainable development. This could also be utilised in conjunction with significant funding from Welsh Government in the form of the EdTech Fund, (£190million spend since 2020) allocated to schools via local authorities annually to support the digitalisation of schools. From data gathered during the Elite interviews, the DPLJ (2021) is not yet well used at school level (estimates of just over 1/3 of all maintained schools in Wales) and is still therefore in its infancy in terms of the support that is offered to schools from school improvement partners for them to make progress.

2.9 THE INFLUENCE OF A GLOBAL PANDEMIC

At the start of 2020, four years after the statutory introduction of the Digital Competence Framework and ten years after the initial commitment for Wales to become a digital nation, schools across the country were not close to becoming digitally competent learning organisations. According to Estyn (2019) – the education and training inspectorate for Wales:

“The development of pupils’ ICT skills continues to be a priority area for many schools and pupils’ ICT skills are not as well developed as those for literacy and numeracy.”

After that review however, Wales along with the rest of the world had to manage the global pandemic Covid-19 which forced schools in Wales to close their doors in March 2020 (Welsh Government, 2020e). Livari et al., (2020) argued that this pandemic did more to move the digital agenda forward as teaching and learning become remote and teachers were forced to digitally upskill and take their lessons online.

Online learning, or more specifically blended learning had been proven to deliver as good, if not better outcomes to student achievement as classroom-based provision alone (Protopsaltis & Baum, 2019). However, under pandemic circumstances these methodologies had not been tested, and the most effective remote learning sessions were those that were well planned, well designed and included high-quality interaction opportunities (Welsh Centre for Public Policy, 2022). Coupled with research into the perception that increased parental participation was required during emergency remote learning to aide student achievement (Spear et al, 2023), and continued concerns over the digital divide between socio-economic groups (Coleman, 2021), meant that despite Wales having adopted the Hwb platform and a Digital Competence Framework some years earlier and invested heavily to mitigate for digital exclusion, teachers and learners (and parents) were still not digitally ready for wholesale move to emergency remote education.

During and since the Covid-19 pandemic, Wales has produced Learning Continuity Guidance for Schools (Welsh Government, 2020) which is updated regularly and supports schools in meeting the needs of learners for periods of unexpected short-term disruption to normal schooling for either individuals, groups of learners or the whole school. These disruptions may include illness but also consider building safety issues such as the Reinforced Autoclave Aerated Concrete (RAAC) situation in September 2023. The latest version of this document states that:

“One of our key levers in addressing learning continuity is to ensure that we build on the excellent practice in digital which was accelerated during the pandemic” (Welsh Government, 2023)

2.10 MANAGING CHANGE

A process of change management is therefore required for school leaders to guide and move a school, particularly at this current time in the Welsh education system with the new curriculum being implemented (Welsh Government, 2022), and new qualifications (Qualifications Wales, 2024) on the horizon, and the rise of GenAI in society and education (Welsh Government 2025). In terms of change management, it is important that both the culture and environment of the organization is considered prior to change taking place. Change cannot be identical across schools, or imported from elsewhere (Fullan, 2000) but must reflect the culture, demographics and history of the organization, alongside the beliefs and values of the school leaders and teachers who will be required to make the changes (Fullan, 1992). Potentially this list of stakeholders could also include the governing body, local authority, Estyn and parents all of whom also play a part in the development of a culture in the school. Senge (1992, cited in Tearle, 2004) suggests that by being a “learning organisation” there is a willingness to embrace change and become adaptive and responsive to the organization’s needs. This point reflects the OECD’s argument that all schools should be viewed as learning organisations.

Wales is now building on its digital journey in schools with the conception of the Digital Education in Wales (Welsh Government, 2025) document, which outlines the key themes and priorities for policy makers, support partners and schools to move toward a more digitally inclusive and competent school system. This thesis aims to start that conversation in Wales, suggesting how existing guidance such as the Digital Professional Learning Journey can be developed to support our schools in developing their own digital mindset.

2.11 CONCLUSION

This chapter has outlined some of the context behind schools in Wales and the digital policy and practice that has been evolving. There is variation across our schools, and between our nation and that of other countries. However, there is a commitment, particularly through the Hwb programme, to make digital a success for learners across Wales. The enactment of these policies at school level are the focus of this thesis.

3. LITERATURE REVIEW

In this chapter I will outline some of the literature around how schools develop digitally, particularly considering the enactment of policy by school leaders and some of the wider issues around digitalisation in schools. This chapter will also consider the impact that Covid-19 has had on the standing and importance of digital in education across Wales.

When conducting the initial literature review in 2020, I noted that there was a lack of recent literature around digitalisation in the mainstream education (3-16) sector in the UK, and whilst there is increased literature particularly on post-Covid developments and blended or online learning, there are still research gaps in this area, particularly from Wales. This is not the case in other public sectors, particularly healthcare, where there is an increasing body of research around the digitalisation of our health system (Abernethy et al, 2022). Many of the studies that do consider schools, particularly the larger scale data collection and systematic reviews, were completed prior to 2018, some dating back to 2010. However, they are important here to show that despite technological changes in that time, the education system is not yet showing any significant change to its own working practices, specifically around administrative tasks, at least not ones that are recognised in research. There are more recent studies (Thompson & Harris, 2025; Otto et al, 2024) that consider the changes for those working in the Higher Education Sector. However, the leaders and educators in these settings are not subject to governmental education policies or curriculum in the same way as schools are, so the comparison is somewhat limited for this research. A further potential reason for this gap in the research evidence comes from lack of access to UK schools for research purposes between 2020 - 2022 due to Covid-19 restrictions.

The identification of learners being deskilled in core areas such as literacy, numeracy and social skills on the return to schools post-Covid and the imperative given to schools to focus on those aspects also reduced opportunities for research access around digital skills (Welsh Centre for Public Policy, 2021). Although this is now changing, there remains a gap

between 2020-2023 of relevant, school based academic research both in Wales, the UK and Worldwide that focuses specifically on the digital changes in schools as organisations.

Furthermore, it is important to consider that digitalisation within educational change may not be an easy process, and the development of a school's ICT culture is varied across schools even when there are national programs in place (Blau and Shamir Inbal, 2017), and that the organisation cannot change until all individuals within it implement the changes.

Any change of a school's culture and systems requires a great deal of forward planning. Cuthell (2006) compares educational change to that of a super tanker changing course, and this is particularly appropriate when considering how a school develops to become more digital, requiring a fundamental change in the way a school administration and classroom operate. The involvement of senior leadership and the readiness of teaching staff both play a part in the success, or lack of, in integrating technology into schools (Dimmock, 2013). Over the past decade as technology has become almost ubiquitous in our homes and workplaces, it has had to filter into our schools. For example, the National UK Survey showed that 96% of homes had internet access, 76% of UK adults banked online and 87% shopped online (Office of National Statistics, 2020). In recent years, as well as the need to prepare learners for this digital world, schools have also managed the added challenge of a global pandemic and, in Wales, prepared for the introduction of a new and substantially different curriculum to previous iterations in our schools. This all impacts on the focus of the leadership and the time available to make these changes.

Digital technologies have now reached over 50% of the developing world's population in two decades (United Nations, 2020) and following the global Covid-19 pandemic, digitalisation has increased in advanced economies too, narrowing previous gaps between the most and least of these nations (Jaumotte, 2023). Therefore, there is a need for schools to adopt digital approaches, not just in the classroom but throughout their organisation. This offers immense potential for fundamental improvement in schools to both keep up with modern

society and to enable the preparation of our learners for the world in which they are living (Timotheou et al. 2023).

Something as fast paced as digital technology, especially when we consider the additional factor of a global pandemic, forcing schools and students online to complete emergency remote learning, requires an adaptability on the part of schools to keep up with the pace and expectations associated with change. For this reason, I believe that research should consider the current situation in schools and how most schools are moving forward to a more digital way of thinking, how policy is reflected in the schools and how school leaders and teachers are managing the digitalisation of the sector for the benefit of the learners. This is a gap that I am intending to begin to fill with this research.

The need to build in these factors to schools in Wales is important, considering national policy direction both around digital public services, digital inclusion and within the Curriculum for Wales itself. However, there are barriers for schools, particularly around financial commitments and around the skills of those employed in schools, many of whom were educated in either the pre-digital or early digital age themselves. During this chapter I will introduce the concept of Enactment Theory (Ball et al, 2011a) which has lent theory to this research as it considers the way in which schools enact policy. I will consider some of the research around digital technologies in schools, drawing on two specific pieces, Tearle (2004) and Pettersson (2017) that have influenced the research. Finally, I will discuss Communities of Practice (Lave and Wenger, 1991), which became of increasing interest to me whilst analysing the findings, as a theory which also showed how schools can learn together when introducing new concepts. However, I begin with the theoretical framework, showing the perspectives in which this research was undertaken before returning to the details around Enactment Theory, Communities of Practice and wider influential research.

3.1 THEORETICAL FRAMEWORK

The theoretical framework for this thesis draws on a range of work focused on how policy becomes practice within schools. The process of arriving at the use of Enactment Theory (Ball et al, 2011b) and Community of Practice (Lave and Wenger, 1991) came through consideration of several other perspectives.

For many years, the research around EdTech has focused more on a learning science approach rather than a social science approach, emphasising learning rather than education (Selwyn, 2015). As this thesis is less focused on the teaching and learning of digital skills by students and instead considers how schools adopt and integrate digital technologies into their organisation, the theoretical framework requires more consideration of social action, change management and culture.

A significant piece of research in this work was that of Pettersson (2018) who draws on CHAT (Social-Cultural Activity Theory) framework in her research. CHAT views all activity as socially, historically and culturally located rather than stemming from an individual's thought. With its focus on a community approach, it lends itself to the concepts explored in this thesis as school leaders draw on the wider context of their organisation to develop their own internal policies and guidance. Whilst the CHAT framework could form a suitable theoretical lens for the research, it seemed that it focused on practical application within education at the classroom level rather than within the development of a digital mindset across the school.

Somekh (2008) suggests that a Socio-Cultural Theoretical approach, an adaption of CHAT, is now more appropriate than ever when considering change in schools. Despite the same national policy directives, schools will differ in their approach to the enactment of these policies and how they change the school in recognition of them. Socio-Cultural Theory suggest that learning is co-constructed and knowledge is shared amongst groups of individuals, through

shared activities. Schools, particularly in Wales are now driven by principles of co-construction to fulfil the curriculum requirements, and the schools as learning organisations principles also emphasise the need for shared understanding. When looking at curriculum development, Socio-Cultural Theory could fit well, however when considering the added factors of infrastructure availability, curriculum requirements and administrative functions of digital then this theory was not wide enough for this research.

Another consideration was that of the Expectancy-Value Theory (Vroom 1964, Eccles et al 1983) which emphasises how teachers place value on their choice of professional learning. This theory considers that choices are motivated by both the expectations for success and the task value. In terms of prioritising professional learning around digital skills and tools, it would be important to consider the staff member's expectation for success, the environmental influence (of the schools' priorities and learning culture) and the perception of the task value for their own professional future. In terms of digital skill development, Expectancy Value Theory would suggest that staff would choose to develop their digital skills only if motivated by the probable success they would have and if they value developing digital skills. This theory was limited for me in terms of its emphasis on professional learning, which is only part of how school leaders develop a digital mindset across the school.

Work by Alexander (2000) shows that pedagogy is influenced by culture and that in turn is influenced by national policy and politics. Whilst the pedagogy is the element of education that directly influences learners, decisions made around the culture and context of the school and how to enact the national education policies will be of critical importance to the day-to-day experiences that our learners receive. The vision of first a nation and secondly of a headteacher will strongly influence the pathways taken by a school, and the importance of context and culture is becoming ever more prevalent in Wales with the development of the new curriculum.

Enactment theory (Ball et al, 2011a) considers more specifically at how these policies themselves are interpreted and recontextualized within local settings rather than being simply implemented within a classroom environment and still allows consideration of the role of professional learning as Expectancy Value theory does. It focuses on how leaders and teachers shape their own practice from the policies distributed to them and the context and actors within the school itself. By looking outside of the classroom first, Enactment theory enables this research to look at the principles that school leaders have drawn on across the two schools to develop their own digital mindset and become known as digitally leading.

The theoretical framework underpinning this research is therefore constructed from Enactment Theory (Ball et al, 2011a) which explains how educational policies are interpreted and realised differently across schools depending on their unique contexts and actors. This is supported by the research of both Tearle (2004) and Pettersson (2018) who focus on concepts such as organisational ethos, leadership, vision, change process and people, as the core components of digitally competent schools. When viewed together, these have provided a structure to conduct the research and to consider the findings, looking at the many dimensions of developing a digital vision in schools.

Throughout the data analysis it became clear that there was another factor at play within the schools to support the enactment of policy by the leaders and staff. The interaction between the staff came through in the data as a significant finding and therefore I needed to consider an added approach to bolster Enactment theory. The Communities of Practice (Lave & Wenger, 1991) approach became apparent to explain this important element. This framework emphasises the need for collaboration between staff regardless of which of the actor roles they have. Communities of Practice therefore complements the theoretical framework by illustrating how staff collaboration and shared learning foster the enactment of digital policy in practice. The school culture and community became a significant factor in

this research as to how the policy had been enacted across all levels and with all actors and therefore became a valuable addition to Enactment Theory.

A diagram below (Figure 1) outlines how these potentially interlink. The community of practice sits firmly in the centre, however each of the other areas shown in the diagram need to come together to fully enact digital policy and guidance at school level.

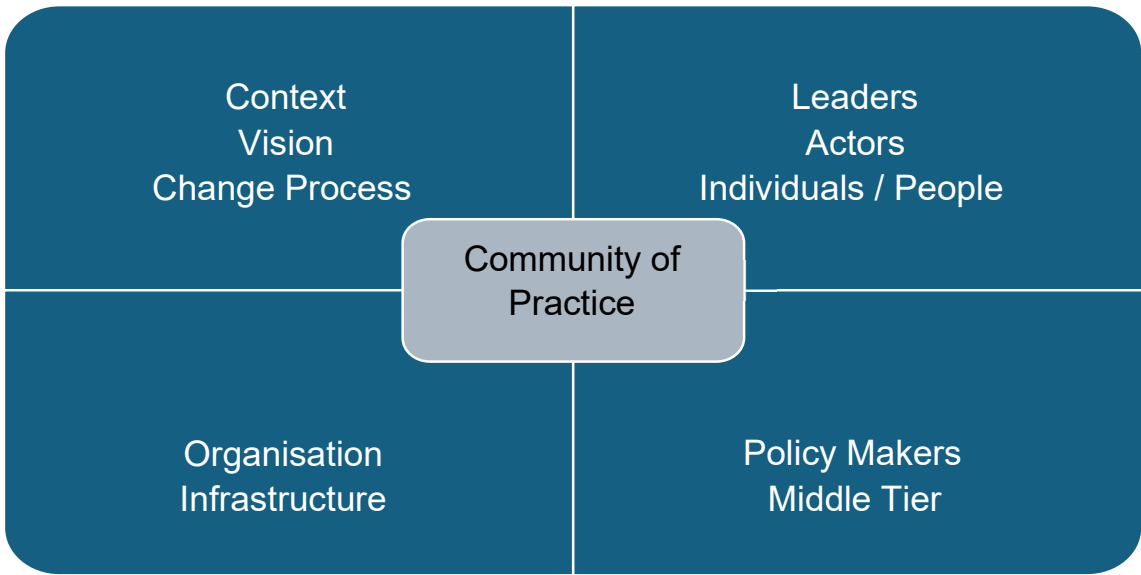


Figure 1 Factors within the theoretical framework.

3.2 ENACTMENT THEORY

Enactment Theory (Ball et al, 2011a), plays a pivotal role in my understanding of schools becoming digitally competent. The basic premise of Enactment Theory is that the context and actors of a school will alter the way in which policy becomes practice. Ball et al (2011b), suggest that there are situational, professional, material and external contexts all of which make a school a unique place, so that the way in which policy is interpreted and manifested in each school will be different between schools. Braun (2011) writes that policy enactment in schools is a framework that must consider the contexts and the way in which these contexts interrelate.

Situational factors (Ball et al, 2011a), are concerned with the history and location of the school, its geography and its intake in terms of socio-economic demographics for example. It is the situation that a school finds itself in, now.

Professional factors are less tangible (Braun, 2011) and relate to the values and experiences of the leadership and the teachers in the school itself. The notion of teacher agency and resilience comes into play here along with how these actors take on a role in policy roll out. There are a range of actor types shown within the framework who “do” policy, but each have their own positions and interpretations which influence the enactment of this policy.

According to Ball et al., (2011b), these can be summarised as Narrators, Entrepreneurs, Transactors, Enthusiasts, Critics and Receivers. The leadership team of the school act as Narrators for the policy to others, explaining it to staff and deciding its importance for the school. Within both the leadership and wider staff team there will be some actors who champion policies, they are the Entrepreneurs and are personally committed to a particular policy or focus. There are the Transactors, who take on a monitoring role; the Translators and Enthusiasts who buy into the policy idea, planning and developing this and sharing it across the staff; the Critics, who may often be active union members who are consulted at critical times but rarely exert major influence; and finally the Receivers, often the main scale

teachers and non-teaching staff who look for the guidance and direction and follow it without delving deeper themselves.

Students are also an important actor, most often Receivers of policy, within the school context as most times the policy being enacted has a direct influence on them. However, for the purposes of this research, student voice was not considered as the focus was not on the teaching or classroom practice which is where student voice is most important. This research was concerned more around the wider role of teaching, the planning, preparation and administration elements of the job and including classroom practice and curriculum delivery would have added a much wider lens to this research than could be realistically and sufficiently covered in one study.

Another actor would be those national policy makers. Some of whom are participants in the Elite interviews as the construction of the policy and the sharing of that policy to leaders will influence how a policy directive is administered at school level. Policy makers change with the political landscape and individuals within the ministerial posts, therefore the use of those who have influenced policy over several years seemed to be a more effective research tool. In schools, these actors sit mostly within the external factors (described below) as most teachers are not directly concerned with informing the policy process (Maguire, 2015), because of the sheer number of policies that are enacted by schools every day and the profile of those policies for each teacher.

Material factors (Ball et al, 2011a), are the physical limitations associated with aspects such as the fabric of the building, the layout, the budget, the infrastructure and the staffing levels. These factors are particularly poignant when considering the need for digital development – budgets and infrastructure are needed to ensure that digital technologies will work. Older buildings will often hamper Wi-Fi and device competences in a way that a modern build may not. Also, regarding Covid-19 and remote/blended learning potential, the adoption and establishment of a learning platform across the school would be considered a material factor.

Finally, External factors (Ball et al, 2011a) are those broader national policies such as Wales as a Digital Nation (Welsh Government, 2022) and wider influences, such as the Estyn inspection system, the Regional Consortia, the Local Authority and teaching union involvement. These organisations are the policy actors and are described as the Outsiders (Ball et al, 2011a) but still exert influence within the policy cycle. These are also the external actors (Braun, 2011), involved in policy making and would also include the school inspection organisation in Wales, Estyn.

It is important to note, that context in schools is dynamic (Braun, 2011), rather than static and many factors will affect change in how schools enact different policies, both within and outside of the school building. Putting this wide range of policies into practice across schools across a country will lead to variance across schools into what this looks like in practice, so that enacting policies is a “creative, sophisticated and complicated process” (Kilcoyne, 2021, p248).

This theory, whilst not a neat diagram or flow chart for schools to follow, indicates many, if not most, of the influences exerted on policy for it to become practice in a school. However, Ball’s research was conducted across four case schools in England, completed in 2011, and did not focus on the development of digital technologies in those schools. Over the past 10 years in Wales, there has been increasing importance placed on digital technology in education so whilst the key factors noted by Ball et al (2011b), are likely to still feature in decisions made by school leaders in moving toward developing an organisation-wide digital mindset, there are potentially other, newer or more relevant factors that now also should be consider across Wales.

Ball et al., (2011c), consider the enactment of policy from a wide range of stakeholders and contextual aspects and as such their Theory of Policy Enactment stems from substantial case study research in secondary schools in England. Ball et al (2011d), suggest that it is impossible to create a linear, flow chart style of practices that schools can follow to go from policy to school wide practice. They note how individual policies can be implemented by

schools but the sheer volume of policies, sometimes contradictory and constantly changing, mean that how schools tackle the enactment of all these very much depends on the school context in its widest sense. In terms of the creation of a digitally competent school there are several internal policies that will need to be considered – teaching and learning internal policies, safeguarding, e-safety, mobile phone use, blended learning approaches, professional development, home-school communication. Then additionally there are the external, national policies, as referenced in the Context chapter. In fact, the enactment of digital within a school can also be drawn down into the classroom as well, with teachers enacting the priorities set by their own leadership team, their subject conventions, and examination specifications. The enactment of these national policies therefore goes further than implementation of one single piece of legislation.

3.3 COMMUNITIES OF PRACTICE

The theoretical framework underpinning this research is that of Enactment Theory, (Ball et al 2011a), with the addition of a Communities of Practice lens. Whilst Ball et al's (2011b) Enactment Theory describe a range of contextual elements and actors, it does not fully develop the collegiate nature of schools, particularly around professional learning and school development seen within this research's two cases. The individual actors within the school are successful because of the interactions between them, the familiarity and trust seen within their community.

During the research, the culture of learning that I found in both schools led me to further research the notion of Communities of Practice (Lave and Wenger, 1991). Lave and Wenger's (1991), situated learning theory considers learning as taking place as part of a community of practice. Their premise is that learning should be positioned "in the context of our lived experience of participation in our world" (Wenger, 1998 p.3) and is part of being human rather than a specific action that we undertake. When considered like this, learning can be seen as a social activity, emerging from humans being social beings, and a community will therefore embody shared learning experiences. Through this lens, a school is its own community - it has its own culture, its own way of being and its own shared understanding. Schools within specific structures follow similar policies and directives and are subject to the same regulations but because of the students and staff within a school, every school is also different and has its own ethos and way of being – even those within close geographical proximity. Enactment Theory (Ball et al, 2011a) does not place emphasis on this cultural variation affecting how a school enacts policy, it focuses more specifically on the role of the individuals. Within the context of this research, it was apparent that the collegiate culture of being in these schools had a significant influence on the enactment of policy, potentially more important than the roles of the individuals themselves.

The Communities of Practice theory (Lave and Wenger, 1991), considers these dynamics as a mechanism for creating meaning and those within these communities as being

participants – each actively contributing to their community. In Lave and Wenger's (1991), model, learners engage with the expert and take part in regular interactions and activities. These regular interactions were described in both case studies as being part of their everyday experiences.

Wenger (1998) speaks about the process of Reification - making the abstract, concrete. This is how schools enact the policies that come from local, regional and national levels. These documents are reified by defining outcomes at school level, creating their own processes and then all members of the community participating in the 'doing' of these. In the culture of a Community of Practice this leads to mutual accountability rather than a top-down directive. The policies are enacted, not by individual actors influencing others but by the community as a whole entity. For this reason, I felt that the addition of the communities of practice lens to enactment theory was a good fit for my theoretical framework.

Recent research into Communities of practice has found it to be a strong basis for making educational changes. Karbonja et al (2024) undertook research in Slovakia around Professional Learning Communities (PLCs) as sustainable models for digital transformation. This study considered a range of different models of PLCs from single school to system-wide PLCs and found that a strong collaborative culture, such as one would find in a Community of Practice, is "the foundation for introducing sustainable changes to education" (Karbonja et al 2024, p.13). Whilst a community of practice approach was seen as ground-up in both schools in this research, Karbonja (2024) would suggest that there is still a need for a leadership role to support it or it is unlikely to have impact. This links back to the narrator and translator roles within enactment theory, furthering the links between the two.

The benefit of a Community of Practice approach is that it allows for a shared domain of knowledge which can be extended and explored by all members of the community; and that the community involves regular and planned participation to become established. Vaataja (2025) researched the use of Communities of Practice within primary schools in Finland, specifically around digital pedagogy. The research stemmed from the change to emergency

remote learning due to the Covid-19 pandemic and showed that whilst Communities of Practice traditionally are located in a shared space or organisation, they can also be applied to wider geographical areas or across organisations to enhance the learning opportunities. This research strengthens my own understanding of the value of the Community of Practice as an important element within the theoretical framework for school level enactment of digital policy but also suggests a possible development for the national Hwb platform in Wales, discussed further in Chapters 6 and 7.

As digital technologies continue to develop, particularly in the era of Artificial Intelligence, an established Community of Practice has the potential to enable educators to discuss, experiment and critique new digital tools and technologies in a safe space. Vargas et al (2025) consider that Communities of Practice are crucial for this, having reviewed 62 Scopus indexed studies around their use. Communities of Practice were found to foster increased professional collaboration and encourage knowledge sharing and reflection. Vargas et al (2025) found that technological barriers still hindered progress as did time for effective participation, however building this into a Welsh model when schools actively priorities EdTech funding and collaborative professional learning would suggest that these limitations can be more easily overcome.

3.4 CREATING A DIGITAL MINDSET

As the prevalence of digital tools and technologies in schools continues to rise, to potentially ubiquitous levels within UK schools, so does the decision-making around what tools, what purposes and the potential benefits and challenges of these tools in the classroom. Whilst a definition of “digital” is important, contextually the word reflects a myriad of different things such as the infrastructure, the devices and the processes. Instead, I’ve decided to use the concept, Digital Mindset, which refers to thinking about how and why digital tools and technologies can benefit schools’ systems wider than just within the teaching of a digital curriculum to learners. A bigger question than the ‘what’ should be that of ‘how’ to implement these (Tearle, 2004), and in keeping with the new curriculum in Wales (Welsh Government, 2020), the ‘how’ should be a decision based around the school context, school curriculum and the vision of the school. These decisions, whilst often made collectively by the staff, are ultimately owned by the headteacher and often there is a process that is undertaken to make these choices. Educational change is “technically simple and socially complex” (Fullan, 1992, p.109), and there are many additional considerations to be made when thinking about the adoption of digital tools and technologies in a school situation, not just the ability of leaders to utilise good change management processes. Creating a digital mindset is therefore a whole school development process.

Tearle (2004), developed a theoretical framework through her research, considering areas of both change management and the introduction of ICT into schools, reviewing 424 documents, synthesising the literature and then testing her theoretical framework via a case study in a school in the southwest of England.

Tearle (2004), began by considering some of the important factors of change management, most widely researched in organisations outside of education and discovered two main factors of influence, that of the environment and the change management model adopted. The notion of the environment of the organisation is of particular interest in the context of Wales and our new curriculum, which emphasises the importance of community and context

in our planning (Curriculum for Wales, 2022). The notion of planning for change and the process of learning comes through in the Schools as Learning Organisations model, advocated by Welsh Government (Welsh Government, 2018), as a toolkit by which school leaders can actively develop and grow their school.

Some additional factors identified by Tearle (2004), as important to the implementation of ICT were practical, such as availability of technology, time, training, management. Others were more around ethos such as individual attitudes and motivations, and organisational ethos (Tearle, 2004). In 2023, many schools in Wales, thanks in part to the Hwb EdTech investment programme (as discussed in Chapter 2), found access to technology to be less of a concern that it would have been in 2004. However, time, training, management and the ethos and attitude aspects are still areas that may be a concern to school leaders.

For each of the categories listed in the table below, Tearle (2004), identified questions to support the framework and the case study questionnaires and interviews in her research. A selection of her questions is included in Figure 2.

The Organisation	• Does the school have a learning culture? Is it adaptive? Is it collaborative? • What can be said of the leadership of the school and the role of senior management? • Does the organisational structure appear open and flexible? • What is the school's position about student access to computers?
Practical / Material Factors	• Are there sufficient computers and are they 'fit for purpose'? • Where are they located and how is access arranged? • Is there a programme relating to development of ICT use? Does it address pedagogical need as well as skills? • How is ICT coordinated? Who are the key people and what are the processes? What is the role of senior management?
Change Process	• Compatibility: is the process for implementing ICT in keeping with other aspects of the school and its workings? • Trialability: can people try it out first before fully committing themselves? • Observability: is it possible for people to see successful outcomes? • What barriers can be identified: social, cultural, organisational and psychological? What is being done to anticipate/recognise them? • How will individual and collective progress be monitored and reviewed?
Individual	• What are individual attitudes to using ICT for teaching and learning? • How motivated and committed are people in general and towards ICT use? • Do people think they have some degree of control and choice over their actions in relation to ICT use? • Do people understand how ICT can enhance teaching and learning and see the value in using it?

Figure 2 Summary of Research Prompts (Tearle, 2004)

In her interviews, questionnaires and document analysis, Tearle (2004), analysed the data using coding and found categories including external influence, ethos, internal processes, quality of key staff, resources, training and support. When mapped against the theoretical framework Tearle (2004), had devised from her research review, it could be seen that there was significant parity between these categories but that whole school characteristics, ICT implementation processes and Individual characteristics being the main areas.

The notion of these three areas (school characteristics, ICT implementation and Individual characteristics) can be seen in later research by in the ITU Monitor of 2007 (Arnseth et al. 2007), which built on the previous ITU Monitor surveys across Norway (a bi-annual survey about digital education in schools conducted between 2003-2019) and began to outline the school level indicators of a digitally competent school. The four indicators of a digitally competent school that Arnseth et al (2007), identified are Digital Learning Environments (impact on teachers/students), ICT Maturity (assessment of the school ICT use by leaders), Assessment using ICT (use in class for formative assessments) and Flexibility (culture of potential for change across the school more widely).

Tearle's (2004) research and that of the ITU Monitor (Arnseth et al. 2007), were both conducted between 15-20 years ago, at a time when social media was in its infancy, changing the nature of how people connect; as YouTube was starting out, which revolutionised video sharing; and before the iPhone, which revolutionised the concept of pocket technology. This research is key in considering how schools in Wales can effectively deliver a curriculum that has purposely designed digital competence for learners as a central component, and whether the Digital Professional Learning Journey (Welsh Government, 2023), can be considered as a sufficient vehicle for schools in Wales to effectively develop as digitally competent learning organisations.

3.5 DIGITALLY COMPETENT SCHOOL ORGANISATIONS

Pettersson (2017), suggested that digital competence is an organisational characteristic, and that a digitally competent school organisation would include various actors and competences. Petersson's (2017), case study in Sweden into digitally competent school organisations looked beyond the classroom practice in schools and considers the wider organisation, infrastructure, and activities. Petersson's (2017), research was with five secondary schools in Sweden who used remote learning regularly and from this she concluded that there are several components important in the creation of a digitally competent school organisation to facilitate education in a digital age. Whilst the focus of this was on schools using remote learning, which has been regulated by law in Sweden since 2014, and not classroom-based ICT use, the research gives clear indications for the broader digital needs that could then be applied to the model of hybrid learning and to more digitally enabled teaching methods in our schools. Petersson's (2017) methods focused on conducting in depth telephone interviews with school leaders to establish the organisational aspects of digitally competent schools, using a semi structured interview guide. Prior to the interviews, Pettersson (2017) visited three of the five schools, spending two days immersed in the school life. The data from the transcriptions were coded in line with three pre-defined categories but also allowed for unexpected responses. These three broad codes were: setting the direction, developing people and developing the organisation.

Petersson (2017), argues that there are both structural and cultural changes that need to take place in a school around three specific areas to be a digitally competent school. The first is the direction or vision of the school, the second is the development of people and the third is the development of the organisation environment. These three areas again cover similar aspects to those of both Tearle (2004), ITU Monitor (2007), and similarly matching some of the principles in Wales coming from the Digital Professional Learning Journey (Welsh Government, 2023).

As a theoretical model, Pettersson (2011), takes the next step from Tearle (2011), and offers three simple categories under which the process of change can be undertaken. The reduction in themes to three broad concepts offers an efficiency that mirrors some of the Schools as Learning Organisations Model used in Wales and can be concentrated into 3 areas – Vision and Leadership, Learning & Enquiry, Collaboration and External Environment. This presents as a viable way to refine the research aims and perspectives moving forward. These three areas will now be explored in depth.

3.6 VISION

Pettersson's (2018), first area is that of vision, of setting the direction, and here it is imperative to consider that vision as part of a leadership approach in schools. The concepts of shared goals and visions, good communication and building a culture of learning came through strongly here in her analysis. Most of the respondents in Pettersson's research considered vision as not only looking at teaching and learning but also the vision for the staff for reducing workload (Pettersson, 2018).

In Petersson's (2018), research, the creation of these visions come from a collaborative approach, making use of the aims of the teachers to develop appropriate goals and support those goals with expert advice, rather than being steered by single expert voices. However, responses often indicated the understanding that building the vision was not a question of whether to digitalise or not. It was a shared understanding that digitalisation had to happen. The anchoring of these visions in the whole staff, not within individuals ensures that the direction of travel is maintained, even if individuals move on another institution.

There was also a recognition of the need to relate and buy into national policy and strategy which allows digitalisation to become a tool to meet these aims as well as a reason for doing them at school level. Two Wales wide models are important at this point to consider, that of Schools as Learning Organisations (Welsh Government, 2019), and that of the Digital Professional Learning Journey (Welsh Government, 2023). In terms of the national importance digitalisations, these two documents outline – at least in principle - how schools in Wales can manifest their own vision.

The vision of first, a nation and secondly, of a headteacher, will strongly influence the pathways taken by a school. The importance of context and culture is becoming ever more prevalent in Wales with the development of the new curriculum (Welsh Government, 2020). In terms of ICT and Digital development, the context and culture are intrinsically linked to issues around access to and understanding of these tools.

3.7 DEVELOPING PEOPLE:

The second area that Pettersson (2018), identified was that of the development of people. It was established in her research that the development of people in a digitally competent learning organisation comes from both formal and informal courses, structures of learning, support and focus on the importance of this learning. (Pettersson, 2018)

Within the analysis, Pettersson (2018), identified three main factors around the development of people; technical/ pedagogical support; professional development; and collegial learning. In Wales, the DPLJ (2021) section “Professional learning, collaboration and innovation”, outlined these three areas in that the individual should seek internal and external support for professional learning including collaboration with other schools. The DPLJ (2021), aims to support staff develop their technical and pedagogical skills with digital tools, emphasising the time and training required for effective professional learning to take place.

Data from the Organisation for Economic Co-operation and Development’s (OECD) Teaching and Learning in Schools (TALIS) survey (2018), showed that only 20% of teachers (as an average across all countries participating) declared that ICT (Information and Communication Technologies) – in 2018 - was part of their professional learning opportunities. Whilst there is no specific data for Wales, comparatively in England this was reported as only 5% of teachers. This study also found that on average, across EU member states (of which the UK was at the time of the study), less than 40% of teachers felt ready to use digital technologies in their teaching but 68% of teachers reported being able to support student learning through ICT, and 48% reported allowing students to use ICT in their lessons. (NB: A 2024 TALIS survey has been undertaken but results not yet published, therefore this is the latest data available at the time of writing).

There is no similar data collection of teachers specifically in Wales. However, the increase in digital use across the population, according to the National Survey for Wales (2020), increased from 73% of households using the internet at home regularly in 2012, to 93% in

2020, and in 2024 this now stands at 96%. This would indicate an increase in use for all households, which would include teachers in their home life – albeit with a focus on leisure tools rather than professional tools. Furthermore, the specific digital upskilling required by teachers due to the switch to emergency remote learning during the Covid-19 pandemic, would suggest that there is increased use of digital tools within the workplace now for teachers.

The notion of high-quality professional learning for teachers around digital skills and pedagogies, identified by Pettersson (2018) as a factor in a digitally competent school organisation, would appear to be important for the continued success of our practitioners in digitally competent schools in Wales.

3.7.1 THE GUIDE ON THE SIDE

Pettersson (2018) discussed the importance of developing people for the success of digitally competent schools, and it is important when considering how we develop people, that we also consider the changing role of the teacher over time, particularly moving away from the more didactic and traditional style of teaching. Digital tools and technologies allow for this shift toward teachers becoming facilitators of students learning, rather than imparting specific knowledge didactically. The specific knowledge and skills that a teacher holds, part of their professionalism, is now at risk from the rise of digital technologies, with the democratisation of this knowledge via the online, 24/7 nature of the internet, and on-demand societal mindsets. Some of the reasons behind this changing role of the teaching profession could be seen to be linked to the rise of digital technologies and the democratisation of knowledge through the world wide web. Susskind and Susskind (2015) described this as Technological Challenge and suggested that teaching was already in the grip of this transformation of how specialists are made available to society. Selwyn (2021) discusses some of the many ways in which the role of the teacher could change due to the advances in technology and the focus on changing pedagogies (leading to the evolution of a PedTech mindset - as coined by Fiona Aubrey-Smith, 2020). However, the importance of the teacher designing the learning

and building the relationships with the learners to promote learning activity to happen is still of vital importance in our school systems.

The role of the teacher has been moving away from being the 'Sage on the Stage'.

(King, 1993), the transmittal model of teaching and learning, where learners are more passive and are given the information by the teacher, to a more constructivist 'Guide on the Side' (King, 1993), where the learner makes sense of new information by building it into existing knowledge more actively. The rise of digital technologies has supported this in many cases where teachers are producing and sharing resources online to help facilitate this new pedagogy. Teachers can 'flip the classroom' giving students access to digital resources to undertake at home and using the classroom to practise the knowledge rather than spending the class time delivering knowledge and the home time to practise. The advent of YouTube in 2005 has led to a generation of teachers being able to record lessons and upload them for students to watch and rewatch at leisure, known as asynchronous learning opportunities. However, schools in Silicon Valley, the 'spiritual home' of EdTech, parents are demanding that schools reduce the amount of technology used in classes (Woo, 2017), and those who work in Google, Apple and other technology companies in the area are often quoted within the print media as being those who advocate a tech free family life (Bannon, 2024). There is clearly a delicate balance for teachers between seeking the benefits that digital tools can have on our learners and teachers and ensuring we are acting in the best interests of the health of our young people in terms of promoting screen time and access to the broad spectrum of online content.

Using digital tools and technologies however is bigger than simply enabling students to access knowledge themselves from online sources. Bringing digital resources into classrooms as a method of communication, content production and personalised learning are all new opportunities for teachers to undertake. Krumsvik (2014), proposed that teachers should move through a staged model of digital competence and recognise that this is different to that of a students' digital competence. From adoption through adaption, to

appropriation and finally to innovation, teachers may build and develop their digital skills over time.

Edwards and Fenwick (2016, p117), concluded that digital technologies are having a “significant impact upon professional practices”, changing the relationship between the client and the professional, in this case between teacher and student but also between schools and parents. Edwards and Fenwick (2016), go on to consider the fact that whilst in many professions, digital technologies and people are becoming interdependent, digital technologies are still being used in the main as ‘tools’ which can be learnt and used by the still more knowledgeable professional. It is not then just the need to utilise digital tools within the classroom itself, but there is a bigger role that digital can play in supporting teachers with administrative tasks, such as lesson planning, reporting and data analysis.

The Education Endowment Foundation (Stringer et al, 2019), suggests that there is a need for teachers to be able to plan, conduct and evaluate technology-supported teaching and learning. In Wales, Donaldson (2015), who led a review into the Welsh curriculum included supporting students’ digital competences as one of the 12 pedagogical principles that teachers need to develop as we move toward Curriculum for Wales, and this is reflected in the values of the professional standards (Welsh Government, 2019). However, there is no specific strand within the professional standards that specifically relate to the development of teacher digital competence (unlike Welsh language which has its own segment for development) and no requirement for a specific standard of digital competence upon entry to training courses for teaching - unlike for English and Maths pre-requisites (Educators Wales Website, 2025).

3.8 DEVELOPING THE ORGANISATION

It is not enough to have a vision and develop people. Pettersson's (2018), third component is that of developing the organisation and considers the culture of the school when becoming digitally competent. In terms of developing the organisation, Pettersson (2018), suggested that there needs to be a responsibility, either with the leadership or within the whole collegiate staff, for the alignment of systems, collaboration and developing teaching and learning with support from either external advisors or home-grown expertise. The development of the organisation will include the management of the connectivity and network structure, the hardware and software. Pettersson (2018), found there were some schools who sought standardised hardware and software and others who believed the teachers should have free choice of the hardware and software available to them. However, both groups agreed about the need for using shared management information systems. In developing the organisation, Petersson (2018), noted that there was an important element of the organisation of both technical and pedagogical support structures so that the teachers can be supported to learn the skills they need, whether that is through access to learning technologists, ICT support staff or simply time for teachers to support themselves. This links to the development of these teams and the recruitment of the right staff in all roles, and how time can be given to staff development and preparation. However, Pettersson (2018), also noted how budget is fundamental in this development and often partnerships are developed with researchers and development projects. The Hwb EdTech Programme in Wales offers some direct support for digitalisation in schools, which is built with a model of sustainability and requires support from the local authorities for its dissemination annually (Welsh Government, 2025).

3.8.1 DIGITALLY COMPETENT SCHOOLS – A WELSH PERSPECTIVE

When creating a vision, the first of Pettersson's (2018), three elements of a digitally competent school organisation, the SLO model (2020) encourages the shared approach, and focuses on enhancing the learners' outcomes. Best practice also encourages all

members of the community to participate in building this vision – learners, parents/carers, governors and the wider community. Within the SLO, the use of ICT is encouraged to support collaborative learning between staff as well as for wider communication, and the use of enquiry is discussed to establish change and innovation in practice. However, it is not the purpose or scope of the SLO model to identify specific areas for development within a school, so for the development of digitally competent organisations, it is essential we consider the Leadership section of the DPLJ (2021).

Within the leadership section of the DPLJ, sits the creation of a whole school vision. This should not just consider teaching and learning but also the operational processes, in the same way as Pettersson (2018) discusses. It recognises that the vision should be led by the school leadership, and bought into by all staff, supported by the expertise of relevant partners such as the school improvement partners and local authorities.

The consideration of how digital can be seen as one of the cross-curricular themes within their schools teaching and learning, the adoption of the SLO model and DPLJ (Digital Professional Learning Journey), the use of the 360DigiCymru toolkit within the school and similar national policy areas are all enacted through the school leadership team and should be seen within a wider school vision. The development of this vision and the enactment of these and other national policy areas in a school is the responsibility of the leadership team and this process of enactment can be considered through the theoretical framework of Ball et al (2011a).

3.9 RECENT RESEARCH

Current views, from research conducted since undertaking this thesis, suggest that leadership and professional development continue to be fundamental in the enactment of policy and consequently the development of a digital mindset in schools. Whilst this research does not

look specifically at the learner curriculum, recent research (Stringer et al, 2022) undertook a systematic literature review into primary school teachers' experiences with digital technologies curricula and found a lack of consensus across all eleven countries around how and when to introduce a digital curriculum for learners. It found that teachers' digital confidence and opportunities for professional learning were fundamental to facilitate its successful integration, particularly due to the evolving and multifaced aspect of digital content. Stringer et al (2022) did not include any research from Wales in this systematic review, neither did they find research that analysed the different types of professional learning, both of which are introduced throughout this thesis.

Leadership, particularly the role of the principal or headteacher has been viewed by research as paramount. More recently, Lundqvist and Westerland (2022) undertook an ethnographic single case study approach in Sweden to identify how principals (school leaders) interpreted and facilitated policy across their schools. It was observed that policy enactment depended on a range of strategies as well as the need to embed them within other policy areas and a local context and focuses on how the leadership give meaning to their own actions. Using enactment theory as a lens, Lundqvist (2022) recognises the role of the principal as the key actor in enactment, however, unlike in Wales, the principal is described as the person who will develop the learning culture and the teacher competencies. In Wales, whilst headteachers take responsibility for school improvement and its direction, (along with the Governing body) teachers have a professional responsibility to ensure they take ownership of their own learning and, where digital policy is concerned, a digital lead is often employed within schools to support the enactment of policy around that aspect of school life (Welsh Government, 2022a). Lundqvist (2022) noted that principals recognised the importance of collective sense making to support their enactment of policy, even though they also recognise the need for contextual enactment. This collective sense making and culture of sharing could be considered a manifestation of a communities of practice approach to learning and enactment.

By reviewing Norwegian digital education policy documents from 1999 to 2020, Bjordal (2026) found that teachers consider themselves to be those enacting the changes rather than having the changes done to them in a more passive way. It was noted that most of the policy documents considered aim for passive teacher compliance and acceptance when adopting these new policies, rather than encouraging more active engagement with the policy. Bjordal (2026) suggests that policy itself could be written to facilitate a more united and cohesive system by reducing the requirement for school level individuality or encouraging a more passive approach to enactment. Simply expressing the policy in language that suggests duty (Bjordal, 2026) or requirements, removes the agency of teachers, and could be seen as a political way to demand more digitalisation in schools. In Wales where Curriculum for Wales emphasises the need for teachers to be co-constructors, it could be considered that there is more individual agency in the development of a digital mindset across their school, and whether this impedes a national digital agenda. Policy analysis of Wales documentation at a similar level to Bjordal (2026) would be an interesting follow up to this thesis to consider what level of agency the political language is demanding of schools.

Returning to the UK and the influence of contextual factors to a schools' policy enactment, Hay's (2025) research with a multi-academy trust, considers the three phases of putting policy in action: development; enactment and finally policy in action. It is at this final point that Hay (2025) argues that the network of support and practice becomes durable and stable within the school. It is also at this stage that the policy can fail to become integrated. Hay (2025) utilised the Actor-Network Theory, one of the influences on Ball et al's (2011b) Enactment Theory, to reflect on the difficulties that a multi-academy trust had in adopting national policy, and to extend the work of Ball et al (2011b) demonstrating how there is often a wealth of different policies in play at school level which all need implementing and can often be contradictory. It could be argued that when considering digital policies which require regular

updating and reskilling, the network of support cannot become fully stable, and a community of practice approach would enable this phase to continually evolve as required.

A range of factors can impact digital transformation in school, many of which were discussed in a non-systematic literature review by Timotheou et al (2023). Their analysis found many factors that are mirrored in key pieces of research outlined in this literature review, particularly those by Tearle (2004) and Pettersson (2018). These included the teachers' personal characteristics and professional development, as well as the school's leadership and management, administration, and infrastructure, and these appear to be important in successful enactment of digital policies. In terms of the digitalisation of schools, the use of digital tools and technologies is considered as a way to improve home-school relationships and goes beyond subject based classroom practice to permeate throughout the school as an organisation.

One particular study reviewed by Timotheou et al (2023) was the Impact of ICT in Schools report, who state that "using ICT effectively in schools is about more than changing resources; it is about changing practices and culture" (Condie and Munroe, 2007, p.8). Condie and Munroe (2007) further recognised that leadership is critical - both the formal leadership role of the headteacher and the more informal roles assumed by staff (those entrepreneurs, and enthusiasts in the language of Ball et al (2011b)) - to ensure that this becomes embedded into the school.

There is continued interest and research around how schools are introducing and developing their use of digital tools and technologies, particularly in a post-Covid era and this thesis explores how two schools in Wales have done this. There are a range of core factors in play when considering how schools enact policy areas. The role of the leader and the role of professional learning are still two important factors in current research, (for example Lundqvist (2022); Timotheou (2023); Krabonja (2024), however there is less research which considers the entire eco-system around digital tools, particularly including the infrastructure, which is

often supplied through a corporate first, not education first model of provision. There also still seems to be a gap in the current research around the Welsh context, with its new curriculum crafted at school level from high level principles and statements, rather than descriptions of the specific knowledge that must be taught. Finally, whilst some of this recent research has considered the role of culture, the importance of a Community of Practice approach has limited research when considering policy enactment, focusing more on the element of professional learning in its own right. This is a fundamental part of the learning culture across both the two case studies to inform their enactment of the ever-changing digital policy landscape in schools.

3.10 CONCLUSION

Throughout this chapter I have considered the need for more specific research around the need for digital to be part of a school life, not just a feature within its curriculum, to keep pace with the modern world. I have identified the success of the integration of digital tools depends on how the leaders enact their vision and used Tearle (2004) as a clear reference to ways that schools could adopt this, to develop their own organisation-wide digital mindset. The work of Pettersson (2017) established a focus on three distinct areas to enable schools to become digitally competent, those of vision, people and organisation and I have aligned this with examples in the Welsh context such as Schools as Learning Organisations and the Digital Professional Learning Journey.

Finally, I considered the work of Ball et al (2011a) and Enactment theory, along with that of Community of Practice (Lave and Wenger, 1991) to establish how policy becomes practice within a school environment and the importance of culture and shared understanding.

Using these four different pieces to develop an interlinked theoretical framework, outlines the need for a joined-up approach to digital transformation in schools, where the internal and external factors are working together within a strategically planned vision developed by the school leaders and bought into by the whole staff. This community approach to digital policy enactment reflects the nature of shift in curriculum and education in Wales.

Wales is on a pathway to implementing a curriculum that should be designed with learners at the centre, equitable provision to digital tools through the Hwb programme and high-quality professional learning for all staff, led by school leaders who strive to develop schools as learning organisations. I suggest that to meet the needs of the modern world, we need to be support schools to develop their own, organisation-wide digital mindset, using the process of enactment (Ball et al, 2011a), the development of a community of practice (Lave and Wenger, 1991) and the concepts introduced by Pettersson (2018) and Tearle (2004) to identify the main aspects that are present in digitally leading schools already. This research

considers how two schools, held up as leading digital schools, are developing in this way and what lessons can be learnt from them to support other schools on their own journeys.

The theory of enactment, along with the work of Pettersson (2018) and Tearle (2004) have led me to the research questions and the use of elite interviews and schools case studies to explore how they are developing and enacting a digital mindset across the school.

Whilst Tearle (2004) focused on the aspects of change management that are required for a school to develop, considering both the Why and also the How of the change process, Pettersson (2018) focused more specifically on becoming digitally competent and considered the particular areas of creating a vision, developing people and developing the organisation. Tearle's (2004) work lends itself more toward Research Question 1, and Pettersson's (2018) to Research Question 2, however across both questions come the aspects of enactment policy, particularly around the role of specific actors in the development from policy into practice.

3.11 RESEARCH QUESTIONS

RQ 1: How are national digital policies and guidance enacted by school leaders and staff in the Welsh primary context?

RQ 2: In what ways do school leaders cultivate an organisation-wide digital mindset in their schools?

4. MY RESEARCH

In this chapter I describe the methodology, and my rationale behind my choices for this research. I begin by considering my own epistemological and ontological positioning and before moving to discuss the research design choices.

4.1 EPISTEMOLOGICAL AND ONTOLOGICAL BACKGROUND

The research was constructivist in approach, as social interaction between actors (in this case teachers and leaders) are constantly being revised and altered, “people create culture continuously” (Becker, 1982, cited in Bryman 2016). Whilst relativism holds that absolute truths do not exist, a moderate constructivist approach is a softer version, holding that reality is dependent on the beliefs and experiences of those who experience it. (Slater, 2017) Social constructivism considers knowledge as socially constructed and within a school setting a school strives to have a unique identity or ethos, to socially construct their own reality. They have their own rituals and history from which to build on and draw on the context of their local area and the young people they attend to when implementing policies.

As a practitioner, my instinct around knowledge came originally from a positivist perspective, particularly considering how students learn with the knowledge coming from the teacher and being imparted to the students during lessons, and the teaching of a knowledge rich, factually driven curriculum (Taylor, 2013). However, over time, and with experience, I now lean more toward an epistemology that favours the interpretivist paradigm. The Interpretivist approach draws on a Verstehen model and focuses more on the understanding of human behaviour rather than the explanation of it (Cunningham, 2015; Bryman, 2016).

My research is based around teachers’ opinions on the relationship between policy and practice and therefore subjective. It is important to note that within this approach, I also

recognised the role that I played as a researcher who is also a practitioner, and the influence that this undoubtedly had on data collection methods. I discuss this in more depth later in this chapter in the Being Research Near section, when considering my positionality. However, interpretivism assumes that knowledge is situated in relations between people therefore the researcher will become part of the process, holding beliefs and expectations which will automatically influence outcomes (Bukamal, 2022). The role of a close to practice researcher therefore fits well within this space.

4.2 RESEARCH DESIGN

In this next section I will explain and describe the particulars of the research design, which uses qualitative research through interviews and an illustrative case study approach.

Qualitative Research is defined as:

“a form of social enquiry that tends to adopt a flexible and data driven research design, to use relatively unstructured data, to emphasize the essential role of subjectivity in the research process, to study a number of naturally occurring cases in detail, and to use verbal rather than statistical forms of approach”.

(Hammersley, 2012, p12).

This emphasis on the verbal (from interviews and focus groups) and naturally occurring (within schools), and subjectivity (my own experience) demonstrates how qualitative data is the best fit for this interpretivist approach.

4.2.1 CASE STUDY APPROACH

The case study method began to become more popular from the 1970's as a reaction against the positivistic, or more data driven approaches prior to this (Hamilton and Corbett-Whittier, 2012). The case study research design allows for a breadth of data collection methods to gain greater understanding of settings. Case studies are often seen primarily as a strategy rather than a method (Robson, 2002) and use multiple methods within the scope of the case which is clearly bounded and has a specific context which forms an integral part of the study itself.

Yin (2003) identifies three forms of case study: the exploratory, the descriptive and the explanatory. This research focused on the explanatory as it intends to explain the how and why of digital development across a school. However, as Stenhouse (1979), reminds us, there is care to be taken in collecting data because of my experience of education settings (albeit in

different schools to those that I selected for this research). He also emphasises the importance of high-quality field notes throughout to enhance the quality of the research. Making use of several different perspectives and methods of data collection has allowed me to develop a rich data set approach but with a delimited focus of tracing the numerous factors involved in developing staff digital skills and the impact of policy and government support on leaders, teachers, and support staff.

This aspect of the selection criteria was a key part of the research design to undertake an exemplary case study (Yin, 1989). In other words, one which exemplifies the phenomena to be studied. To understand more about what might influence 'successful' ICT implementation, it was essential to focus on schools which had moved on from the early stages of ICT implementation and where there was a good degree of ICT penetration across the curriculum. There are currently relatively few schools in this position, and little research has been undertaken in such a setting.

I decided to study two primary schools, to seek out both similarities and differences as two illustrative case studies. This would enable me to gain more detailed insights into the processes involved in policy enactment by having two perspectives to draw from. By using two schools which are alike across a specific set of measures, namely being digitally leading and within the same local authority, it was possible to minimise the influence of some external factors when looking at how schools develop from policy into practice (Yin, 2003), and also to improve theory building capacity (Bryman 2016).

One challenge was comparability with case studies (Hammersley et al. 2012), particularly when considering the individualities of schools in general and specifically within Wales where each school develops its own curriculum. By selecting two cases, this could have potentially posed an issue, in as much as the differences being confounding variables rather than offering

support and clarity to each other. However, matching the case schools on three key areas goes some way to alleviate any potential difficulties with the generalisability of the findings (Goodrick, 2019). The first was the selection of the same school type, primary, as these then reflected the same age range of learners and a similar pedagogical set up - that of one teacher with one cohort of learners for all subjects. The second key consideration was to select schools in the same local authority, which would ensure similar levels of support offered to both schools in terms of digital infrastructure. Finally, the identification of both as lead digital schools for the same school improvement partner organisation provided a comparison in terms of how digital is supported more widely in terms of professional learning and leadership. This led to a relatively small pool of schools to select from, and both schools were the most visible within the local authority for offering digital training, so were approached personally.

This selection method is known as purposive sampling (Bullard, 2024), as they fitted my criteria of being lead digital schools in the same consortia and local authority in addition to my own knowledge of their headteachers. Whilst purposive sampling can be said to be biased as it is selective, it also ensures that the same main characteristics have been met by each school so that the data collected can be better evaluated. In addition, the purpose of this thesis is not to generalise to a wider population but to seek to explain the case schools' approaches to developing a digital mindset. As there were only a limited number of potential case schools that fit the criteria I was looking for, purposive sampling was the most effective means for this research. Figure 3 summarises the key demographics for the sample schools.

	School A	School B
Number on Roll	258	218
Free School Meals	7.5%	53.1%
Attendance	94.1%	91.9%

Staff: Student Ratio	25.9	19.8
Budget Per Pupil	£4222	£4559

Figure 3 Key demographics from My Local School website.

To further mitigate for any potential researcher bias between the two cases with the first influencing the second, I selected a similar sample of participants from each school who were broadly matched (leaders, teachers and support staff) before I undertook any research in the schools. I developed and used the same question prompts during the interviews and focus groups and requested the same key documents as a baseline from each to provide similarity and comparability whilst still allowing the context specific nature of the cases to come through.

4.2.2 THE TRUSTWORTHINESS OF CASE STUDIES

Case studies could be considered negatively in terms of their potential for wider influence, because they are concerned with a single or very small sample of the potential population. It is therefore essential that the data can be deemed to be trustworthy, and that the researcher has limited or mitigated for any potential subjectivity and bias in both the data collection and its analysis (Quintão et al., 2020).

Guba and Lincoln (1985) identified Credibility as a main factor used to examine the trustworthiness of a case study. To establish credibility with the case study data, one technique I employed was that of triangulation of sources (Sirvent et al., 2022) – the process of comparing different methods of data collection: document analysis, individual interviews with the headteacher and the digital lead and two focus group sessions, one with teachers and the other with non-teaching staff. Triangulation allowed me to get a deeper sense of the interviews and focus groups by seeing the data evidenced in paper format. Comparing the sources that are printed and published with those that are spoken allowed me to look for

consistencies and divergencies. Triangulation also went some way in establishing confirmability and demonstrating that the findings were not influenced by any researcher bias.

4.3 SELECTING MY CASES AND PARTICIPANTS

Whilst originally intending to select secondary schools as I was more familiar with the secondary school context from my own practitioner experience, this was not possible. I approached several schools within more than one local authority and the headteachers were reticent to ask staff to participate partially because of on-going workload concerns (national strike action was in discussion and in place during much of my data collection phase). It was also felt that the emphasis in their schools was still on mitigating for the post-covid student learning deficit to fully prepare students for returning to school based learning, rather than on digital skills development, coupled with the implementation of the new curriculum for Wales. I therefore decided to concentrate on primary schools and looked specifically at those who are held up as digital lead schools. This enabled my focus to be more fully around the enactment of policy by all staff in a school that has been recognised as doing this well, providing some potential common elements for other schools to emulate.

The primary school sector in Wales covers the education of young people from the age of 4-11, where age-based classes of young people are taught in the main by one sole teacher and supported by specific teaching assistants. There is a flexibility within primary schools in terms of time given to specific areas of learning, which does not exist within the structured, subject based timetable approach of most secondary schools, enabling teachers to dive deeper into areas of interest at a time that is convenient for their learners.

To select potential schools, I needed to consider the middle tier support that is available to each school in addition to the national offer. At the time of the research, Wales had a middle tier of education support often known as consortia, which came from mergers of local authority support several years ago. There were at that time five regional consortia across the country which offered school support services for curriculum, leadership, and governance. Since completing the data collection phase this system is being reviewed and replaced (Senedd

Cymru Research, 2025) Following that level of support is the additional level of local authority support who will supply network, HR (Human Resources) and administration level support to schools but less likely to offer specific curriculum or leadership support.

Each consortium and Local Authority are bound by common goals but often have different strategies and approaches to how schools access support. Therefore, for the purposes of this study, I decided to bound the case schools within both the same consortia and the same local authority to minimise any differences that local authority or consortia situation, geography, priorities or personnel would make on the shared understanding of digital resources coming from this middle tier level into the primary schools.

The regional consortia that both schools were in consists of several local authorities, and according to their webpage, supporting over 200 schools and representing around 20% of the students in Wales, over 180 of these are primary schools. It has an average of 24% of students who are claiming Free School Meals but there is a wide range of variation in terms of social deprivation across the area it supports. It, like other consortia uses a Lead Digital School Model to support schools, with a full-time digital lead employed by them directly and a selection of schools who offer additional school to school support around specific digital areas. The Lead Digital Schools are often self-nominated but are approved by the regional consortia and a specific, formal agreement is made for the school to offer bespoke support to schools with a payment to the school attached to this.

Both primary schools that I selected were within the same local authority which has around 60 primary schools with approximately a quarter of its students receiving Free School Meals. School 1 has over 250 pupils, of which under 10% are receiving Free School Meals. School 2 has around 30 fewer pupils overall, but around half are receiving Free School Meals.

4.3.1 NOTE ON FREE SCHOOL MEALS:

I originally considered the use of Free School Meals (FSM) percentage as a comparative measure for the two school cases due to the importance that statistics have on per pupil funding. However, as can be seen from the school profile, whilst both are Lead Digital Schools, their FSM percentage is widely different. FSM itself is a crude measure of wider deprivation; however, it is one that is the leading headline for schools. Each student claiming free school

meals brings in approximately £1,000 extra to the school budget, which is delegated to the schools directly and schools must publish their Pupil Deprivation Grant spending plans (Welsh Government)

FSM itself is not a direct measure of deprivation in the wider area and does not account for students who are just above the threshold or claiming additional benefits such as Working Tax Credits. Kounali et al (2008), found that FSM is both a “coarse and unreliable indicator” of socio-economic characteristics as the number of students in receipt of free school meals are not indicative of a wider population of students in relative poverty. In addition, Hobbs and Vignoles (2013), identified that whilst those students eligible for free school meals are much more likely to be in lower household income brackets, because of family means tested benefits, some learners from the lowest household income bracket are in fact pushed above the threshold for claiming free school meals, whilst those in some higher household income brackets may still be eligible. The rate of FSM is fixed regardless of the variation in local housing costs, particularly around the rental market. Therefore, it is likely that the funding gained from those claiming free school meals does not reflect the nature of poverty in the area itself. In the Welsh Index of Multiple Deprivation 2019 data, School A was in the 50% least deprived of Lower Super Output Areas and School B was in the 20% most deprived overall Lower Super Output Areas within its local authority, yet they are only 3 miles apart. For these reasons, although there is additional funding in schools for students claiming free school meals, which could be spent on digital tools and technologies, it does not reflect what the school actually spends the Pupil Deprivation Grant on, nor does it accurately reflect the poverty that may exist in the local area that can impact the importance placed on the development of digital skills.

4.3.2 NOTE ON NUMBER ON ROLL:

As digital skills teaching is considered an expensive element of the school's annual budget, it was important to consider the financial implications in the case selection.

However, whilst more up to date, post-pandemic figures are unavailable, an Education Policy Initiative Report (2019), suggested that the average school ICT (Information and Communication Technologies) budget equated to £59 per pupil, lower than energy costs (£74 per pupil) or educational consultancy costs (£90 per pupil), confounding the belief that digital is a big expense for schools when broken down in this way.

Therefore, I did not actively seek similarity of FSM pupils or number on roll for this research as the focus is on the process of the schools becoming digitally competent and whilst the funding and subsequent availability of IT hardware can be affected by lack of funds, the school's budget itself should not be the sole source of providing equipment for schools.

4.4 METHODS OF DATA COLLECTION

4.4.1 ELITE INTERVIEWS

The initial part of data collection was that of conducting interviews with “Elite” personnel across Wales. Elite interviews refer to the interviewing of those considered to be at the top of the system (Odendahl and Shaw 2001), in this case the education system. In Wales there are three tiers of education, Tier 1 which refers to government, Tier 2 which refers to regional consortia, qualifications, and inspection organisations; and Tier 3 which refers to schools themselves. One benefit of Elite interviewing is the ability to gain that unique insider perspective as an expert in the field and in this research the Elite interviews will focus on a sample from those who have advised government. It will be focused on obtaining vital first-hand information as to the background and overall aims of the digital strategy for schools in Wales. These Elite interviews endeavoured to develop further the background to the breadth and range of governmental policies and support systems provided for digital development of school staff and indicated to what extent schools are aware of the background to these policies. This was used to triangulate with the views given by leaders in schools and then compared to the day-to-day experiences of teaching staff.

The selection of these participants was purposive, as there are some significant individuals within the Welsh education landscape who have had a long relationship with digital development. Two of the four participants have been instrumental in decisions around ICT and Digital in education since early policy decisions were made and they were approached personally to participate. The third participant was a leading voice at the time in this field and was also approached personally. The final participant was selected from a small sample of 5 potential participants, as a regional digital lead. This participant was suggested by two of the Elite participants as being a key person within the regional system so was approached first.

The nature of conducting these Elite interviews required some further considerations primarily because of the position that these individuals hold within the education system in Wales, and the role they have played in the development of digital policy and practices over time. It was important to clearly approach these individuals via a detailed email explaining the research and my job role, along with the way in which their interview data would be managed and shared as part of the thesis. These Elite participants were more likely to participate if given all the information and can see it is unthreatening (Williams, 2012). It was critical to assure them of anonymity but also to consider their responses in terms of their own position within the system, allowing them to skip certain questions (Liu, 2018). Prior to these interviews, I needed to familiarise myself with the work that the participants had been attributed to during the decade of national digital policy development as well as their current role and impact of work now, so that my questions reflected this, and I would be able to confidently approach them (Liu, 2018). It was important to remember throughout the process that as Elites, used to holding positions of power within the digital Wales space, these participants would have a narrative and set of key scripts to draw from (Neal, 2019), so the development of a rapport would be essential along with carefully crafted question prompts to steer the conversation more broadly than the 'party line' (Ma, 2021)

These interviews were also all conducted online via Teams, and I was clear to explain that I would be recording the interview for transcription purposes only. Since the Covid-19 pandemic, many people have become more adept at holding online conversations, and the logistics of fitting in interviews with Elite participants schedules meant that offering online interviews meant all approached were able to participate (reference). These one-to-one interviews were scheduled in advance for approximately one hour and conducted at a time that was convenient for the participant. The nature of online interviews allowed ease of transcription following the interview (Eftekhari, 2024), through the recording process, as well as limiting the need for travel to venues so were both time and cost effective. Although there were potentially issues with technology, the participants chosen were digitally competent and

worked in organisations that utilised online software regularly, so this minimised this issue. The main consideration with these interviews was the ability for me to conduct them in a location that would allow for privacy and no interruptions whilst recording, and to ensure we had both tested for technical difficulties (Chan, 2021) which did happen on one occasion despite my best efforts. However, the benefits of not having to travel to different locations (Olliffe, 2021) and to be able to utilise the recording transcription features outweighed this. Another benefit for myself was that by not being physically in the same space as these Elite participants, whose knowledge and experience of the subject could have led to anxiety on my part, we were both able to be in our own, familiar and safe environments (Olliffe, 2021). In some circumstances it would be essential to consider the digital divide as being a barrier to participation, but this was not the case with these participants for whom online conversations had become a normal part of their everyday working lives since the pandemic.

Each of the Elite participants were involved with policy consultation work for the Welsh Government at various times over the past two decades. Brief biographical details are included in Figure 4, however due to the geographical size and connectedness of the educational community within Wales, I have refrained from giving too many details to protect their anonymity.

Elite 1 (E1)	Primary headteacher and former member of WG National Digital Learning Council
Elite 2 (E2)	Secondary headteacher and former member of WG National Digital Learning Council
Elite 3 (E3)	Academic, Former member of ICT working groups
Elite 4 (E4)	Former Teacher and Regional Consortia Lead

Figure 4 Brief Biographical Details of Elite Participants

The interview was in depth and semi-structured (Morris 2015), (see appendices for the interview guide). Consideration was given to the use of both structured and unstructured interviews, however, I felt that a structured approach would offer less opportunity for a breadth of answer, and potential for answers to be developed further if required, and an unstructured interview could have led to the direction of the conversation being less focused on my key area of the policy around digital in schools. The semi-structured questions guided each interview through the same key areas in the same order for ease of data analysis, but then I selectively probed for further details dependent on the responses given.

The questions were constructed and piloted with my own headteacher for clarity and understanding, leading to some minor changes in terms of phrasing and a reduction in the number of questions to reduce interview time. These questions were for the semi structured nature of the interview, and it was envisaged that different participants would have differing levels of detail for each question depending on their current and prior roles. Throughout, interview clarity was sought through additional questions when required.

4.4.2 ONE TO ONE INTERVIEWS WITH HEADTEACHERS AND DIGITAL LEADS

For several members of the staff, notably the headteacher and the digital lead it was be most suitable to conduct one to one, semi structured interviews. The purpose of these was to guide individuals through a series of pre-planned topics but in a way that allowed for adaption and changes if necessary to fit with the flow of the interview.

A semi structured interview was a flexible way to understand how policy translates into practice and how the schools are developing their digital competencies. Face to Face interviews enables the researcher to experience the non-verbal cues that take place during a face-to-face interview (Dialsingh, 2008). Whilst time was a factor, these few one-to-one

interviews provided a rich data source that can then be utilised in planning the group interviews and lead to an understanding of what documents should be regarded as within the scope of each case. As these interviews took place in the school during my visit, face to face interviews were logistically the better choice for them, compared to the online nature of the Elite interviews. However, due to pressures of availability of one of the school's headteacher, a Teams interview online was conducted instead, following the same semi structured pattern of the other headteacher and digital leads interviews. This was at the request of the headteacher to still be able to fully participate in the study. The same considerations then applied as with the Elite participants online interviews.

Whilst the interviews were semi structured in nature, it was important to have a set of questions and prompts that are used, and that these were broadly the same for similar positions in each of the two case schools, so that a fair comparison could be made. The interview guides can be seen in the appendices.

4.4.3 GROUP INTERVIEWS / FOCUS GROUPS

Merton and Kendall (1946) identified that the purpose of a “focussed interview” was to gather data from a group of individuals with a shared concrete experience. For the research, the individuals concerned were a group of teachers and a separate group of support staff who work in schools that characterised as digitally leading within its locality. Keeping these two groups separate acknowledged the differences there are between the role of the teacher and the role of the support staff in a school, without diminishing the importance of either. Understanding that complex dynamic (Hollander (2004, cited in Stewart et al. 2007), as a practitioner myself, led me to make that choice. However, for both groups, this shared experience of the working practices in a school who were striving to make digital tools and technologies part of the everyday experience for young people is the concrete situation that Merton and Kendall (1946) refer to.

One main benefit of these focus group sessions within a school setting were time related as the groups as time away from undertaking their primary role to take part in research or other activities is at a premium, and it was essential that I considered the workload impact of this for the individuals and the school. Had I conducted these as individual interviews, it would have required a further six hours for the school to accommodate me.

A second benefit was that the groups were considered as homogenous in nature – one group of classroom teachers and another of non-teaching staff. These groups all represented key areas of the school as an organisation and as such the group format elicited discussion around the topics of digital skills, professional learning, and policy implementation, and already had a group cohesiveness which is important for a successful focus group (Pennington, 2002, cited in Stewart et al. 2007). These groups, whilst homogenous and cohesive are likely to have varied views and one potential issue with a group situation is the dominance of one or two voices and reticence of others, as these groups are peers and colleagues it may be that they are reticent to express views in front of others, but the reiteration of it being a confidential and anonymous space for discussion it is hoped that this will be alleviated. Forsyth (2014) suggests that the act of creating a group dynamic means that there is an additional influence in play, purely by being part of the group as “group members do things to and with each other” (p.10). However, this can also lead to more detailed discussion as group members draw prompts from each other when considering some of the key topics for discussions. The participants ranged from early career teachers to experienced staff (see Figure 5 for further information about focus group participants). In creating this focus group, I was guided by the headteacher to ensure a representative coverage. These teachers were those who have the largest teaching commitment and to whom policy is “done to” by those with leadership roles.

Another focus group was that of the non-teaching staff who included learning support assistants and administrative support staff, all of whom formed an integral part of the school and should be offered suitable professional learning opportunities in line with school priorities.

Groups were around 3-4 participants in each, and care was taken when moderating the groups because of the potential to have pre-existing group dynamics and internal hierarchies affecting outcomes. The headteacher selection proved a useful tool for the purpose of this research as all staff were confident to discuss the use of digital tools within their role and to give clear opinions as to the importance given by the school to them. These staff might have felt under undue pressure to give “good” answers or to toe the party line. However, I made it clear to participants that their responses would be anonymised, and I emphasised that I wanted them to speak honestly about their experiences. The answers seemed to be an honest reflection of the school and showed the open nature of the culture of both schools. On reflection, these focus groups became more like group interviews as the question prompts did steer the conversation rather than the individuals moving the discussion on themselves, and my role as researcher was to keep feeding the question prompts rather than to facilitate from a more natural occurring discussion.

This data however, offered a rich wide source of information in a shorter timescale than conducting only individual interviews with all stakeholders and may have given rise to more voices being heard. The selection of participants is outlined in Figure 5.

	School H	School N
Interview	Headteacher (SHH)	Headteacher (SNH) - Online via Teams
Interview	Digital Lead (SHD)	Digital Lead (SND)
Teacher Focus Group	Selected by Headteacher, (SHT) 3 participants	Selected by Digital Lead (SHT) 3 participants
Support Staff Focus Group	Selected by Headteacher (SHS) 4 participants. (2 teaching assistants and 2 office staff)	Selected by Digital Lead (SNS) 4 Participants. (3 teaching assistants and 1 office staff.)

Figure 5 Case study participants and pseudonyms.

4.4.4 NOTE ON TEACHER AND SUPPORT STAFF SELECTION:

To support schools with their participation in the research I asked the headteacher / digital lead (delegated by headteacher) to select participants initially for both the teachers and support staff group. I established that I would ideally like a mixture of staff in terms of length of service in the school and that their level of digital competence was not a factor. In fact, I preferred a mixture of staff who considered themselves digitally fluent and those who would not so that I could better see the way in which the school's digital mindset was pervading throughout the organisation and not just with those already digitally competent. I expressed to the headteacher that I was keen to include administrative staff not just classroom-based staff to look at whole school adoption of the digital mindset, and that it wasn't necessary for any of the staff to be digitally leading within the school to ensure that I could see this in action. The participants were therefore selected by the headteacher from the criteria I had shared with them.

I knew that the logistics of releasing staff from their roles during the day can be problematic so by allowing the headteacher to select participants who could be made available, it helped

build the relationship I had with the school and demonstrate my understanding of the pressures of day-to-day school life.

Whilst the advantage of these choices allowed schools to select teachers without too many constraints and was considerate of workload, I was aware that these staff had been selected and would therefore likely be those who would reflect well on the school's ethos and culture. By planning my prompts in advance but not sharing these with the headteacher, and by ensuring that the prompts across both schools remained the same, I hoped that this would allow for honest answers from everyone. Additionally, I hoped that by giving all participants a brief insight into my own teaching background and experience at the start would relax them and allow them to feel confident with giving honest answers.

4.4.5 USE OF DOCUMENTS

Document analysis is a systematic procedure for reviewing or evaluating documents (Bowen, 2009). Documents are found, selected, and then information from them is sorted into themes and categories, in this case to support or challenge the findings in the interview.

To triangulate responses, it was necessary to view documentation from the schools, particularly those relevant policy and process documents. These documents could have provided a clear outline of how the school is leading and developing digital as part of everyday life within the school, as well as demonstrate where digital is included in wider policy. Additionally, I searched the Estyn website for the school's most recent inspection report and the Hwb website for any case studies developed by the school as part of national research and enquiry projects around digital use. This would have indicated if the school had been recognised for its digital achievements with a wider audience than just the regional school improvement partners.

I had asked the schools to provide me with any documentation such as their most recent SLO Survey report, their most recent 360DigiCymru Report, their most recent 360Safe Report, any key policies linked to digital use within the school or curriculum, any key document referencing a digital vision. However, other than the national documentation, the schools did not have any specific policies relating to their use of digital. They both used acceptable use agreements for staff and pupils from the same template, and they both included aspects of digital within their professional learning calendar, but nothing was specifically created at school level about the use of digital. That is not to say that there was no reference to the use of digital across school policies. It did in fact permeate throughout documentation, guidance and practice. This included weekly bulletins that included information about digital tools and techniques, opportunities for professional learning built into all professional learning days, guidance and training for use of digital tools within teaching and learning and support systems for administrative digital tools as part of the induction processes. This integration into other policies areas showed how these schools had developed a digital mindset that was part of their way of being rather than an additional piece of work.

The main distinctly digital documents that I used in this research were those of national policy and guidance, along with the most recent Estyn reports for the two schools. The school's 360Safe reports, whilst demonstrating high levels of digital safety awareness, were both similar in terms of competencies and output, due in part to the tick box method of assessment and the auto-generation of reports by the platform. Both schools included professional learning around digital as a standing item on professional learning days and both broadly covered the same areas in this training, as suggested by changes to national policy or supported by regional digital teams. For this research, the documentation was not sufficient to fully analyse as additional sources of data but did serve as useful information when familiarizing myself with the schools and positioning some of the interview data into context.

4.4.6 DATA COLLECTION SUMMARY

The figure below (Figure 6) summarises each of the methods of data collection used in this research and the contributions that each made to the research findings.

Method of Data Collection	Purpose
Interviews with Elite Participants	Clarification of national policies, timelines and priorities. How these were intended to be received and enacted by schools.
Interviews with Headteachers / Digital Leads	Exploration of how school leaders received and enacted the policies, how they shared this within their schools, how they prioritised the digital mindset
Focus Groups with teaching / non-teaching staff	Establishing the day to day, ground level reality of enacting these policies and realising the digital mindset vision of the school leaders. Discussion around barriers and opportunities.
Document Analysis (national and school level)	Supporting evidence of these policies as written, identification of gaps, contradictions and misinterpretation from policy language to school-based realisation.

Figure 6 Purpose of each data collection method.

4.5 ETHICS

Throughout this process it was essential that I followed clear ethical guidelines for the completion of educational research, to both protect the privacy of the participants and their schools and to ensure that the research is completed with integrity. (BERA, 2018 p.4). The research was approved by the Cardiff University School of Social Sciences' Ethics Board. Every participant was given information sheets and consent forms at the start of the process and verbally reminded of their right to withdraw at any point.

Although the headteachers had agreed for the schools to be case studies, and were the gatekeepers to the other staff participants, it was imperative that each person interviewed or part of the focus group also gave informed consent to participate in the study, voluntarily (BERA, 2019, p9). It was important that although the headteacher had selected these staff that the other staff participants understood their responses were not going to be fed back to the headteacher, and they would not be identifiable once the data was collected. The headteacher was also made aware that the contents of all interviews and focus groups would not be shared with them in a raw state, and that whilst they had selected staff on the basis of availability, all participants and the school itself (via the Headteacher) were given the right to withdraw throughout the process prior to, during and following data collection. For consent forms and information sheets, see appendices.

I aimed to put the participants fully at ease during the process and met them at school during their working day to reduce any burden on them, the headteacher being supportive of this and putting cover in place for their job roles during the interview/focus groups. I also limited the meetings to sixty minutes for all participants. To maintain confidentiality, I assigned both the school and the participants with pseudonyms and limited school-based data that would have made the cases easily identifiable.

With those interviewed as part of the Elite group, it was essential that they also remained anonymous to protect them, their reputation and to ensure that they felt comfortable in answering questions.

Data was stored securely in compliance with the General Data Protection Regulations (2018) and in alignment with the University data collection requirements.

During the data collection phase, no ethical problems were encountered. No participants requested to withdraw from the research and there were no areas of concern from participants or myself around the process. Whilst the research is not of a sensitive nature, in case of any unforeseen distress from any of the participants I had planned to stop the interview/focus group session immediately and attempt to put them at ease, giving them the choice to resume at a later point or to terminate the session altogether (BERA, 2018). Regardless of whether they decided to continue at a later point or terminate completely, if this situation occurred, I would have undertaken a check in with them a few days later as a debrief for them.

4.6 CLOSE TO PRACTICE RESEARCH AND REFLEXIVITY

According to BERA (2018), close to practice research is often that which is defined by practitioners and in conjunction with practitioners. My own experience as a teacher and middle leader, particularly with digital leadership experience led to my acknowledgement that there was a need for this research, to understand how some schools can become digitally competent and to share these findings publicly. However, as close to practice, it was important that I did not infer from the answers using my own experience to cloud and influence both the data collection and the analysis phase of the research.

It was also important to recognise that being close to practice as a practitioner myself, gave me greater access to the field because respondents may be more willing to share their experiences with a researcher whom they perceive as “sympathetic to their situation” (Berger, 2015), and they will help to build those initial relationships between myself as researcher and those I am interviewing.

Being ‘researcher near’ (Mannay 2010) it was important that my knowledge and experience did not either advantage or disadvantage the research. By being able to speak the language of the teacher I was able to potentially influence the research. However, it was critical that I used this experience only to build the relationship with the participants and put them at ease during the data collection. I openly discussed my own experiences and background at the start of each interview and focus group so that the participants were able to be fully informed. Understanding the language and context of teaching put me at an advantage in this respect, as an insider, with shared experiences. However, it was important to thoroughly consider the analysis of data to ensure I hadn’t missed or misinterpreted meanings, by looking at this through my own lens and experiences.

By selecting primary schools over my own secondary sector, I was helping to make the familiar strange, positioning myself as 'the other' (Delamont, 2010), in so far as the workings of a primary school being less familiar to my own experiences, which went some way to negating the disadvantages of being researcher near.

This process of reflexivity enhanced the research by enabling me "to ponder the ways in which who they [my own experiences] may both assist and hinder the process of co-constructing meanings" (Berger 2015, p221), and therefore to better present the data.

Additionally, by adopting constant comparative methods of data analysis (Mills & Rioux, 2008) the research findings would be grounded in the actual data collected rather than my own assumptions of the interviews but would also recognise the influence that my own experiences have had on the findings.

4.7 TRANSCRIPTION AND DATA ANALYSIS

Thematic Analysis is often seen as a method independent of any theoretical framework or epistemology (Braun and Clarke, 2012) making it an approach that is accessible to all. Thematic Analysis can identify, analyse and report patterns of data collected in a school setting (Xu and Zammit, 2020). However, it is often seen more as a broad tool than a named method such as grounded theory (Braun and Clarke, 2012). However, because it is not linked to specific theoretical backgrounds, thematic analysis spans across many different perspectives and research interests (Fugard and Potts, 2019) I will also draw on some of the principles of content analysis (Huxley, 2020) namely that of coding the data rather than drawing solely on specific trends or themes.

To code the data into relevant themes, it was important to first consider what makes a theme or code worthy. Braun and Clarke (2012), suggest that it isn't possible to quantify this precisely but that a theme is something given prevalence across the data set even if it is more prevalent in some responses than others. Furthermore, it should reflect something from the research questions to be considered a theme. An inductive or bottom-up approach to the creation of themes were considered (Hammersley, 2019) with the data providing the themes initially rather than a set of themes being sought from within the data based around expectations from the research questions. Existing themes from prior research and experience were looked for within the data, and a deductive approach was required to generate specific codes linked directly to wording found in policy documents around digital in education (Xu and Zammit 2020)

The method I used for the process of coding will come in part from Braun and Clarke's (2006) six steps below:

1. Transcribing and familiarising myself with the data, noting initial ideas
2. Generating initial codes across the data set
3. Collating codes into themes
4. Reviewing the themes across the data set to generate a data map

5. Clearly defining and naming the themes
6. Producing the report drawing on the data set.

The initial transcription process was undertaken in two ways. For the Elite interviews, and the single headteacher who interviewed via Teams, I used the technology to transcribe the interviews automatically using the Teams built in software and then undertook several rounds of manually checking the recording against the automatic transcription to clarify and finalise the language that was used. For those interviews that took place face to face, I had recorded the conversation, and I uploaded this digitally onto my computer and again used speech to text software built into Microsoft Word, to undertake the first transcription. As with the Teams interviews, I then spent time manually checking the transcription and amending it as well as organising it to show who said what.

Having transcribed the data, I then spent time familiarising myself with it, by reading and reviewing the data, anonymising it and getting a feel for the voice and the meaning of answers given to the questions. Through the 12 detailed interviews across 2 schools and interviews with four Elite policy leads, I began the coding process to find and develop the themes, following the second of Braun and Clarke's (2006) 6 Step practice. Generating the initial codes by looking for familiar or repeated words and phrases, then also looking at the wider context of the paragraphs and answers to the guided questions (Braun and Clarke, 2006). I complemented this by writing on and then highlighting physical copies of the transcriptions, comparing the digital versions and paper versions to establish the common codes. By generating mind maps of key codes across the two different schools and across different roles it became clear to visualise the links between the codes. The codes very quickly began to appear, and I next began to group these together into themes.

Whilst I planned to initially use NVIVO to support this, it became clear it would be unnecessary mainly because of the small volume of data I was using, 12 separate transcripts from the

interviews, grouped in three sections. Instead, I found myself using digital and physical paper to establish the codes and then create the themes from the codes.

Developing the codes into themes is the third of Braun and Clarke's (2006) model and the process of thematic analysis is to identify, analyse and report patterns of data (Xu and Zammit, 2020). The themes were originally a priori and were expected to link closely to Vision, People and Organisation categories that were part of Pettersson's (2011) research. Vision, Leadership and Professional Learning (People) and Infrastructure (Organisation), along with National Policy became apparent during the coding and led me to develop and refine the four key themes that were identified in focus groups and interviews throughout.

These four themes and coding words can be seen in Figure 7 below:

Theme	Coding Words
Leadership and Vision	Leadership, Vision, Head, Delegation, Role Model, Policy, Funding, Budget, Culture
Professional Learning	Support, Help, Sharing, Mentoring, Induction, Professional Learning, Communities, Training, pedagogy,
	Curriculum, Safety, Implementation, Collaboration, COVID, Culture
Infrastructure	Barriers / Problems, (Internet Connectivity and Reliability), EdTech / Devices, Finance, Hwb and Covid
National Policy	Policy / Guidance, Future Strategy, Confusion with Implementation

Figure 7 Main themes and coding words.

NOTE: A further set of codes was identified within the interviews and focus groups on the integration of digital tools, specifically focusing on teaching and learning tools. However, as this thesis is focused on the policy enactment, I have not conducted any further analysis or discussion around these codes.

4.7.1 A NOTE ON QUOTES

All quotes have been attributed to either one of the two schools (SN / SH) or to an Elite participant (E1 / E2 / E3 / E4). The roles within the school are further defined as follows with this letter being assigned at the end of the SN/SH designation: D = Digital Lead, H = Headteacher, T = Teaching Staff; S = Support Staff. The decision not to link the school-based quotes more specifically with individual teachers or support staff was made to demonstrate the importance of the whole case rather than individual responses. Further relevant details about the participants can be found in the tables within the Selecting My Cases and Participants section.

4.8 METHODOLOGY LIMITATIONS

4.8.1 BEING RESEARCHER NEAR

The notion of being researcher near (Mannay, 2010), was one I knew I would come up against and had intended to openly inform all participants of my own experiences and knowledge at the start of the interview. This strategy seemed to work well as the participants were able to talk to me knowing I would understand the institutional language of schools, and with the case study participants, that I would have had experience of many aspects of their day-to-day experiences with digital.

I had intended to share the full transcripts with all participants prior to analysing the data however time did not permit this to happen. However, I shared the draft findings with each school and each Elite participant to give them opportunity to fact check or clarify any points before my submission. This ensured that they were not being misrepresented, even though anonymity has been preserved, and ensured that the conclusions were based on accurate representations of the data collection.

4.8.2 SELECTION OF PARTICIPANTS ESPECIALLY SCHOOL LEVEL

In both schools, the headteacher selected the teachers and the support staff who were to participate in this research. The headteacher was told that the participants interviews would be anonymous, and the participants were also told the same. However, the fact that they had been selected to participate could indicate that they were chosen to best represent the school. It may be, that if I had selected other staff or chosen a random sample that the findings would not have been the same, particularly around the leadership section of the questions. To mitigate for this, I tried to keep my questions broad and decided not to identify the individual teachers or support staff as separate people in the transcripts or analysis to maintain the anonymity of participants and ensure that they answered questions in an honest manner.

4.8.3 SPACE OF DATA COLLECTION

For a range of logistical factors around undertaking this EdD as a part-time student with a full-time job, the data collection was undertaken over a long period of time and in different academic years. This does present some timeline concerns as the Elite participants' views in the summer of 2022 would likely have been different if interviewed in the following academic year (spring/summer of 2024) along with the school data collection.

The digital world moves fast, as has education in Wales over the past few academic years. When interviewing the Elite participants, schools were only just getting 'back to normal' following the Covid-19 outbreak, school inspections were only just returning to business as usual, and the curriculum for Wales had only been running in primary schools for that academic year, it was not a year old at that point.

However, a year later in Spring of 2024, primary schools were almost through a second complete year of the new curriculum, inspections were firmly re-established, and school level data showed that Covid-19 was no longer having a day-to-day impact on learners or attendance (wider impacts of Covid-19 were appearing and still do, but that is outside the scope of this research).

In terms of digital development, the rise of Generative Artificial Intelligence (AI) had begun in September 2022, when Chat-GPT launched its first open-access, free model but at the point of the Elite interviews this was still a relatively new idea outside of the scope of education. As I had carried out the interviews before these developments, discussions around AI were not prevalent in the interviews.

4.9 CONCLUSION

Throughout this chapter I have outlined the way in which I have collected, collated and analysed the data to complete this research. Using principles of both case studies and interviews and undertaking elements of thematic analysis I have effectively worked to gather and record data in an area which moves quickly for schools and has seen significant changes during the time of the research. However, the codes and themes identified transcend pieces of technology or tools in use, and through careful questioning I have been able to delve into the deeper considerations that exist when developing and enacting a digital mindset in schools.

In the next chapter I will describe the findings, looking at each of the four identified themes in turn.

5. FINDINGS

In this chapter I outline the findings, considering the school cases and the comparison between the schools and the Elite participants. Through this chapter I theorise the findings through the main themes that have become apparent and relate these back to my theoretical framework. I will draw on perspectives from the Elite participants the perspectives of the main policy actors in the two schools in the study. The disconnect at times between the beliefs of those advising national policy and those enacting it at school level is an area that I will explore throughout the next chapter.

I discuss the four broad themes of National Policy, Infrastructure, Leadership, and Professional Learning. I purposefully divided these into two sub sections, the first focuses on national policy and infrastructure as these relate to aspects of digital development which fall outside of the direct control of schools for the most part. The second section focuses on leadership and professional learning as these are directly impacted at school level by the headteacher and staff.

5.1 EXTERNAL FACTORS - INTRODUCTION

This section is concerned with external contexts (Ball et al, 2011b), the national policy itself and the wider, external systems in place across Wales that will then make limits on how schools can enact these policies. These include the local authority, who manage the network infrastructure and sustainability of devices; the Hwb EdTech team, who provide specific earmarked funding and device catalogues annually for digital upgrades; the School Improvement services who offer professional learning to schools; and Estyn, the national school inspectorate service who offer a public acknowledgement of schools' strengths and areas for improvement (Figure 8).

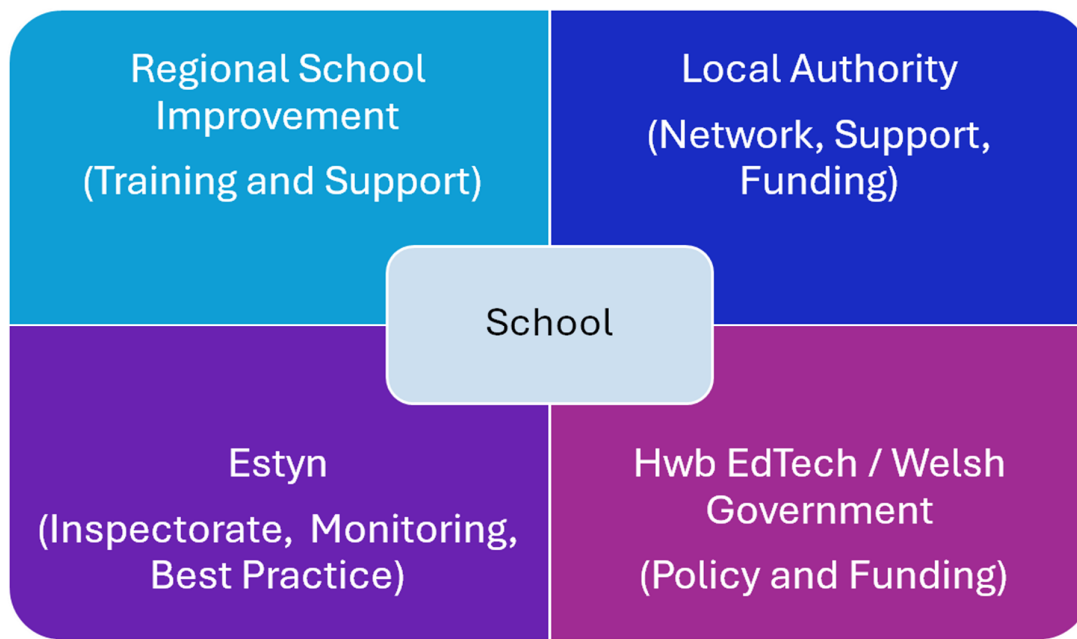


Figure 8 External factors influencing schools' policy decisions.

These external contexts, become a significant part in the decision-making process for school leaders when enacting policy, according to Ball et al (2011b) and strongly influence the direction of travel for leaders across all policy fields, or as summarised “schools enact policies in circumstances not always of their own choosing” (Ball, 2011b, p41). Schools are provided with a network as part of being a local authority-controlled school. this therefore means that schools do not directly pay for broadband, routers, access points and cabling. Changes and upgrades are factored into the schools' top-level budget and a service level agreement with the local authority is signed annually. This is in place to offer schools a safe and reliable connection throughout their building without the need for school business managers to source contracts themselves. Additionally, whilst schools can make choices about the devices they purchase, they are given a national funding stream with an attached 'catalogue' of items that can be purchased, so they are limited in terms of what they can choose. Therefore, whilst the participants discussed in-school connectivity, devices and programmes, the majority of this is outside the control of the school leadership team and

externally managed, so links more appropriately to external contexts, along with that of the development of national policy and guidance documents.

The creation of a digital mindset “pre-supposes the development of infrastructure” (Timotheou, 2023, p 6712) and in Wales, this provision has formed part of the digital journey since its inception, over 10 years ago - an intent to develop a future-facing solution for schools, as described by one participant as being able to consider “what we wanted the future of digital learning to look like in Wales” (E1). However, it appears from the research that whilst the initial vision for digital education in Wales was considered at the start of the journey, there was not sufficient stakeholder engagement during the initial phases and the later developments that have occurred. For this reason, digital in schools is still not held as important by all schools because the involvement has not been sustained. One participant summed this up very directly by stating: “I think that digital is still considered a lower priority across the entire system” (E4), suggesting that not only within schools but also across the local and national levels digital in schools has not been viewed as a critical part of education. This lack of stakeholder involvement is part of the reason for this perceived lack of importance, as another Elite participant described: “If you don’t get the practitioners on board, you don’t value this as being important...then it’s a failure” (E2).

If that early national vision is to be realised, then national policy, guidance, infrastructure need to be realised across the system to enable in school leadership and professional learning to be put in place at school level. A clear national route map is required that can be distilled to school level, showing the importance of having a digital future in our schools for our staff and our learners.

I will now consider each of the themes in turn, beginning with the need for clear national policies. The data collected from both Elite participants and from the school cases are used within this section. I had initially assumed that the data from the Elite participants would be

more apparent within this section, as they tended to look at the whole picture, however the school level data was also invaluable in considering the enactment of these two areas.

5.2 THEME 1 - NATIONAL POLICY AND GUIDANCE (EXTERNAL)

When looking at the enactment of digital policies, it was important to consider some of the most common policy and guidance documents that were mentioned by participants both in schools and Elite. The documents provided background context, raised questions during my planning and preparation of the research and helped to locate the findings in the context of Wales. A simple thematic analysis (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006) took place at the start of the research to begin to get a sense of the themes that might come up in the interviews. However, many of the documents were found to have insufficient detail in their published form. Many of these were also online web based rather than printed publications or PDF documents, hosted via the Hwb platform, for example, the Digital Professional

Learning Journey (Welsh Government, 2021) which was last updated in September 2023. This means that the documents available should always be the current iteration but can be harder to navigate than a printed or PDF style file.

By critically reviewing these documents, it was clear that whilst there was a breadth of documents in evidence in the Welsh education system (outlined in the National Policy chapter) that link to digital use and tools, there were some anomalies and potential contradictions across the range of them. Even within curriculum documentation that concerns digital, there were differences between terminology such as the description of Algorithms being different within the Digital Competence Framework (Welsh Government, 2017) and the AOLE Science and Technology descriptors (Welsh Government, 2020), which in turn was different to how the GCSE and A-Level Qualifications by WJEC (the Welsh Joint Education Committee) defined them. The fact that there was no overriding national digital vision or strategy for education that links these documents together is apparent through these anomalies, as it allowed these contradictions to occur. In fact, some of the documents were rarely or never mentioned by any of the participants. Many documents had passing

references to digital use, including the Professional Standards for Teachers (Welsh Government, 2024) but most were linked to pupils' use.

Documents such as the Digital Competence Framework (Welsh Government, 2019) and the Curriculum for Wales (Welsh Government, 2020) guidance were discussed by participants but as these specifically look at learner outcomes, a large part of them fall outside of the scope of this research. This research focused more specifically on the school staff use and the development of the whole school vision to adopt an organisation-wide digital mindset. Additionally, although the Hwb platform was mentioned by almost all participants, as it is a repository rather than a policy document or guidance, I will not be analysing the content or the merits of it in this research.

The official documents that I considered here were the following:

- Digital Professional Learning Journey – this is the nearest document to a digital strategy for schools and is designed as a model to support schools develop their digital remit.
- Estyn School Inspection Reports for both the case study schools - to give a sense of whether at the time of publication these schools were noted by the national inspectorate for their digital skills and to compare the significance of digital compared to other skills.
- Schools as Learning Organisations – this is an aspect of Welsh Education that is relatively new but encourages schools to become more reflective and adaptive in terms of their development and places digital developments for staff within its scope.

A Welsh education digital strategy was also discussed by many participants. However, there currently does not exist a formal document for this in terms of education. There is a national strategy (Digital Strategy for Wales, 2021) which focused on business and public sector use of digital tools, but this doesn't directly influence day to day education practices.

Hay (2024) reports three phases of policy enactment with the final phase being reliant on stabilisation. The evolving nature of digital tools and technologies could be considered a significant barrier or complication for school leaders in achieving the final policy enactment phase, that of it being in action and part of the school's culture. The lack of an overarching digital strategy in education policy documents which can transcend the evolution of digital tools and technologies could therefore suggest that full enactment is unobtainable for school leaders, as the stabilisation phases cannot occur.

5.2.1 THE DIGITAL PROFESSIONAL LEARNING JOURNEY

The Digital Professional Learning Journey is described in its documentation as

The Digital Professional Learning Journey (DPLJ) has been created as a model to support schools in developing and implementing their vision for digital learning, developing staff professional learning and support the effective implementation of the Digital Competence Framework for learners. (Welsh Government, 2021)

According to one of my Elite participants, the DPLJ began life as

An architecture for the professional learning to support the Digital.

Competence Framework, designed as an aspirational model taking you from vision to practice to implementation to review (E3)

However, all Elite participants felt that the DPLJ had not been effective in translating the national policies for schools, particularly both headteachers who felt they did not give enough time to it because they had already started creating a digital vision of their own, as one stated:

We were already a fair way down that on our journey. We were given it by the regional consortia when it launched...but digital learning is in the heart of all our learning in school already...(SNH)

This headteacher felt that it did not offer them any alternatives or suggestions for improvements, even though it was designed to support schools with developing their own vision and digital strategy.

The development of a school level digital vision, which is the first step of the DPLJ was mentioned by most of the participants across school leadership and Elite. However, the structure of the DPLJ seems to reflect what these schools are doing intuitively and does not offer them anything further of benefit to refer to.

One school had not made use of the DPLJ document. Although, their own strategy did consider the same items of leadership, professional learning and infrastructure, and the headteacher commented that digital was “definitely planned for beyond the classroom”, indicating that the purpose of the DPLJ is being lived within the school even if the actual reference to its use wasn’t made by the staff.

In the other school, the headteacher had asked a staff team to review the whole document and dissect in to see what value it could have for them. They found that the emphasis on having a specific digital vision was something their own school strategy was lacking:

They [the staff] came back and said we needed a clearer vision. Ours was a bit long winded so the staff created their own digital vision, which now allows digital learning to be front and centre of our school. (SHH)

The DPLJ document itself does not provide supporting materials or templates to develop a vision, leaving this up to the regional support partners to work with the schools in a bespoke way. Both schools are digitally leading, recognised by their local authority as such. Whereas the DPLJ seems to be written to support schools to get to this position.

Although the DPLJ document itself doesn’t offer a toolkit for self-assessment or any prompts, templates or exemplars for schools to follow, an additional add on element of the DPLJ is the

360degree Digital Toolkit, which is designed to support school leaders with developing their own digital strategy. However, neither of the schools had used it.

One Elite participant stated that:

Most engagement around the 360 Digi Toolkit has been through Welsh Government and regional consortia, with limited contact with people in schools. In 2023/4 academic year [around the time this study was conducted] only around half of schools had registered to use this tool, and around 2/3rd of these had updated their information in that time, implying only 1/3 of schools in Wales were using the 360Digi regularly and potentially the DPLJ framework. (E3)

5.2.2 ESTYN DOCUMENTATION

Estyn documentation was mentioned by some participants, with Estyn's role being to inspect and publicly report on schools. Their documentation is often considered as the yardstick by which the public can rank and rate schools, particularly as Wales abolished league tables in 2001, which were formerly a method that the public could use to rate schools. Whilst Estyn primarily focuses on learner outcomes, and learner use of digital skills, schools use their own and other schools' inspection reports as focus for enactment of policy. Often Estyn produces Case Studies or Thematic Reviews which outline how schools are successfully integrating a particular aspect of the curriculum, and this can influence enactment decisions made by other schools. If Estyn look favourably on something in one report, it is likely that other schools will want to emulate that themselves.

Both schools had been inspected a few years prior to my visit to them, and both under slightly different Estyn frameworks of reporting. School H has also been inspected after the case study interviews; however, I have chosen to only consider the previous report, which is also in a similar style and organised in a similar manner (due to changes in the national reporting process by Estyn) to the report for School N.

Both schools were given comments about the strong progress and exceptional ICT skills of their learners and evidence of good planning for progress with digital skill.

Some of the key aspects of the reports are quoted below:

School H (Estyn Inspection Report)

Nearly all pupils develop exceptional ICT skills that they apply to a very high standard across the curriculum. They log on to a virtual learning environment independently. Most pupils in lower key stage 2 classes manage their workspace areas on a network or in the 'cloud' confidently.

School N (Estyn Inspection Report)

Throughout the school, nearly all pupils develop highly effective ICT skills. In the foundation phase, nearly all pupils use a wide range of computer programs and applications on tablet computers well. Key stage 2 pupils develop these skills further across different platforms available in school, such as tablet, portable and fixed computers. By Year 6, most pupils have developed excellent ICT skills.

Both quotes demonstrate how the schools have enacted policies as they are clearly visible within the teaching and learning of each school. During a high stake's situation such as an inspection, teachers demonstrating their use of ICT shows confidence in their own abilities. This is testament potentially to the successful enactment of digital policies and the culture of the school to embrace digital tools and technologies.

5.2.3 SCHOOLS AS LEARNING ORGANISATIONS

There was a lack of feedback during the interviews around the Schools as Learning Organisations (Welsh Government, 2019) document, despite at the time of the research there was a lot of publicity around it, but this was only mentioned by school leaders in passing, and only in terms of the survey element which is the benchmarking tool, rather than

as being integral to their current planning. The Schools as Learning Organisations documentation states that:

SLOs nurture a culture of professional learning and enquiry. All members of the school or setting are involved in developing a shared vision to support their learners to reach their full potential (Welsh Government, 2020).

The features of SLOs include fostering a shared vision, continuous learning, collaboration and a culture of enquiry, and emphasises the use of technology by staff to support these elements where possible. Many of these key terms were heard throughout the school level interviews and the culture of learning together was apparent, despite the school not using the SLO model prescriptively for support. The Schools as Learning Organisations model was also not alluded to by the Elite participants, possibly because at the time of recording my interviews it was a relatively new aspect to the policy landscape.

At school level, the headteacher of School N said:

So would I say the SLO survey actually drives our school? Not necessarily.

You know, there has been elements where you can see the alignment between those different tiers of staff. You know how they feel about the school. And there's been some things that have come out that we have targeted then in our SDP [School Development Plan], but not always. I mean that has been a little bit hit and miss.

(SNH)

This may however say more about the fact that the school's leadership already looks to these types of working practices and therefore doesn't need the additional support that the SLO Model offers, rather than a complacency that they don't need to use it, or they don't have time to use it.

5.2.4 NATIONAL DOCUMENTS AND ENACTMENT THEORY

Enactment Theory recognises that policy is never simply implemented (Ball et al, 2011c). In fact, the findings of this study indicated that the breadth of different policies and guidance surrounding the digital agenda for education makes this a complex process, fragmented and vague at school level. The purpose of the Elite interviews was to allow me to see the development process of the national policy and guidance documents as discussed in the National Policy Chapter, from the start of the digital education journey in Wales and to ask how they found the implementation of them to be happening in schools now, which could then be compared with the reality as described at school level.

Three main areas were identified in the findings for this theme:

- The Range of National Documents
- Confusion with Policy Priorities
- Development of Future Strategy

I will consider each of these aspects now, using both supporting evidence from the Elite and school level participants.

5.2.5 RANGE OF NATIONAL DOCUMENTS

As mentioned in the National Policy chapter, there are a range of documents, policies and guidance in Wales that mention Digital and ICT provision in schools, some more explicitly than others. When talking about this with Elite participants, it became clear that right from the start there has been no single, clear, agenda for developing an organisation-wide digital mindset within the education system in Wales. This has stemmed from a range of different ministerial priorities, each Minister adding and amending elements to suit their own priorities (Interview with participant E2). This is not unique to digital policy or to the education sector, but inherent in the UK government system, and personal experience suggests that this means policies will change as education ministers' change. Therefore, the

importance of a digital mindset within education reflects the ministerial priorities at the time rather than coming from a solid national perspective that can adapt and evolve organically.

This lack of strong foundations coupled with the changing landscapes in terms of both the new curriculum in Wales and the increasing capacity of digital tools within our everyday lives, has led one Elite participant to reflect that: “There has been a lot of false starts when it comes to digital in Wales”. (E3).

One of these false starts could be considered as the time-delay between the Task and Finish group established in 2011 to look at ICT in schools and who identified the need for a review, and then the actual ICT curriculum review and publication in 2013/14 (Arthur, 2013).

Likewise, the delay between the Digital Competency Framework (DCF) in 2017 and the Digital Professional Learning Journey in 2019 (Welsh Government, 2019) designed to help schools plan for the implementation of the DCF, shows this disconnect between policy writing and government planning for enactment at school level. Another false start was around the formation of the National Digital Learning Council, which was designed to help steer the conversation around digital development, which launched in 2012, and provided an advisory group to facilitate the enactment of these policies at school level (Elite Participant, E3) This group consisted of a range of stakeholders from schools, higher education, further education and industry but was disbanded in 2020, just as schools began to work with emergency online remote learning during the Covid-19 pandemic. This has not been replaced with a new body despite the introduction of Curriculum for Wales with parity for Digital Skills alongside Literacy and Numeracy (Welsh Government, 2020) and the digital developments including the increase of Generative AI technology throughout society.

One of the successes of the Task and Finish group (2011) led to a learning platform, Hwb, which has become an established part of education in Wales since 2012, and stemming

from this group was the development of the Digital Competence Framework, targeted at end users - the learners of Wales (Welsh Government, 2019), However, Elite participants felt that there still wasn't a strategic, cohesive digital plan, with one participant noting that:

There had not been a consideration of how that [digital developments] would be led through a whole school vision, how the professional learning would be managed... We started at the classroom end, when we should really have started at the more strategic, all Wales ends. (E3)

This represents another false start where the big ideas haven't been substantiated into a realistic strategy or framework for schools to use. The policy documents and guidance have a focus on learner outcomes, as does the Hwb platform with resources for staff to use with students and classroom-based programmes such as Office 365 and Google for Education rather than considering how staff and schools would benefit from digital advancement.

This unstructured, somewhat haphazard approach to a digital agenda for schools in Wales has been continued in recent years potentially due to other more pressing changes and issues for schools which was recognised by one Elite participant,

"Teachers know that digital stuff is important, but I guess that there are other things that are slightly more important...and I think if you know you are going to get nailed by Estyn...or if there are other things that are more problematic... (E2)

The increased challenge in schools is well documented by the media and includes managing expectations from Estyn, raising attendance, introducing a new curriculum and preparing for new qualification as well as being front line support for the rising mental health crisis in our young people, and the impact of cost-of-living crisis. Overall, from the perspective of one Elite participant, it could be felt that "digital is still considered a lower priority across the

entire system” (E4). Certainly, from the evidence above it would seem that at a national level it is, and therefore that won’t enable it to become a priority across all schools.

The consensus of Elite participants was that digital should be a focus for all schools in Wales, starting with encouraging and supporting the teachers with clear policy, direction and professional learning: “if you don’t get the practitioners on board, if you don’t value this as being important...then it’s a failure” (E2).

5.2.6 CONFUSION WITH POLICY PRIORITIES

At school level, both headteachers suggested that the specifics of the policies are either unknown or unrelated to the day-to-day reality for most school staff.

“Most teachers can’t name the policies driving their digital practice”. (SHN)

“Policy didn’t always align with practical realities”. (SHH)

I wanted to explore this with the Elite participants to ascertain whether this was a case of being lost in translation between policy and schools, or if there was a lack of consensus between the Elite participants about the constituent parts of the digital education landscape in Wales. My initial question asked participants to outline their role in the development of this in Wales. Although I expected some individual differences in terms of the part they played in the development of policy over time, I had expected them to be able to put their part into the context of a known, strategic plan for schools in Wales. It quickly became apparent that this is not perceived to be the case. In fact, one of the concerns raised by all the participants was that the development of these digital policy documents did not seem to be within a larger, strategic context but piecemeal and ad-hoc, to reflect and react to a concern at the time.

There wasn't a consideration of how that [digital strategies] would be led through a whole school vision, how the professional learning would be managed and so forth, so ultimately, it came, in my personal view, in the wrong order, in that we started at the classroom end when we should really have started at the more strategic, all Wales end. (E3)

Despite being asked the same questions, the responses from the Elite participants came from varying perspectives and emphasized different elements of the national digital agenda. For example, another Elite participant commented on the national differences.

[there are] Inconsistent and variable support structures across the country and a lack of clarity about what the term digital means in schools and what good looks like" (E1)

Whilst policy and guidance were being created, the haphazard approach to this over time may have led to the variability between schools in its enactment. With this lack of a single voice, policy or strategic direction within those often-advising national policy, it is not surprising that there is such variance across schools, local authorities and regions of Wales.

One Elite participant noted that there had been a haphazard approach to digital developments over the years in Wales, but that schools needed stability now:

Some of it [digital developments] has been right place, right time, having the right minister...we want sustainable change within education, you don't want another initiative every year. (E2)

There was an agreement across the Elite participants that was echoed by the schools, particularly the headteachers and digital leads, that they wanted simplification and

coherence going forward. One Elite participant commented that “unless you had a clear model [in terms of a digital overview] that schools could follow then it wouldn’t work” (E3). Having separate top-level elements that cover the central point’s means that different policy and guidance could become interlinked through this model and that the various layers of the education system could work together such as the schools, the local authority, Estyn, regional consortia and national government. A single document that effectively joined of the dots of digital policies was what one digital lead thought would help as currently “in terms of looking for documentation to support my staff, it can be very hard” (SND). One Elite participant also commented that “unless you had a clear model that schools could follow then it wouldn’t work” (E3) and qualified that but explaining how this needs to be a single, national document to ensure more effective digital practice:

The evolution has to be in that policy level not something that can be done from schools alone but needs direction and steering on a national level. (E3)

Teachers often considered their use of digital tools in terms of supporting workload or using specific tools to develop pedagogy, rather than in terms of adhering to policy or making use of national guidance. The impetus here is more around the practicality and supportive use of digital tools rather than it being a necessary part of teaching in the 21st Century. This was even more apparent with the support staff who valued the administrative support that being digitalised gave them, the operational use being more important than the strategic enactment of good pedagogical teaching practice.

“Checking the agendas, keeping on top of what’s going on, so I’ll log into that first thing when I come in... I’ve got sims there. I’ve got emails. I would do risk assessments... pretty much all the children’s trackers throughout the school are put on, all the staff participate in putting on trackers all the time... we’ve even moved all

our consent forms for educational visits on Microsoft Forms. We don't send paper out. Right down to the dinners booked. Paying for that is all done digital now" (TAH)

Even across the two schools whilst both had a similar ethos toward digital tools, School H talked more about the shared vision and planned professional development, whereas School N had a more varied approach and was focusing more on bespoke support at the time of data collection.

Both schools shared a collective goal to further develop their use of digital tools as part of their teaching and to support the more administrative elements of their role. This seemed to me that despite being digitally leading, there was an understanding from the head, the digital lead, the teachers and the support staff at both schools that it is important to evolve and develop, to learn new applications and new ways of working. The leadership and vision of both schools was to harness the potential of digital tools to improve systems and to ensure that the professional learning was available for all staff.

A coherent policy narrative which could then be bought into by schools and adapted to suit context – much like the premise of Curriculum for Wales – would ensure that all schools are able to harness the potential of digital resources for their own workload but also support the overarching goal of Wales to produce digitally competent citizens as outlined in the six missions of the Digital Strategy for Wales (Welsh Government, 2021).

5.2.7 FUTURE STRATEGY

The final question to the Elite group was around the progression of digital policies in the next five years, and crucially how they would perceive success. For me, the insight gained from this question showed the differences between their focus and their day-to-day job role,

coming back again to the perceived lack of a strategic national policy or vision for digital education in Wales.

This need for equitable access to digital tools and opportunities came through in an Elite participant interview, so that young people leave school with cross platform confidence and competence, online safety skills and resilience and no longer needing to teach discrete digital skills, but young people being able to apply them as second nature:

I would like to see a pupil who can utilise digital skills in all areas of the curriculum or in real life not dependent on the device that they've got in front of them or whether they got a device at all. For instance, I want to see pupils who can identify their own errors in terms of a computation process, to be able to be critical and evaluate, to be able to be responsible and informed in terms of the way they source material to inform their opinions in their judgments ... we want to see those skills being really instilled in pupils to the level where they can apply them. (E4).

For a digital strategy for schools to be a national success then there needs to be a level playing field and building on links to other aspects of national policy areas such as data poverty and rural connectivity. It is also important to look at long term changes to the lived experiences of our young people over time and how digital has affected this, not seeing it as a singular digital initiative in school anymore but instead, as described by one Elite participant part of a bigger piece of work:

I think that's the mindset about kind of changing the cultures and behaviours around digital, there's multiple levels. There definitely needs to be a lot more research done, a kind of longitudinal tracking stuff of lived experience and practice in schools for both students and teachers and the kind of leadership. I think there's a big policy

kind of analysis piece to make sure this becomes mainstream as policy so it's not like a special digital initiative like this is just how we do education in Wales. (E2).

This viewpoint of a digital mindset becoming ubiquitous with the education system in Wales underlies a reliance on infrastructure but also a need for consistent leadership across all schools and at all levels of governance.

Drawing on the need for national policy clarity, my fourth Elite participant saw success at policy level as being:

Greater collaboration [between education policies and systems] to make sure the direction of travel aligns with other things. (E3)

Elite participants wanted to see a coherent and strategic vision from top level, through the middle tier organisations and inspectorate and into schools, where the actual enactment may look different across schools, much like the Curriculum for

Wales should, but all are ensuring that a set of baseline expectations are met.

Even now, when these Elite participants recognise the lack of clarity and coherence at the start of the digital journey, it is clear from their responses that there remains a disconnect when looking at the future. These Elite participants included government advisors, serving headteachers and school improvement partners and yet when asked the same question, the lenses and contexts they come from lead to disparity in their answers, rather than being parts of the same whole. This could lead to potentially more confusion in the future.

Moving on from the development of national policy and guidance, I turn my attention to the second section in this focus on the external factors which is that of infrastructure.

5.3 THEME 2 – INFRASTRUCTURE (EXTERNAL)

For most schools in Wales, infrastructure is managed in part by the local authority who provide the connectivity and web filtering to the school and the distribution of the annual EdTech funding. Another part of the infrastructure comes directly from national control via the Hwb team who manage the content (resources and programs) that sits on the Hwb platform and the EdTech Standards for Local Authorities. The two schools are part of a local authority who designate the spend of the EdTech fund directly to the schools via a list of items that schools are free to choose from up to a set amount of money but must demonstrate a development plan and include sustainability when making their choices.

Infrastructure at school level consists of both material and structural aspects within a school. It considers the wider coordination involved in developing a digital strategy in schools, and the direct day to day impact that had on staff. Petterson (2017), emphasised the importance of developing the organisation, which includes the whole scale adoption of digital tools where useful and additionally includes the knowledge of EdTech and infrastructure. For this, I have considered Infrastructure as its own section, primarily because most of the decisions around this are not made at school level but at local authority or national level. Whilst a school leader can promote digitally forward-thinking processes throughout the school and not just in the classrooms, some of the more important decisions come from the local authority who 'own' the network itself, with input from the national government Hwb team who manage the Hwb platform, develop the EdTech standards and liaise with the public service broadband provision across the country.

These elements are described by Tearle (2014), as practical / material factors and includes aspects such as resources, time, training and management. Time, Training and Management are considered as part of leadership in this research, as within schools, these are decisions made by school leaders. However, many of the more practical aspects of

resources used with learners on a day-to-day basis is part of a teacher's lesson planning, guided by the expectations and the vision of the school and influenced by the external support and limitations imposed on that school.

This theme links to both material and external context within Enactment Theory (Ball et al, 2011a). Material context refers to the tangible parts of a school, those that can easily be quantified such as buildings, budgets, staffing levels, Wi-Fi bandwidth and access points, devices that staff and learners can use. Ball et al (2011b) says that External Contexts are those external pressures and systems that schools depend on. This would include the local authority who control the network, the Hwb team within Welsh Government who manages the national platform, the Welsh Government Education Department who are responsible for policy and guidance, and organisations such as the Regional Consortia and Estyn who both support schools and hold them accountable.

5.3.1 THE COVID IMPACT

The decision to include Covid within this theme was made as the impact on education during Covid was substantial. Whilst the impact for learners has and is being well researched (i.e. Waters-Davies et al, 2022; Chapman et al, 2022; Mazrekaj and De Witte, 2024), the impact on the staff within a school has been under-researched given that the need for many staff to quickly upskill in order to begin remote teaching was marked as a turning point for digital education and the realm of EdTech. The demand for good, portable infrastructure for educators was unprecedented. The switch to emergency remote education, teachers being at home without the facilities of their classrooms, and learners being required to access work via online platforms shifted the digital culture in schools. This shift was described by one member of staff as follows:

I think with COVID it was a massive, almost like a tsunami of waves in IT because everything went online more or less, so many things, and of course they were working from home. (SHS)

The metaphor of a tsunami interested me particularly as it suggests this idea of chaos, an external force, and sheer power of something outside of an individual's control. It is also linked to inevitable destruction which in many ways Covid-19 was considered with the end of one system and the beginning of a 'new normal'. How much of that has been realised five years on is still undecided as most schools since have returned to a reality of school and classroom lessons for all.

Interestingly, all the Elite interviewees mentioned the impact of COVID, but this was less of a talking point in the schools. These Elite interviews were undertaken in late 2022, as schools were returning to on-site learning, but home working for others was still normal. Because of Covid-19 restrictions at the time, the school-based interviews were conducted a year later. Perhaps the fact that schools were now allowed to be back in the classroom undertaking business as usual, the immediate effect of the Covid-19 changes had diminished and was outside of the immediate consciousness of those working day in day out in a school environment.

Having a national platform that provided a resources and professional learning for teachers meant that Wales was in part geared up for this challenge.

When Wales went into lockdown, we had an all-Wales learning platform which was the envy of the world... every learner, every teacher provisioned in the way they were to have a safe platform that worked so well. (E1)

School improvement partners and national bodies have embraced the need for asynchronous resources and provision of online meetings have altered the way schools are able to look at professional learning now, and the expectation of on demand digital professional learning,

One positive thing to come out of Covid is the ability to develop asynchronous resources and people to engage with them. (E3)

However, there was also a concern that:

The impression some schools were under was that because we relied so much on digital technology, we covered everything we needed to cover in digital. (E4)

The raised profile of digital tools during Covid focused heavily on upskilling staff in asynchronous teaching methods, a re-emphasis on the importance of learners being able to work independently and resiliently without a teacher or support staff in the room with them. However, this focus also lent itself to the idea that learners were now digitally able, they could conduct themselves via online learning platforms, so that teachers didn't need to return to teaching wider digital skills when returning to school.

5.3.2 FINANCE

The financial implications of digital tools undoubtedly begin to influence the decisions the headteacher can make about the material contexts within the school. Falling budgets and rising costs (NAHT, 2024) mean that digital resources can easily be relegated in school

budget priorities. In one school, the headteacher specifically talked about the budgetary considerations of keeping up to date with digital equipment for staff and learners but qualified this by recognising that the investment needs to be worthwhile in terms of visible impact.

I will always prioritise it [digital equipment] ...if I wasn't seeing that impact and all these devices were hidden away and they didn't come out etc then perhaps I would have to rein it in a bit. (SHN)

Having this visible impact is important for schools as they undergo scrutiny from school improvement partners including the regulator, Estyn. Visible impact is one way to show how actions benefit the young people in the school, particularly with the changes to the national curriculum and no longer having prescriptive levels to measure children against.

5.4 EDTECH / DEVICES

Tearle (2004), considered the Organisation as one of her main categories for the introduction of ICT into schools. Likewise, for Pettersson (2017), the organisation is included as one of her three components for digitally competent schools being integral into the adoption (or not) of digital practices. Material and external contexts can make or break initiatives and vision. It is important to recognise that these two schools, whilst different in terms of socio-economic characteristics, are both lead digital schools with the same external contexts in so much as being in the same local authority and the same regional consortia. However, the material contexts, such as the provision of good connectivity across the school and up to date devices and software, are still an area that provides some barriers to leaders enacting their digital vision.

In the two schools I researched, the practitioners are very much on board with the digital mindset of the school, however there are still these wider considerations that even they, as digitally leading schools, are working hard to manage, if they are to sustain and evolve the digital vision they want in their own school as well as fulfil their part of the national mission. Considering discussion around EdTech that follows, it is also important to mention here that the participants were selected by the headteacher, so might have been more likely to be or might have wanted to appear on board and enthusiastic about the digital vision that was being enacted.

When discussing this within the Elite interviews, there is still an assumption that schools do not have the kit that they need to successfully implement an organisation-wide digital mindset in a cohesive way. For example, one stated:

We know there's lots of schools in Wales that don't have the kit or the infrastructure and they're under resourced. (E2)

The poor quality or inadequate infrastructure found by Timotheou (2023) does not seem to be as apparent in Wales. Financial investment has been provided with £190million+ spend to date from the Welsh Government on the Hwb platform and the EdTech Commercial Service which includes annual funding via local authorities for schools (Welsh Government, 2025). However, from the comments in these Elite interviews, maybe schools have not spent this funding in the best, or most visible way to develop their digital vision. If money has been allocated specifically for digital development and yet the policy advisors are still under the impression that schools are under resourced there is a clear disconnect between the spend and the visibility of what is being done with that spend.

Both schools however confirmed that for them, the number of devices and other EdTech kit in schools was not an issue – “They [the teachers] could have more things but actually don’t need more equipment.” (SHH) and likewise, “I mean we are in a good position, you know with the, all the devices that the children have one to one, the staff have one to one.” (SNH).

It should be noted that I am reliant on the integrity of my participants in informing that they have sufficient devices, rather than evidence from a stock audit or classroom observation of devices in use.

So, whilst the Elite interviews considered that schools across the country can be under resourced, these two digitally leading schools it appears have prioritised the creation of a vision for an organisation-wide digital mindset, including the purchasing of digital resources. This is predominately through the decisions made by their leadership of allocating funding specifically for this and valuing the impact that digital resources can have on staff. By making this a priority, they have overcome one of the barriers to effective digital use in schools, that of a lack of devices.

Responsibility for digital development and resourcing in terms of funding lies with leaders, and again, both schools have a similar trust given to them in spending funding and a similar understanding about buying the right equipment:

[the headteacher] realised you can't do your job without a useful piece of equipment...if we have a problem with IT... She's quite happy to try and sort it out, you know, you can go to her and ask can I have this or that and she looks.
(SH).

In both schools, the headteachers ensured that all staff including support staff have their own devices – either laptop, iPad or sometime both, that they could take home and could use during PPA times, when they are often out of their own classroom. Staff recognised the investment in their own devices enabled them to work from home, with one participant noting “I've got 5 mins and my children are in bed...it just saves time at school, so you definitely do more” (SNS) and another participant noting “there is no way that everything I need to get done for my job I can do between the hours of 7 and 5” (SHT). The appreciation of having these devices was clear from the responses of staff, along with the sense of responsibility that this gives them to be willing and able to use them effectively.

The benefits of being able to share planning and access documents from home as well as school has been according to one participant, “a massive help” (SHT). But, at the same time, it also blurs the lines between home and school - “I don't check in my off time, but I've had to make a conscious decision to do that.” (SNT) and likewise, “It's that feeling of... not a compulsion but to check it, you feel like you should be checking, answering as quickly as you possibly can.” (SHT)

This blurring of the lines and the notion of work-life balance is certainly an area that comes into play increasingly in a digitally enabled world. Schools may not offer flexi or hybrid working opportunities as standard, particularly for classroom-based staff, but there is more of an expectation that work can take place at home with a provided device.

A further concern for schools comes from the constant need to upgrade, update and repair items, despite the ear-marked funding from the EdTech service for new devices, the overall running costs are often prohibitive to keep things up to date, “There is not much acknowledgement as there should be that things are going to break; things are going to get out of date.” (SHS)

5.4.1 BARRIERS / PROBLEMS –INCLUDING CONNECTIVITY AND RELIABILITY

However, the main barrier to effective digital use in our digitally leading schools was the reliability of the wi-fi connection across the school despite the budget priority and ongoing support from the Hwb EdTech funding programme. As one teacher described it “the strength [of the wi-fi connection] sometimes is...abysmal. I think that would be a fair word” (SNT). Being in the same Local Authority, it was not surprising to discover that connectivity issues were attributed to external factors and there was a recognition that the school had worked hard to manage and develop the digital systems within these limitations, “She [headteacher] has upgraded to the widest band we could have.” (SHS).

Timotheou (2023) reported teachers’ preference for using familiar tools and technologies, and the ability to have professional learning tailored to these. However, despite both the two schools ensuring that this was the case through their community of practice approach to professional learning, and despite both school leaders placing the development of a digital

mindset high on the agenda, concerns of the reliability and stability of the network connection remained a barrier to effective, consistent integration.

This lack of secure, reliable connection is a barrier even in these two digitally leading schools and something that remains a factor in decision making about using digital technologies or not. The temperamental nature of the connectivity across both schools caused anxiety for staff and could potentially be a reason to avoid using digital at all, particularly in schools that are not as confident or without such a positive leadership and digital vision:

You turn it on, and it is not working. You have 30 children waiting...you know children. You cannot give them 5 minutes to wait there. It is not going to happen. It can very seriously get hard. (SHT)

This was echoed by the other school when explaining:

That scenario when you've got an observation, you've prepared everything online, you walk in and the internet has gone, and you think 'uh-oh!'... The feeling that when you walk in in the morning, you're not 100% confident [of the IT working]. (SNT)

This lack of reliability leads to frustration within the staff in this school who are now used to working digitally for a large amount of their daily administrative tasks as well as with the learners. This way of working has led to efficiencies in workload for teachers and support staff in these schools, with one participant noting "when we have those bits of admin to do and you there to do it and your internet drops, you're back at square one" (SNT).

Additionally, there is a need for staff to be able to conduct minor fixes themselves, becoming technicians of their own classes as well as planning a spare lesson for if things go wrong.

Your internet goes down, the device needs to be updated, you're troubleshooting day-to-day...if you were having a lesson observation, you'd have a back-up plan [if the wi-fi connection went down]. (SHT)

This often means creating twice as much work for those lessons. For a time-poor profession this unreliability is what impacts them the most. It is notable that despite this clear difficulty with the reliability of the Wi-Fi in the school, the schools have chosen to continue to invest in digital tools and services and are recognised as such.

The lack of a reliable connection for devices, despite it being a significant part of the school life and written into the national curriculum for learners is controlled primarily by the local authority, with one headteacher noting, "The infrastructure has been heavily invested in, and we are in a really strong position, but it's not always great.

(SNH)" whilst the other headteacher mentioned, "It has to be the responsibility of the LA or Welsh Government to make sure our internet is up to speed...I had to fight for that." (SHH)

Asking headteachers to be digital experts in terms of what bandwidth, network capacity and infrastructure is another aspect of the job that is rarely considered by those outside the profession, or part of leadership training, and yet is a very real part of the job today.

The influence held by these outsiders, when considered as one of the policy actor types is important. This would include the local authority, especially the school's IT support team, and the national Hwb team within Welsh Government, as well as regional school improvement partners to an extent.

The headteachers recognise the benefits of the role they play but also acknowledge frustrations that comes from being reliant on the systems set up and managed by these outsiders who do not always appear to appreciate the complexity of school life.

5.5 INTERNAL FACTORS

Next, I will discuss the internal, school level factors of leadership and professional learning which are under the direct day to day control of school headteachers.

These internal factors stem from those of Ball et al (2011a), focusing on the professional culture and situated context. Additionally, aspects of the material contexts can be seen in terms of leadership decision making. However, this has mostly been covered in the previous chapter around the infrastructure theme. These internal factors contrast with the previous chapter which focused on external factors, those outside the direct control of the school but affecting the day-to-day decision making around digital use.

It would be possible to consider Leadership and Professional learning as two discrete themes. However, within a school the responsibility for day-to-day management and development sits with the headteacher and the leadership team so I merged these two themes together as they are both school led aspects of the research findings.

I will first discuss a brief comparison of the two schools, followed by a development of this in terms of the Policy Actors of Ball et al (2011a). Then I will look more specifically at the themes of Leadership and Professional Learning

5.6 THEME 3 – LEADERSHIP (INTERNAL)

Leadership within the education world is itself multifaceted, in contrast to private sector organisations, with distributed leadership being common (Harris, 2013), to support the layers of responsibility from government regulation, local authority financial control and school-based leadership. At school level, headteachers effectively lead the school in its day-to-day business in conjunction with the governors who have responsibility for the school (but are unpaid volunteers). Other leaders at school level include both senior and middle leaders who have delegated responsibility for subjects or school development areas and often hold specialist knowledge. Outside of the school itself, leaders from the local authority, inspectorate, and government determine, direct and support the overall curriculum and school organisation requirements. However, these are not considered in this chapter as they are aligned more to the previous chapter. In this chapter and throughout my case studies, the term leaders referred to the headteachers and the digital leads in the schools.

Across both the Elite interviews and the school-based case studies, leadership and vision came across strongly and there was a consistent message around the importance of vision-driving decisions around the digital journey the schools were taking. In terms of school level data, the focus was generally more around the operational and day to day vision required of the headteacher and staff to enact the policies, whereas the Elite data set considered this more as part of the regional or national strategy in terms of setting an overarching vision for Wales.

From the school level data, there were several commonalities in terms of the most words used by staff in the same role, particularly when considering the commonalities across the headteacher and the digital leader responses.

- Headteachers spoke most about the notions of vision and delegation. They were also the participants who discussed the use of the Hwb platform the most.

- Digital Leaders also talked about the idea of a vision but focused this more around their knowledge of infrastructure and the logistics of planning and delivering staff training.
- The teachers and support staff focused on the how and the what of digital, meaning the practical examples and dependence on digital tools for their role and the support of leadership.

These delineations aren't unexpected. It is the role of the headteacher to lead the vision and to delegate to the right people, and the digital leader to carry out that vision as they have the right skills to do this. One headteacher described this as:

We invest in our teachers, we ensure that our teachers have the ability... the appropriate training, we exploit their strengths and by exploiting their strengths, we're able to put them into roles such as digital lead. (SNH)

It is the role of the headteacher to create the culture and to empower staff, (Timotheou, 2023) and this is apparent in both schools. There is a recurring idea that the high-level strategy and vision is filtered down through the staff, with headteachers talking more about their role in creating and then delegating the vision to the next layer of leadership. The digital leads both talked about their own knowledge and the importance of transferring that knowledge to support the vision. This shows the notion of distributed leadership (Harris, 2013).

This commonality across both groups suggests that the policy and guidance at a national level are pitched at the role of headteacher as a standard, written for that audience, and then they are supposed to narrate and translate that policy down to staff, who then might not necessarily need to consider this high-level national writing themselves. In fact, the terms that were common among the interviews with teachers were around the practical day to day use of tools

(whilst acknowledging the supportive leadership to do this), and in both schools the support staff recognised the value of digital as administrative or workload support mechanisms.

Whilst independently both groups of teachers and support staff did mention separate items like the school strategy, use of Hwb and training needs, there was not a commonality between the two schools in terms of the importance of this, indicating the individual differences in the way that the policy is enacted in each school as well as possibly the successful narration of the policy by the leadership.

5.6.1 POLICY ACTORS

Enactment Theory (Ball et al, 2011a), describes how different actors perform different roles within the adoption of policy in schools. It is clear to see how some of the different policy actors cited in Ball et al's (2011a) Enactment theory exists within the schools in this study, but not as explicitly as he described, with many staff holding several of the roles identified in his research. During this section I will suggest how those in the schools met or challenged the roles of some of the key policy actors described by Ball.

The four main policy actors identified in this research within the schools, using Ball et al's (2011a), work for reference are the narrator, the entrepreneur, the enthusiasts and the translators. These can be described as:

- Narrators – telling the story of the policy area by selecting and interpreting it
- Entrepreneurs – advocating for the policy through creativity and integration
- Enthusiasts – investing in the policy, showing creativity and positivity
- Translators – producing the work and resources around the policy area.

Additionally, a further Policy Actor group which Ball et al (2011a), identified was also identified in this research as being important, but external to the school. These are the Outsiders,

partners and monitors of the policy enactment, who are not school based but play a significant role within the enactment of digital policy for schools. Their role has been discussed to some extent in the previous chapter. This chapter will explore the relationship between the Outsiders and other policy actors within the schools.

It is likely that within each school there are staff who would be categorised as Receivers (Ball et al, 2011a), those who are new or who just 'do' the policy by complying rather than because they are bought into the narrative and benefits of it. However, in the interviews that I conducted I did not experience this type of policy actor, potentially due to the participants being chosen by the headteachers who might have been proud to be participating in research about being a digitally leading school or might have answered in a way that they considered to be acceptable to the headteacher.

Furthermore, it was rare in both schools to find Critics (Ball et al, 2011a), of the school level strategy, but there were some Critics in terms of the national approach being inequitable across schools and Critics of the infrastructure being unable to support the goals of the school digital strategy fully. Again, whilst participants were made aware of the anonymity of the research, they were selected and held up as representatives of the school, so this might mean that it would be less likely to find open Critics of the school level strategy.

The different policy actors will now be explored in detail.

Narrators

Ball et al (2011a, p.52) describes the narrative that the headteachers tell as “sophisticated stories...both retrospective and prospective and work to hold things together and move things on”. The narrative in both schools comes from the headteacher as it is their vision that they

want realised, and they are accountable for it to the Governing Body as well as for the outcomes of their pupils.

In School N, the headteacher relies heavily on the digital lead to filter and focus on the main areas of attention for her school and narrates the digital vision to her staff with the support and expert knowledge given to her by her chosen digital lead. There is a confidence coming from this headteacher (school N) that she has the best staff in leadership posts to support her in narrating the vision, and that she supports him to do this role. For example, she says:

He [the digital lead] has the relevant training and he cascades that information to staff ...He [the digital lead] would be my first port of call [for information or advice]. (SHN)

In turn, her digital lead recognises that his role is to offer advice and support, to consider the impact of the decisions being made, to “build the culture by promoting innovation” (SND). This symbiotic relationship between the headteacher’s delegation and the digital lead’s knowledge shows both the headteachers’ confidence in the digital lead’s knowledge and the digital lead’s confidence in the headteacher’s leadership.

In School H, it is acknowledged here that as headteacher, she is the leader, but there is also a recognition that doesn’t always make her at the top and others have a clear voice in decision making and have experiences worth exploring, but they act on her vision. She said

Is there a hierarchy in this school? They think I’m the boss, so they should, but I’m not proud. My role is giving them [the staff] the confidence to have a go. If I want something done, I know he [the digital lead] will do it. (SHH)

In school H, there is less of a reliance on the digital lead for much of the strategic decision making and professional learning of staff. This is partly because he is not a member of the senior team and has only just qualified as a teacher. He became the digital lead whilst as a teaching assistant in the school, so his role has developed as part of the support staff rather than as part of the teaching staff. However, his knowledge, and what he brings to the role is clear in the fact that, like in School N, the headteacher in School H knows his strengths and has appointed him to this leadership role:

If I want something done in school, I'll say to it him, and you know he'll do it... We couldn't do what we've done without that" (SHH).

However, the headteacher in in School H still takes the lead and the steer for the vision, with the digital lead supporting, whereas in School N, the digital lead has his own vision for digital in the school and the headteacher adopts that into her overall vision,

"Obviously I would be going to [digital lead] to direct me in the right direction" (SNH) This is not to say that School H's digital leader cannot steer the direction of travel within digital enactment. His role as a narrator is clear as is his role in leading professional learning, which now as a teacher he is starting to develop:

It's making sure I stay on top of that, assisting others or helping to train others on how it works and what the benefits are" (SHD).

My perception of his lack of confidence in taking a stronger role in leading the vision may have come from his inexperience as a teacher and a little imposter syndrome when being asked to train more experienced teaching staff, but he, like the digital lead in School N, was given the full support of his headteacher to do just that.

The narrative of the headteachers' digital vision in both schools is bought into by all the staff who I spoke to. This was exemplified using phrases like "being fortunate",

(SN) and “being encouraged” (SH) to make use of digital tools and try things out. There was a recognition in both schools that having a digital mindset was “very much sort of school expectations” (SNS), but with a sense of purpose and positivity about it rather than a compulsion which they may not value. Staff at School H were keen to explain that they were encouraged to undertake digital professional learning, and opportunities such as those through Welsh Government courses were encouraged. “I think we have opportunities to develop professionally, taking advantage of the courses Welsh Government do.” (SHS)

This positive language using words such as opportunities continues to suggest that staff are bought into the narrative and the vision, and that this is led by the headteacher.

One participant noted “She [the headteacher] creates the opportunities.” (SNS)

There is also a feeling of community in both schools and a culture of learning, with one participant noting that “sometimes a buddy system works... walk them through it [the digital problem] and build confidence” (SNT) and using the learners as the experts “one class will learn it [the tool being taught], get their experts and they will teach it [the tool being taught]” (SHT), which again shows that in both schools there is a recognition of the value and purpose to the digital vision. This becomes cyclical in that the narrative now reflects this positive attitude which in turn promotes more positivity.

It is a building of a culture, not just a directive from the top.

Entrepreneurs

There appears to be a strong argument particularly in School N that the digital leader is not only a policy narrator but also the main policy entrepreneur, with a true passion for digital coming through both in his own interview but also from the other interviews with teachers:

Ultimately because he [the digital lead] has such a breadth of knowledge in this digital area, I think you would be foolish not to access that from that fountain of knowledge because...well... he loves it as well don't he! (SNT)

A Policy Entrepreneur, according to Ball et al (2011a), is uncommon and exceptional within schools. Ball et al (2011a, p.53), describes them as those who “originate or champion and represent particular policies or principles of integration”.

The digital lead in school N, fits this description perfectly being a charismatic force for change and he has actively brought together other teachers to become digital leads alongside him. This enthusiasm has rubbed off on many other members of staff, with one teaching assistant telling me: “I started a Minecraft Club, and knew nothing about Minecraft, did not have a clue what I was doing” (SNS).

School N clearly benefits from having an entrepreneur policy actor in their midst to drive the digital mindset across the staff and to support the headteacher, which helps to identify it as a digitally leading school.

However, this role of Entrepreneur was only apparent in School N, as in School H the digital lead does not convey the same enthusiasm and passion in such a charismatic way. He sees his role as “making sure everyone is digitally literate and digitally competent in some areas”. (SHD). He focuses on the practical aspects of digital within the school rather than being creative and groundbreaking himself. This may be due to him being a newly qualified teacher and therefore finding his feet in that role, so he seemed to be less confident in demonstrating policy innovation in the classroom at present. However, his importance for digital support was apparent in the interviews in

School H.

Whilst the Entrepreneur role is therefore of benefit to an aspect of policy, it appears to not be essential in the development of a leading school. The more calm, logical and quiet processes of the digital lead in School H, adhering more closely to the vision of the headteacher rather than co-creating it as in School N, has also paid dividends for the school in terms of being digitally leading.

Enactment of a digital policy in School N has trickled down from the headteacher and her digital lead narrating the vision and is picked up by other staff who then act as enthusiasts. Whilst having an entrepreneur on your staff lends a charisma and energy to your digital vision, it is not, at least from the findings of this study, one element to policy enactment and becoming digitally leading.

Enthusiasts and Translators

Another of the roles Ball et al (2011a), describes and that appeared in both schools was that of the Enthusiast, actively advocating the benefits of digital strategies and practices in their school. According to Ball et al (2011a), Enthusiasts are also often the Translators, those who actively distribute and explain the policy between the groups within the school. They are the staff who organize and run the events to promote the policy area so that others can understand and become as enthusiastic about the policy. Therefore, they are grouped together in Ball et al's (2011a), literature and here. It is important to again recognize that these schools are digitally leading within the local authority and that those teachers and support staff were selected by the leadership to meet with me. Although I was told by both headteachers that I would get similar answers from all staff, it was clear and understandable that those chosen were there to show off the school's digital agenda to the best effect, and I was unable to question other staff during the limits of my research time in each school.

The positive vibe that comes across throughout the school community when discussing their digital mindset, showed the wealth of enthusiasts and translators there are across all the staff. These enthusiasts are influential in spreading the excitement about digital tools and opportunities across the school and for translating the policies and systems into practical, everyday classroom examples. Enacting the policies within the classroom environment on a daily basis can sometimes become a chore for many aspects of school life, however the enthusiasm across the staff I interviewed was apparent and this seems to permeate through the staff, with one participant noting that “I’ve had staff come to me saying ‘look at the stuff I’ve done on x’” (SND). Also, there was a recognition that the policy had been implemented sensitively to begin with in both schools, with one participant saying, “in order for something to be used, I think people need to see a purpose behind it” (SNH). The enthusiasts and policy translators get behind it with a positive attitude, which came across in the tone of the conversations with teachers. Therefore, with so many enthusiasts and translators, the policies will be enacted effectively.

In school H, there are many staff who undertake the role of translators and enthusiasts, almost to the point of total adoption and understanding of the digital mindset in the school. New members of staff are mentored and trained in the digital ways of working, with one participant noting “I’ve had support from another teacher to show me where everything is” (SHT). This outlined to me that there is a key role to be played in inducting new staff to the digital way of being in the school, and that most established staff therefore play their part in sharing the digital culture with these new staff.

Participants noted that staff support each other and develop ways to enact digital in their day to day working lives. For example, one member of support staff in School H explained “there

is always people around and I can confidently say that I can always go to them and ask if I'm stuck" (SHS). This culture of support is part of the fabric of School H in an understated way. Although less excitement and enthusiasm came across in the interviews in School H compared to School N, excitement and enthusiasm were still clearly visible throughout the school and the conversations. This is potentially due to the infectious enthusiasm of the digital lead in school N, whose passion for digital tools is open and obvious to the staff that were interviewed.

When asked to give examples of how digital resources are used in School N, the answer was "cause everything is linked to digital, so it's just the normal part of our life now, normal part of school life. It makes everything easier" (SNH) and in school H, the headteacher commented that: "It's vital almost, when things go wrong with tech issues, it's quite hard to go back to analogue" (SHS) demonstrating that this is what the school does, how it functions. However, these translators also recognise how they support each other to improve and develop, sharing their knowledge and skills freely, for example in School H a teacher commented - "If I don't know something maybe Mr (X) will" (SHT)

The digital leaders particularly could be seen as Enthusiasts and Translators, holding the policy knowledge as well as the practical and technical knowledge to be able to contextualize the documents for both leadership and for staff on a day-to-day basis. Both the senior leader and the digital lead in both schools could also be seen as the policy Narrator, but the role of Translator was observed as being more important in the context of digital as it required additional technical knowledge to support implementation.

Outsiders

With respect to the roles of outsider (Ball et al, 2011a) in terms of the enactment of digital policy it could be said that the outsiders are the local authority, school improvement partners and national Hwb team, who monitor and hold up examples of good practice which then

other schools aspire to. Outsiders influence decision making, affect budget and choices particularly when linked to access via the infrastructure or the purchase of devices but Outsiders also need to perform a reciprocal role and listen to the needs of the schools to ensure the continuing development of the use of digital tools.

In both schools, the headteacher takes her responsibility for narrating the policy and has delegated responsibility for the enactment of this policy to the two digital leaders, although in School N, the digital lead has more of a say in the construction of the digital vision as well as enacting the vision for the headteacher.

Furthermore, both headteachers recognize that the local authority should take responsibility for some aspects of the digital development of the school, as they will have a better level of expertise around some areas, for example in this excerpt, one headteacher describes the need for more support from the Outsiders:

I know we've got the new standards (EdTech Standards) as well which are talking about the actual physical network and how will that work and to be quite honest there's a job there and I haven't a clue. We were sent it, and we did have a very brief training session on it, but I think that that must be responsibility of the LA or Welsh Government... We use a lot of the systems; we always use the systems that the LA recommend. (SHH)

The headteacher of School H follows the recommendations set out by the local authority and the Welsh Government and wants to ensure her school is on top of this but also requires their support in the areas that she is not experienced in leading, such as the technical aspects of a digital policy. The influential nature of the local authority for these two schools in terms of what they use and how they can access a network is clear from this, Therefore, the

role of the outsider is important in this respect as they (both the LA and the Hwb Team/Welsh Government) can effectively permit or prohibit schools from developing digitally in the way they want to, particularly in schools without digitally experienced or enthusiastic digital leads and headteachers.

Moving on from the policy actors specifically, I will now consider the broader subtheme of Leadership which is one of the two main elements of my Internal Factors theme, along with Professional Learning.

5.6.2 SCHOOL BASED LEADERSHIP

Within Enactment Theory, Ball et al (2011c), considers leadership to be a substantial part of the professional culture of a school. The leaders of a school are the policy actors who need to reframe the national policies and guidance into usable day to day working practices for their staff. The culture that is developed is not a concrete or tangible part of the school and refers to ethos and values and is strongly influenced by the headteacher as well as the traditions associated with being part of that school (Ball et al , 2011c). Digital transformation is less bounded by a long history or tradition, and in both of the case schools it has been shaped by the current headteacher and fitted into the wider ethos of the school.

Providing a professional learning culture must have the support of the school management, (Krabonja, 2024) and fostering a community of practice approach to enable this culture is down to the direction set by the leadership of the schools.

Both Pettersson (2017) and Tearle (2004) consider Leadership to be an essential element in their own models of digitally competent schools, to steer and guide the development of the organisation toward adopting more digital practices. The reframing of policies is considered by Ball et al (2011b) to be Narrative Recontextualization, enabling it to fit the school context.

Both headteachers describe their understanding of their school context in terms of the needs of their learners, their staff and their communities to best develop their digital vision. “We are clear on the digital access every teacher and learner needs” (SHH) said one of the headteachers, with the other explaining that as well as having this understanding of needs, it must be formalised which is part of the role of the headteacher, “if it’s not on the school development plan, it’s not a priority” (SNH). This accountability for progress (Condie and Munro, 2007) by its inclusion in the school development plan appears to be vital when looking for a sustained and embedded digital mindset. According to one of the Elite participants, “leadership of digital has to come from the top, else it just stifles progress” (E1) and in both of the schools it was clear that the headteacher was leading the charge and one digital leader provided this analogy:

She’s [the headteacher] the champagne bottle pouring into a tower of glasses, she’s got such a strong vision of what she wants from a school that flows down into her SLT [senior leadership team], to her middle leadership team, her staff and TA’s [teaching assistants]. (SND)

This analogy of a champagne bottle pouring suggests more than good communication skills. The phrase conjures up positive thoughts of happiness, sparkle and positivity which is how her staff see her as a person and as a leader.

All the interviewees in School N talked warmly about the headteacher, expressed an understanding of how she leads and why they do what they do, and how they all buy into that vision by becoming part of the school. Although appearing genuine, and despite my explanation of anonymity, it is important to note that these staff may have been keen to appear positive about their headteacher to avoid any possibility of their indifference or criticism being seen by the headteacher. Furthermore, as the staff were aware I was looking

at digitally leading schools, they may have perpetuated this by giving the socially accepted answers and demonstrate a false sense of teamwork and support.

In both schools, the digital leader was identified by the headteacher and has developed in their job role because of their interest and passion for digital education. The need for passionate individuals is clear, for the lead to be informed and excited by what digital tools can do. To do this takes work. The quote “making sure I stay on top of it” (SHD) indicates the understanding that one digital lead in this study had about the ever-changing nature of digital tools, whilst “you need to be someone who is constantly looking” (SND) stated the other digital lead in the study, demonstrating how this information must be sought out and solutions found. Being supported by the headteacher is what enables the vision to come to life. The digital lead at School N recognised the importance of having a strong team surrounding them, and how integral the team has been in developing him to lead the vision - “I don’t think for a second I would be the leader I am without my leadership team” (SND)

The digital lead in School H firmly sees his role as sharing good practice and showing the culture of community learning in the school:

We are encouraged to explore it [new things], see the good and the negatives and then show everybody or explain it to people...if I just kept my ideas to myself, I’d be fine, but it wouldn’t filter to everybody else. (SHD)

There is an understanding that the support staff are important in the school and are given the same developmental opportunities in order to feel confident in their abilities or with asking for support, with one support staff noting “I just could not get it, so Mr X [a member of teaching staff] helped me and now, I’m a bit of a whizz at it!” (SHS).

The recognition of their own experiences prior to becoming a headteacher was important to both headteachers. In school N, she had worked as a support staff before becoming a teacher and then a headteacher and acknowledges that this impacted her leadership style and her ability to express her vision with clarity to all. The headteacher in School H followed a more traditional path but this is her third school as a headteacher, and she therefore drew on the experiences gained in her three different schools when enacting policy and developing her leadership style. One Elite participant considered the importance of the school leader to be critical when it comes to enacting digital policy “It all comes back to that vision, and that strategic plan, ownership by a member of the SLT” (E1).

However, the Elite interviewees noted that this vision and strong leadership in terms of digital development of schools was not always apparent across Wales, and that in one Elite participant’s opinion, digital is more about the financial cost than a potential solution for administration, workload or classroom practice “It’s not part of their leadership mindset...it’s a cost centre.” (E2)

The notion of digital being more of a cost centre, or a line on a budget spreadsheet, than a mindset and culture, is understandable with it requiring physical devices, network structures and software to be purchased to become a reality, as according to another Elite participant “If you take staffing out, it’s the second most expensive thing on your budget but it doesn’t come under one heading called IT.” (E3)

With this financial commitment required to develop a vision and enact it across a school, the headteacher must be willing to demonstrate value for money, particularly in times when budgets are a real concern and other national or local priorities exist. Both the headteachers had to get their governing body, staff and parents on board to facilitate their vision. If schools ensure that there is a strategic vision for creating a digital mindset, led by senior

leaders and focused on “not thinking in terms of the tech they need, but in terms of what they want to do” (E3), then this might support the cost benefit analysis of investing in technology as it becomes a tool for learning, a tool for staff workload rather than an expensive add on.

The consensus across these Elite interviewees appears to be that in their experience, the development of digital strategies often does not form part of a senior leadership role or at least is not given the time and expertise that it deserves as a substantial investment both financially and as part of teaching and learning.

5.7 FROM VISION TO CULTURE

Leadership and Vision are one and the same. Good leadership draws on all staff in an organisation to design and develop a vision, and creating an organisation-wide digital mindset should be no different. Pettersson (2014), recognises this as setting the direction; however, it could be argued that developing people also falls under this leadership banner as well. Not only does school leadership need professional learning to enact digital well in their schools. They also need to prioritise digital use amongst their own staff. The creation of a vision came through in the findings strongly from both headteachers and from the two Elite participants who were also serving headteachers.

5.7.1 THE ELITE PERSPECTIVE

The Elite participants spoke more about the development of the vision than considering the reality of enacting that vision, particularly the two who were not also serving headteachers. A utopian vision of schools having to accept a more digital future came through in one Elite interview:

If we don't crack the kind of prominence in the curriculum from a policy perspective. We don't crack the fact that it is about pedagogy and practice and thinking digitally... digital isn't a nice to have... it's a professional competence... the idea of teachers saying oh I don't really like using technology that's unacceptable that's not... that is not a mindset you can have... it is a core facet of the job... this is the mindset shift. This is how learning and teaching and assessment works in this day. (E2)

Another Elite participant, also a serving headteacher had a slightly softer approach to building a digital vision, but still recognising the need for it to be a non-negotiable in the school:

I think it's just being very clear from the very beginning that you know what the vision is. You know what is it that every teacher is going to have in their hand, what access to digital is every learner going have, and what does every classroom need to have. What professional learning the teachers must have, what's the Technical Support they need to have, and what does learning and teaching look like. Where does digital really need to be an important tool within that and what's our strategy for making sure that we can continue to innovate, because you can't stand still. (E1)

The vision then should be steered by the headteacher and senior team for it to be successful, with one Elite participant noting “it will be highly dependent on the level of priority that digital is given by the leader in the school” (E3). The vision also must have a clear direction set by the headteacher that is respected by all and can be supported by all. One Elite participant recognised the importance of this and noted that “for a long time that [digital vision] wasn’t owned by school leadership”. (E3). Another Elite participant added to this by emphasising the importance of having a vision because a “vision drives the whole strategy, without it, digital just becomes tech” (E4).

5.7.2 THE SCHOOL BASED REALITY

However, with the reality of the day-to-day processes of being in school, barriers and challenges are still part of the school environment. No matter how positive the schools were about using digital tools in a progressive and impactful way, this full-scale culture shift can’t happen automatically. The importance of school leaders having a vision for their school context to start their own digital journey was abundantly clear, and that vision then must be embraced by the school described by this quote from School N’s digital leader:

We sat down as a staff and said, what do we want for our pupils? And for our community, and our staff? So, we started to look at what's important to us... So, we started to look down at the vision that focused on a very broad digital with a bigger focus on ensuring that the digital citizenship and infrastructure was strong. (SND).

School N appear to have made this digital mindset part of their whole school culture. As well as it being a time saver for the administration teams, digital technology is fundamentally part of staff expectations across the school:

Well, we use it [digital tools] every day really from the staff diary on our iPad we also do intervention, and we use Google forms to record it all on there, google drive for photographs, everyday (SNS).

The importance of creating a culture of digital being the way things are done across the school community is clear in School N. There was a real understanding that digital skills were essential for learners and beneficial for staff, so the culture became synonymous with the school, with this quote from a teacher in School N encapsulating this point - "this is that we do at [name of school]" (SNT).

In school H, it appears that a learning culture is thriving that includes digital throughout it. In fact, several times staff commented that digital is "just how we do it (SHT)". There is no distinction about it being an add-on or discrete part of the job, it is part of the learning culture of the school. The headteacher confidently describes the digital mindset as being not just about teaching the children but also explaining to them that "we are learning all our lives, we don't stop learning. I ask someone. I Google it.

I read a book. That's how we learn. All of us do that" (SHH).

A top-down leadership is however supported by wider leadership across the school and is bought into by the teachers and support staff, and they recognise the power and style of her leadership:

I think that she [the headteacher] has led some of it [the digital vision], she creates the opportunities, she has a sort of a vision of you know of where she wants things to go, but I think that, you know, we've also done it as team. (SHT)

However, delegated responsibility is also important in this school and staff recognised that “she [the headteacher] doesn't want one person to hold all the knowledge” (SHT), so the idea of a learning organisation, a community of practice (Lave and Wenger 1991), is embedded into the school from the top down.

In School N, this notion of a positive culture of learning together also came through, along with a shared responsibility for learning. One teacher shared this with me:

Even TAs would give something a go and if they don't know they would come and say to us [class teachers] can you help me with this, show me this, and usually the teachers are like we're gonna get together, we are gonna have a go at it...I think we all just thrive in finding something out. I think everyone has at least one or two valued inputs and in terms of digital at some point. Often, it's not about being more knowledgeable but it's that if you have faced the problem then somebody else faced that problem as well. (SNT)

The vision sets the tone for the school and relies on an understanding and an acceptance of it by staff.

The schools selected were seen as digitally leading in that local authority and region, and the passion and enthusiasm for digital being part of what they did came through. There was an acknowledgement of needing others to support and augment that vision. Those with more specific digital knowledge and those excited by the potential of digital tools were the actors that these leaders drew to them to successfully enact the policy areas.

It is important to recognise that the enactment of the vision relies on the implementation of that vision by all staff if it is to be successful. This requires professional learning to be part and parcel of the school's commitment, which was another theme emerging from the data.

5.8 THEME 4 - PROFESSIONAL LEARNING

Developing people is an integral concept for Pettersson (2010), and within my research I have located this theme within the Internal Factors section. In school systems in Wales, the development of staff comes in the main from the leadership of the school. Decisions are made by line managers and senior leaders as to the school priorities that can be supported with professional development, as these usually come with budget implications. However, as identified within the schools, it is apparent that informal learning is sought out by staff themselves and often taking place via peer-to-peer support or free online learning tools such as YouTube. For this reason, I have decided to place Professional Learning as a theme of its own rather than a section within Leadership.

Time for training, motivation and comfort levels of staff when using digital tools (Timotheou, 2023) are all factors that are required for the effective and sustained use of digital tools within a school and these factors are applied across both schools with the proviso that in Wales, school staff have a professional responsibility for their own professional learning. It is a requirement of the job and made clear in the professional standards. However, how much professional learning and what constitutes it remains a matter primarily for schools and staff to address themselves. In Pettersson's (2017) work, *Digitally Competent Learning Organisations*, professional learning was a key component of her model and in Wales, the *Digital Professional Learning Journey* (2019) aimed to support staff by ensuring that schools considered four aspects – leadership, infrastructure, curriculum and professional learning – and how they are all required when building a school wide digital strategy.

The need for professional learning was one of the original recommendations in the Task and Finish Report and in the ICT Steering Group (2004) report. My participants echoed this sentiment: "if you're not going to invest time in professional learning then it's not going to be

OK” (E1) said one participant, qualified by another who said, “I don’t think I’ve seen a lot of quality professional learning [on digital in schools?] ...it can be very narrow” (E2).

5.8.1 THE ELITE PERSPECTIVE

With a changing digital landscape, this aspect of professional learning is ongoing, and one Elite participant used the phrase “sustained professional development” (E1) and another Elite participant suggested that there will be a need to constantly upskill in this area because “what good looked like [in terms of digital use] in 2022 doesn’t necessarily mean that it will be the same good in 2025 because tech will have moved on” (E3). This constant shift is arguably unlike other areas such as literacy, numeracy or even leadership training where although there are different schools of thought and programmes available, the key concepts have remained constant for a very long time.

For one of the Elite participants, the regional consortia leader, their entire role is based around professional learning for digital pedagogy and digital leadership.

We have both that role to help implement policy within the schools but then also to advise schools based on specific questions around digital policy ...I offer bespoke support, tailored to their [the schools’] individual circumstances...we move from how to use the technology, to how to utilise it to best support your teaching and learning.
(E4)

There is a need to have a basic digital competence as a teacher and the need to develop skills in using digital tools within your lessons. Just the ability to use an EdTech tool is no longer the focus of professional learning but thinking about it within the context of teaching and learning and within your own school, classes and subjects is also important. This was

summarised by an Elite participant, and this also draws us back to the role of leadership - “You’ve got to start with learning and teaching... It [the use of digital tools] must be part of the learning and teaching policy” (E1).

This continual cycle of a need to upskill in newer digital technologies or even awareness of up-to-date online safety practices and concerns means that professional learning in this space must be ongoing and not a one-off occurrence:

Good digital learning is about having a strategy in place, staff prepared well, mapped across the curriculum. (E4)

With a new curriculum in Wales and an ever-changing digital landscape, this places a high demand on a workforce and a leadership that already has many top priorities.

The DPLJ (2021) makes it clear that its purpose is to support schools to develop professional learning around the use of digital tools, so that schools can become more digitally competent. One Elite participant described this as being “... the architecture for digital growth” (E3). Although the DPLJ was not explicitly mentioned by many of the school-based participants, the importance of professional learning was clear from both headteachers, for example the headteacher in School H noted “I lead by giving staff training, we spend a lot of time training and sharing our expertise.” (SHH)

This was qualified by an Elite participant who he said, “If you are not gonna invest time in professional learning then it's [digital development] not gonna be OK.” (E3) The development of effective leaders in order that they can develop an effective school level digital policy is again of interest. The need for professional learning at headteacher level was not considered by either of my two headteachers. They were self-taught, reading up themselves and relying

on the expertise of their staff to inform them. Without specific emphasis on leading digital in the professional standards for headteachers, it is apparent that the digital agenda will continue to rely on interest to enact the policy documents rather than expectation and supported training opportunities for our leadership.

5.8.2 PLANNED PROFESSIONAL LEARNING

The role of the teacher in establishing the aims and goals of the professional learning space, within a practicum (Vaataja, 2023) or a community of practice is important to its ultimate success. Within both schools, there was a consensus that continuous, context-specific professional development is required, and that all staff are involved in the formulation of that professional learning. These digitally leading schools rely on both immediate support and strategically planned peer-based learning opportunities, aligning with good practice guidance found on Hwb. The sharing of ideas between staff and the recognition that digital development cannot rely on one champion but must be distributed throughout the staff is apparent in both schools, embedding digital into all planned for professional learning sessions. A shared creation of the community of practice approach, which is evolving and co-constructed by staff, for staff was evident during the data collection of this research.

In the two schools, it appears that there is a strong focus on professional learning around digital for all staff, and opportunities for all have been carefully curated and fit within existing Professional Learning Days, meetings and additional sessions. Both schools emphasised the need for whole scale professional learning far more than most of the Elite participants did, indicating that whilst the vision may be in place in these schools there is a reality check around the need to upskill staff before that vision can be fully enacted. The role of the digital leader here is vital, and one described it as:

Trying to train the staff... making sure that the knowledge is spread throughout the children as well...we've been given time to explore and be experts. (SHD)

In School N, a similar role was described but more focused on teacher outcome rather than learner outcomes:

The Digital leader does regular training within staff meetings. He does train with different members of staff – it could be the whole staff... it could be the support staff. If they [the staff] can't do it, he would give them the ability to, through training" (SNT).

New staff were given induction training into the systems that were used, and regular audits of staff knowledge and needs were conducted to inform the in-house training sessions which were built into most professional learning days in school. Bulletins from the digital leaders were also a feature of both schools, at least termly, with reminders of key aspects, some tips and updates to tools so that all staff were able to keep up to date in an informal manner. Staff were given opportunities to try out programmes or applications and provide feedback to the digital lead or other staff during training sessions and professional learning for digital written into the school calendar for all staff. Any key information from local authorities or Welsh

Government Hwb team were disseminated either at these professional learning times or via the digital leaders' bulletins and all staff were included, not just the teachers. The relevance of the training for each member of staff related to their role is also considered rather than a one size fits all model.

The support staff in both schools talked positively about this "If it's not relevant to us, then obviously we won't be in there but [we're in] most of the digital training sessions." (SNS)

Likewise in the other school, a member of support staff said, “We’ve been encouraged to do professional learning and pick things up.” (SHS) These quotes demonstrate that support staff are considered very much part of the team in the school and take part in the professional learning offer.

The enactment of this more formalised offer through the implementation of digital skills by staff as part of their role, is therefore in part down to the professional learning they have acquired and the needs of their learners. It was noted by staff at both schools that leaders were supportive of external training or additional kit required and would attempt to provide this if feasible. However, most training was seen as being in house and informal.

Tracking of this training offer is vital and the more experienced digital lead in School N described his process:

My mapping tool allows my staff to be able to see what is relevant for the age, the age-appropriate resources that there are.... At the start of any term, I send the same generic email out to all my staff – TA's, office staff, teachers – I'll say these are the things to do with digital this term... the kind of expectations. (SND)

Making it explicit to staff ensures that messages are received, and staff are aware of what they can / should be doing, and the Digital Lead is able to track, monitor and better advise his headteacher because of this strategic planning.

5.8.3 INFORMAL LEARNING

One aspect that reflects to the idea of the community of practice (Lave and Wenger 1991) was that of the recognition of the incidental learning that supports staff. The teaching and

support staff that I spoke to in both schools extolled the professional learning opportunities they had been offered but emphasised the importance of the more informal and conversational solution focused learning that takes place in corridors and staff rooms across the country.

In both schools, where a digital mindset is part of the everyday, there was a recognition that if professional learning was required, they would first ask another staff member for support, and that someone would be able to support them. Staff were also confident to 'Google it' or more often use YouTube to find their own solutions, demonstrating a resilience and confidence in their basic digital capabilities.

These unplanned sessions or sharing of tips and tricks that with digital skills were seen as fundamental "I wouldn't say it's like a formal training event, you say right, this is a little trick to save time, things like that." (SNT) Likewise "If you don't know something or are not sure of something, asking colleagues if they have done something we haven't done." (SHT) This was also discussed by the support staff "There are always tips and tricks we share with each other, to make it work smarter not harder...sharing the fixes." (SNS)

The positive attitude from all staff in both schools around this informal learning was clear. The advantages being that fixes were appropriate to their own setting and that often they were sharing solutions they had found to save others the time of looking themselves. This notion of smart working through sharing advice seemed to be active in both schools, and no disadvantages or concerns were raised by any participants around this being such an integral part of their professional learning for digital skills.

5.9 A NOTE ON ONLINE SAFETY

Paramount to all of this is safety. All interviewees and focus group participants talked about the importance of digital safety among learners but also themselves. Both headteachers gave similar comments:

I think it's important to have these discussions, we had one about social media and the impact it can have on you as a professional. (SNH)

We are always talking about safety and safeguarding training, more than annually... it's more about digital resilience rather than online safety" (SHH).

Whilst used in terms of how schools support parents with online safety of their own children, this analogy below summed up for me the reason schools are seeing digital resilience as fundamental both in terms of teaching their children, informing their parents and training their staff.

"Giving your children technology and letting them go up to the bedroom and being unsupervised that isn't far off letting them get into a car without a driving licence and giving them a little drink of wine as they go, you know it is that level of irresponsibility". (E1).

If the staff can learn the digital skills, they need to ensure our young people are safer and more resilient online, as well as being more resilient themselves.

Therefore, professional learning must develop constantly as digital develops. It does not stand still, and neither should we. As one participant noted:

I try to stay up to date with the new, because digital is just everywhere... it's not like we have learnt this and it will be like that again, it will all change.

(SHD)

5.10 LEADING AND LEARNING TOGETHER

Whilst conducting these case studies, the importance of the school ethos and culture came across strongly. Both schools had developed, under their headteachers leadership, a community ethic, a style of working together to learn and develop. Although the schools were not users of the Schools as Learning Organisations Model (2022), described by the Welsh Government, they held many of the same goals and process as outlined in the seven dimensions.

A school is its own eco-system within a larger local area, and national education system. This eco-system can be defined as a community of active participants, working together in the same situation and for the same goals. With that in mind, it became apparent that Lave and Wenger's (1991), concept of Communities of Practice seemed to reflect what I was seeing in these digitally leading schools.

It could be argued that in both schools, the positive culture and the communities of practice (Lave and Wenger, 1991), that exist in the schools facilitate the enactment of their digital vision. This idea of a community of practice resonates with what I saw within each of these schools. The vision, and ultimately the digital policy, was enacted through a culture of learning together.

Learning, in this case about digital tools and techniques, is done in both formal but more importantly, informal and familiar ways. Professional development and learning about digital tools and practices is not being seen as something specific that had to be done, but part of the day-to-day activities of being a member of staff in these two schools, where staff speak about engaging with each other and "sharing tips and tricks" (SNT). This interaction between members of the community allows learning to take place and practice to change and develop. Practice is described in a community of practice approach as an "ongoing,

social, interactional process...members interact, do things together, negotiate new meanings and learn from each other" (Wenger, 1998, p102)

Teachers and teaching assistants work as individuals within the school, having a significant degree of autonomy over their day-to-day practices within their classrooms and with the learners they support. However, this sense of a community of practice means that the links between them are grown organically. They interconnect to form part of the whole and they use each other to support their learning.

The Communities of Practice (Lave and Wenger, 1991), approach appears to be the way that these two schools enact policy, and this comes through the school leaders' vision and values. It is less about the actions of the individual actors, although these are important elements, but more about the overarching ethos within the school that they are all in this together.

Regarding the process of reification, the documents and policies in these schools are reified by the community as a whole. The headteacher leads this process but more by enabling and supporting and participating in the culture of a community of practice rather than directing so there remains mutual accountability rather than a top-down directive.

Generational changes, the shared history and institutional knowledge is both remembered and forgotten through the process of reification, allowing the context and traditions of the school to be upheld but also kept relevant. This is how these schools are digitally leading as they are accepting of the need to make generational changes and adapt, but respectful of the school's past. A community of practice allows for this past-present-future situation to co-exist. In these two schools, there was a conversation around who knew what was perceived

as a positive, an opportunity for sharing knowledge not keeping it to themselves. The teaching assistant in one school was known for holding all the institutional knowledge, in Lave and Wenger's (1991), terminology she would be seen as an "old timer" having been a member of staff for the longest, and in the same school, the newest qualified teacher, or novice in the same terminology, was the digital lead, having done the role previously as a teaching assistant. The acceptance of informal learning and using everyone's strengths was a key feature of leadership in School N particularly, with the headteacher explicitly stating "I know my staff, I know what they are good at" (SNH).

5.11 CONCLUSION

Overall, throughout this Findings chapter I have sought to demonstrate the range of findings across both schools and the Elite participants within each of the four themes. When considering the external factors such as national policy and infrastructure, it is clear that schools struggle with the lack of self-management in some of these areas, and the breadth of literature for them to negotiate themselves when attempting to enact an organisation-wide digital mindset in their school. It also appears that there is a gap in education when thinking about the impact that digital tools and technologies have on the school, with a focus remaining more on the use of these by learners.

In terms of internal factors, leadership came across as integral to the development of an organisation-wide digital mindset in a school, the vision and culture that is apparent in the case studies were reported by staff as a major factor in their own digital development. This coupled with professional learning in both formal and informal ways across the staff, seems to play a big part in my two schools being able to be and stay on top of their own digital vision.

In the next chapter, I will be discussing how these findings link back to the literature discussed in Chapter 3, and within the context of Wales, as outlined in Chapter 2. I seek to consider each of the four themes in turn and then look more widely at the notion of enactment theory and communities of practice as models for schools developing their own digital vision.

6. DISCUSSION

The creation of organisation-wide digital mindset within our schools, as shown in both these cases, is not only possible but could also support the ambitions of Wales as a digital nation, and the fulfilment of part of the curriculum for learners.

Schools work within the parameters of policies, guidance and structures that are nationally and locally prescribed to them. Having described and begun to analyse the findings from these two cases in the previous chapter, this chapter will now situate those findings within the theoretical framework outlined in Chapter 3. The development of enactment theory through the addition of a Community of Practice (Lave and Wenger, 1991) approach to vision building and professional learning, is novel, stemming directly from the findings across both schools during the research.

In terms of its contribution to the field, this research sheds light on the need to move from the consideration of leadership, professional learning and infrastructure as being three discrete pillars across policy and school life and draws on the interdependence of these three. This together with the influence of a school's unique culture, enables them to develop their own organisation-wide digital mindset. In a nation such as Wales, with a curriculum that promotes differences between school communities as well as sharing a set of principles and purposes for learning, rather than a prescriptive approach to learning for all, this interdependence of leadership, professional learning, infrastructure and culture can be seen as a natural way to effect digital transformation in individual schools. In their literature review, Timotheou et al (2023) indicated similar findings would affect a school's digital capacity, however none of their research came from Wales. Using the Hwb EdTech programme and platform as a central lever to effect this change, Wales already has a structure in place to support schools to develop their own organisation-wide digital mindset, and this research shows how two digitally leading schools have coordinated these factors (Leadership, Professional Learning, Infrastructure and Culture) in a sustained way.

The data analysis gave rise to the creation of four themes that together attempt to answer the two research questions. These four themes can be separated into External and Internal Factors, and during this discussion I will relate each of these concepts back to the theoretical framework.

6.1EXTERNAL FACTORS

External factors are those that, according to Ball et al (2011, p.36) include the

“Pressures and expectations by wider local and national policy frameworks”. Additionally, within the context of digital in education I have included Ball et al’s (2011a), material contexts as part of the external factors as these link to the physical aspects of a school, which for the purpose of this research is predominately concerned with network infrastructure and is managed in the main by the local authority.

These external factors are the elements that school leaders have relatively little control over in terms of substance and provision. They are imposed upon them by the local and national systems in Wales.

As Wales enters a transient phase (at the time of writing in 2025) with the reorganisation of the middle tier, including both local authorities and regional consortia, (Welsh Government, 2024), to provide a more effective support system for schools, this research indicates that whatever these structures will become, there is a need for national equity of provision, services and support. As the Curriculum for Wales (2020), evolves and embeds in schools, it is important that our external systems look to provide opportunities for schools to develop the curriculum for learners, and that staff are comfortable and competent in delivering this within an increasingly digital world. The use of the Hwb platform would enable effective communication of these changes and enable staff to create nation-wide professional learning communities to support informal professional learning, a community of practice on a national scale, something explored by Krabonja et al (2024) and found to be effective at both school and system level.

Harnessing the potential of digital tools, particularly AI tools, could, if properly considered, reduce staff workload. Since Covid-19, other industries increasingly offering home or hybrid working, something school staff are generally unable to take advantage of, and effective use of digital tools could begin to mitigate for this inflexibility, potentially making teaching a more attractive profession in Wales than other nations who are not adopting this approach.

I will next consider each of the two themes in turn, suggesting how these relate back to the initial theory and literature.

6.1.1 THEME 1 – NATIONAL POLICY

Throughout the research, it has become clear that although there are guidance and policy that affects the digital landscape in schools, there is no one overriding document which provides schools with a clear set of policy recommendations to follow. Ball et al (2011d), recognised that the volume of policies schools must negotiate daily often leads to confusion and those which are clearer and more fundamental are often adopted first, leaving others to the discretion of the leadership team and the school vision. With no single high-level document that outlines how schools in Wales could and should develop a digital mindset or that provides signposting to other documents and guidance, some documents may get missed by schools and by those advising the government. The data found little consensus between the Elite participants as to the main policy documents that schools need to develop their digitalisation and the headteachers reported a reliance on the local authority for signposting to any relevant information.

Bjordal (2025) suggests that policy language itself can determine how teachers are expected to respond to the policy, and this then impacts the importance of the policy and the enactment of that policy. However, in Wales without a single digital strategy in education policy, the landscape is more convoluted as different policy documents use different language – some demanding a more passive acceptance than others. “The relationship

between educational policy and teachers' professional practice is complex and ambiguous" (Bjordal, 2025 p.429) which makes creating and sustaining effective professional learning for these policy areas complex themselves.

This lack of a central, high level, coordinating strategy has meant that these policy and guidance documents are published independently, and are often not statutory or mandatory which causes confusion rather than coherence. Furthermore, the notion of developing policy from end user point of view first rather than considering what our whole school system should or could look like has been a stumbling block to creating a coherent picture of digital in education across Wales. One of the core factors identified by Timotheou (2023) was that of government support, which whilst present in Wales through the Hwb programme, lacks the coherence and impetus that would encourage more schools to develop their own digital mindset.

Pettersson's (2017), meta-analysis indicated that a clearly formulated policy around digital competence can "set the agenda for school innovation and educational changes" and that these policies need to be across school, local, regional and national levels so that they can be enacted effectively. From the research at Elite and school level, this is what schools are looking for, and indeed what the Elite participants would also suggest moving forward. The Digital Competence Framework (Welsh Government, 2016) is learner focused but to fulfil it, as well as developing schools' digital capacity, we need a digital education framework that considers the role and requirements of all stakeholders. This should be regularly reviewed and updated to fit technological advances, enabling school leaders to develop an organisation-wide digital mindset, whilst also considering the language used to ensure it is clear for all sectors of the education system.

The current overlap of the many frameworks and policy documents that include aspects of digital for schools' lead to some schools focusing on one part to enact, such as online safety;

whilst others choose a different aspect such as developing pupils producing skills. Hay (2024) describes this as “messy policy” (p181) where different policies merge or even contradict each other, and that the implementation of these varied policies is rarely carried out in a linear fashion but is cyclical and ever changing. In Wales, these many frameworks and the decision as to which should be prioritised falls to the headteacher. The use of the Digital Professional Learning Journey (Welsh Government, 2016) was considered by one Elite participant as vital for schools as it impacted directly upon the education that the learners received and is arguably the document designed to support schools in developing their own digital vision. However, neither the DPLJ nor its supporting 360Digi Toolkit were used by either of the two case studies. All the main elements of the DPLJ could be seen in the schools’ planning and development, demonstrating its relevance and potential as a vehicle for schools without digitally inspired leadership. The 360Digi Toolkit therefore becomes a benchmarking system for those less digitally aware schools to use to support their digital development, rather than a compulsory activity as part of the DPLJ itself.

School leaders are trained and supported to link national policy to school level enactment, through their National Professional Qualification for Headship and leadership professional development, particularly around new policy areas such as during the recent development of the Curriculum for Wales. However, the breadth of policies that include reference to digital and the disparity between learner focused policies, within the Curriculum for Wales descriptors (Welsh Government, 2020), and those that link more to staff roles, such as the Professional Standards (Welsh Government, 2017), is vast. Coupled with this, some policies are mandatory, some statutory whilst others are considered as guidance only. The lack of coherence for staff in terms of operational support and practitioner professional learning around day-to-day use of these tools is also lacking according to the Elite participants, and when this is provided it is done via regional or local support partners so is variable across

Wales. Without a practical operational guide, use cases; or reference examples, teachers are unable to enact the policy and use them to inform their planning.

A popular document within both schools, and something discussed by all the Elite participants was the importance of online safety and the use of the 360Safe Toolkit. Both schools were proud to have achieved the 360Safe Accreditation from this toolkit because of their explicit curriculum links to learner online safety. This toolkit provides templates and guidance for schools to improve within the online safety realm and is regularly updated. However, it is not statutory for schools to complete any elements of this, despite the massive shift to online emergency remote learning in 2020/2021 and the rise of free GenAI tools since 2023. The two schools mentioned that the formal assessment process was time-consuming to undertake and required buy in from the whole staff to ensure that online safety was developed across the school and wider community. Additionally, there is a cost implication to get the accreditation, and the process includes an assessment visit to the school. This additional pressure on schools may be why more schools are unwilling to apply for the full accreditation even if they have completed the benchmarking tool and consider online safety to be integral to their day-to-day practice.

Furthermore, we need to consider the role of Estyn, the inspectorate for schools in Wales, as the organisation that makes and publishes reports about the state of education in schools and local authorities. From my review of the two schools' Estyn reports, there was limited emphasis around the Digital Skills of the learners in school level reports from Estyn and this could potentially limit the schools' focus on digital both within the classroom as an organisation-wide digital mindset. Literacy and Numeracy, ALN and Leadership are given primary status within a published report and so, as mentioned by the Elite participants, those will be the starting focus for schools to ensure that their inspection reflect those headline sections appropriately. Tearle (2004) suggested that Observability is important in the change

process, and that if people cannot see the changes, then they are often not considered to be important. If Estyn are not emphasising a digital way of working as part of both teaching and learning, or as a mechanism for the wider systems and processes within the school, then potentially schools will not value it as highly, focusing instead, as mentioned by one Elite participant, on the things that Estyn will be looking for.

A coherent policy narrative, with an overarching digital strategy for schools to strive towards, could be bought into by school leaders and adapted by them to suit context – much like the premise of Curriculum for Wales. This would ensure that all schools are able to harness the potential of digital for their own workload but also support the overarching goal of Wales to produce digitally competent citizens as outlined in the six missions of the Digital Strategy for Wales (2021).

There is a disconnect between the job of schools as providing a service to learners through the curriculum that is taught; and that schools are also workplaces that need to embrace modern technological advances to offer an attractive working environment. Curriculum for Wales launched in 2022, the DCF launched in 2017 (but is at the time of writing undergoing a review) and the qualifications system (although not applicable in the case study schools) launches the first of the new qualifications this year (2025), all of which show an understanding that education for our learners needs to be modernised. However, without guidance for schools and staff on the merits of digital as a workplace tool, the workplace itself is lagging.

These external policies therefore can both help and hinder schools in developing an organisation-wide digital mindset, both for the benefit of staff and to meet the needs of the curriculum. There is a space in research to demonstrate how policy moves toward

enactment within schools, taking into consideration the context and culture of the school itself. Enactment Theory (Ball et al, 2011a) clearly outlines the different contexts, factors and actors that are required in this process, and Hay (2024) describes the need for these Actor Networks to help explain the nuance within a school that is determined by culture. Most research emphasises the role of the headteacher in being the key person responsible for the receiving of these external policies and therefore their enactment. Lundqvist (2022) notes that in Sweden this responsibility is part of the headteacher's role, and it is their responsibility alone to uphold these. There is no such obligation in Wales. In fact, the overall responsibility of the school's adherence to policy lies with the governing body – a voluntary body of individuals who are not required to have educational experience. This research suggests that schools who are digitally leading develop both formal and informal communities of practice across their staff, to support school leaders in deciding how to enact these policies, giving distributed leadership to the whole community. The example from School H where policies and guidance are given to staff to deconstruct and review and report back to the headteacher suggests a far more bottom-up approach to policy enactment than previous research suggests.

6.1.2 THEME 2 – INFRASTRUCTURE

The material context in Ball et al's (2011a), enactment theory suggests that an important element in any policy enactment to consider is the practical, tangible elements such as the buildings, the staffing costs and, in the case of digital development, the network systems and devices.

Wales has invested in digital infrastructure in schools through its EdTech programme, the established Hwb platform developing over time to provide software for schools free at point of use, and infrastructure such as broadband connectivity coming from the local authority.

On its webpage, Hwb (last updated 2024) describes itself as:

...fundamentally challenging and changing the digital landscape in schools. This [Hwb] will deliver a fully sustainable approach with digital recognised as the 'fourth utility.' The Hwb programme is driven by a set of strategic guiding principles which puts our learners and practitioners at the heart of everything we do.

The Hwb programme states that it is aligned with the Digital Strategy for Wales (2021) This strategy, as mentioned in chapter 2, is not specific to education and covers a broader public service remit. The challenges that schools face to deliver a curriculum and qualifications to learners across the country are not always best served by a platform that is more aligned to wider public service and less aligned to education. Vandeline and van Braak (2010), in their e-capacity model for primary schools suggested that schools' ICT infrastructure and technical support systems (two separate elements in their model) were significantly positively correlated with the school vision and the school support and coordination. Here in Wales, this research would suggest that whilst the systems exist, there is still a gap between these national and local support systems.

Having a national platform, particularly during the time of Covid and remote learning provision, was, according to one Elite participant 'world leading', and to one of the digital leaders as being 'integral' to their provision at this time. Being able to provide learners with immediate access to online lessons and resources created by teachers and having the confidence that these systems were already tried and tested by schools across Wales, lessened the delay in the uptake of emergency remote learning.

Currently, school leaders in Wales can use a predetermined and earmarked fund for development (Hwb EdTech Funding) and therefore can continue to prioritise digital development. Having an investment programme that comes through local authorities to schools that is specifically earmarked for digital spend, lessens some of the difficult budgetary decision making that the school leaders discussed. The decision as to what to prioritise in terms of digital devices are left to the schools themselves from a catalogue of

options, and both of the schools chose to provide staff devices as a priority alongside other digital teaching tools such as interactive screens.

Where teachers are able to access a range of different and appropriate digital tools and technologies, the impact on learning and teaching is greatest (Condie and Munro, 2007). These two schools had their own policy about providing devices for staff, something that does not appear in any national guidance. In both schools, participants were enthusiastic about the provision of devices for every member of staff as standard, and a recognition that this would not be the case in all schools. One teacher explained how whilst not being offered a school device wouldn't automatically prevent him from applying for a job, it would be a consideration in his decision now that he has been used to having one. The need for access to the correct tools for the job is part of an effective digital strategy. Not having the right devices in the right places with the right technical support is a barrier (Timotheou, 2023) and can discourage the development of a digital mindset within the school.

The fact that this choice exists through the national Hwb programme is worthy of credit to Wales. It is not a perfect system, particularly for schools further ahead with their digital journey, such as those in this research. There is a limit to the items that can be purchased in the current funding system, and these may not align with the school's vision, although this funding does enable school leaders to maintain a clear baseline, or a minimum digital standard, across the school.

The addition of the Wales Education Digital Standards (<https://hwb.gov.wales/school-improvement-and-leadership/education-digital-standards>) gives local authorities a baseline across a range of technical standards to provide to schools, so that there is a minimum standard that they can hold school accountable for and ensure a level of equity across the nation. The limitations of these nationally given Edtech baseline standards have led to areas of the two schools' buildings being poorly served in places by the network connectivity. This

lack of reliability causes undue stress for the staff and an understanding of why some may perceive limits to the benefits of technology for reducing workload. If they must plan for the scenario of no network, then this may be a reason more schools are holding off on digital solutions which could be time saving and more efficient. However, the EdTech annual funding does not allow for these to be upgraded through school choice. In schools that are already fostering an organisation-wide digital mindset, such as my two cases, there is a case to answer that perhaps the current EdTech procurement list is limiting and those schools could be given additional options to spend some of this money on developing infrastructure, cables, routers and access points rather than on the specific hardware elements that are currently offered.

Wales already has the beginnings of its own Digital Framework through the SLO and other policies and guidance such as the DPLJ, in which the need for the vision to drive the infrastructure requirements is clear and the need to have the right support and systems to manifest that vision. Pettersson (2018), suggested that in both goals orientated and culturally orientated schools, there is a need to develop the organisation by both aligning systems and collaborating with external partners. Furthermore, Tearle (2010), recognised that within any digital development of a school there is a need to understand the resource provision and the external influences that will affect implementation of a vision. This research has indicated that the external factors such as national policy and infrastructure are not yet coherent enough for schools to be able to begin that change process effectively.

Likewise, Tearle's (2010), Framework for Implementing Change in ICT Education, suggests the need to consider both the practical factors such as availability of technology, time, training and coordination to be as important as the attitude and ethos of leaders and the school. The concepts from both research pieces can be seen in elements of the 4T's from the Wales Schools as Learning Organisations (2022) - Time, Trust, Togetherness and Technology.

Consideration of both sub themes under the main theme of External Factors demonstrate that whilst every school is individual and works as an independent entity, there is undoubtedly a substantial influence from national and local bodies. A strategic, high-level document that speaks directly to schools about the potential of digital tools and technologies throughout the organisation and not just within the curriculum is one area identified from this research that is lacking. This means that there is not a single point of regulation, policy or national guidance for the school leader to enact. The breadth of other policy areas that influence digital development, many being non-statutory, adds to the volume of documentation that school leaders must negotiate with when developing and implementing a digital vision for their school. Couple this with the provision of network infrastructure and national systems managed by external providers and a system that is designed to support equitable, baseline provision across Wales, the research has seen that this can be both limiting for those who are more digitally confident and confusing for those who are not.

I now turn my attention to the internal factors that schools do control and consider the features that I have seen in my research around both Leadership and Professional Learning, my two sub-themes in this next section, and two more of the influences required in developing an organisation-wide digital mindset.

6.2 INTERNAL FACTORS

When considering the factors that influence digital policy enactment in schools, there are a range of external factors such as the provision of the policy and guidance in the first place and the management of the infrastructure required to develop it in the second. It is also important to consider the role that factors inside each individual school will play.

These professional contexts (Ball et al, 2011a), include the values and ethos of the individuals in the school, how the professional culture of the school is developed and how that impacts the enactment of a digital vision. This section will consider two sub-themes. The first is leadership, meaning in this research both the headteacher and the digital lead teacher; the second is professional learning which is part of staff development but can be both school led and self-led. These two sub themes became apparent across the findings and echo the importance given by both Pettersson (2018) and Tearle (2010), to the development of people and the role of strategic leadership.

6.2.1 THEME 3 - LEADERSHIP

Factors that influence a school's digital culture include the use of ICT by teachers, the digital competence of teachers, the teacher's ability to design content, the use of e-communication tools between staff and with parents and the frequency of use of ICT all feature. However, this research has found that before a school is able to get to this point there must be an impetus from leadership that promotes a digital mindset, as one of the headteachers noted: "this is the way we do it" (SHH). The integration and co-dependence of leadership, professional learning and infrastructure within the culture and context of each school is central to this thesis findings, and leadership can be seen as the lynchpin for these at school level. Condie and Munro (2007, p.75) stated that "a critical factor in effective use of ICT is the existence of a school level e-strategy...". Whilst this specific school level policy was not seen in this research, the integration of digital tools and technologies permeated throughout all aspects of the school. This included ensuring it appeared on the school development

plan, was factored into teaching and learning strategies and played a role in staff induction. The absence of a bespoke school level digital strategy did not prevent these schools from considering digital to be important, however for those schools starting the journey, it may prove to be an effective starting point.

Tearle (2010), placed the whole school culture, ethos and strong leadership as the external ring in her diagram of influences, the element that encompasses all the other elements.

Tearle (2010), identified, as I did in my findings, that a positive attitude and a culture that promotes learning for all is integral to the development for something as transient as digital skills. Digital development is not something that can be done and finished with, as explained by one of the Elite participants, it involves sustained progress and change. Pettersson (2018), uses the phrase cultural orientation to mean sharing visions, building a culture of learning rather than being focused on specific goals or structures, and both of the schools can be described as setting a digital direction using cultural orientation.

The notion of shared responsibility and distribution of leadership to the digital leaders were apparent in both schools with the headteachers valuing the experience and knowledge of staff sufficiently to take on their advice. Using the strength of staff even if they are not part of the leadership team, in the case of School H who appointed their digital lead whilst he was a teaching assistant, shows an understanding and recognition of the value of staff, and a trust in their abilities. Hay (2025) sees the leadership role as being integral to the creation of Actor Networks throughout the process, from the development and sense making phase, the roll out or enactment phase and the action or adoption phase. Leadership in both case studies was important throughout this process; however, it did not lie solely with the headteacher. In fact, the entire school community was part of the process from start to finish.

Both headteachers acknowledged their reliance on their digital lead and their staff to help devise and enact the digital vision they had. In School H, the headteacher described how she frequently gave policy documents and guidance to staff to “take apart” and critique

before sharing their findings back with her. In School N, the headteacher acknowledged that her digital lead was the person who was sent to attend training sessions for digital tools and guidance, even if that meant him being in a room of headteachers and feeling out of place, describing the difference between the other heads and himself as “all of them and just little old me!” (SND). The selection of the right digital lead therefore is one of the key decisions that a school leader must make, to ensure that they can both support the school vision for digital but also bring their own energy to this critical role, providing both formal and informal support and commanding the respect of the staff. Lundqvist (2022) emphasised the role of the principal in directing staff and developing the strategies required, where collegiate learning was encouraged but was also planned and structured through the principal. In both case study schools, a bottom-up approach was also seen, where the headteachers took advice from staff and often the staff led the way due to the culture that was inherent within the schools themselves. There was not a sense of a singular top-down rule from the headteachers, despite the recognition of their accountability. The principle of subsidiarity is well established in Wales, particularly in education where school level agency is encouraged and championed. The headteachers in both schools showed what that looks like in the practice of enacting the digital policy landscape.

The need to formalise a digital vision was also apparent. Discussion with staff and a shared ownership of the language and sentiment behind the words used was mentioned by both schools, reflecting the Digital Professional Learning Journeys structure despite the two schools not using that document itself. The analogy of the headteacher in School N being the champagne bottle pouring into a tower of glasses that represent the staff sits with me, as it reflected the leadership style of the school. The enthusiasm and positivity given out by the headteacher and in turn by the digital lead appeared to me to be infectious and staff acknowledged they had bought into their lead, likely in part because of the enthusiasm the leaders conveyed. This showed the community of practice approach in practice and

emphasised how enacting national policy and school level vision is determined by the culture surrounding the school leader.

In both schools, it appeared that the leadership understood the value and potential of digital tools and technologies for the learners but also for the staff. The priority of investing in digital devices and training was clear in both schools from the headteachers interviews but also from the staff interviews who saw this as a benefit or perk of the school over other schools they had worked in, or they knew of. Both schools, but particularly School H, talked about digital changes they had made and then kept following the Covid restrictions. These included home-school working with parents with the use of digital forms and online parents evening options being a feature of their school. Making effective use of digital tools and technologies throughout the school to provide and manage data can both reduce workload and help teachers make more effective decisions to support their learners (Timotheou, 2023)

This acceptance of digital tools by headteachers without a background in teaching IT or Computer Science shows that this is not about leaders needing in depth knowledge of systems, coding and digital technologies themselves, but having an open mind and acceptance that these developments can make their staff lives easier if enacted properly.

One Elite participant, a headteacher with a background in computer science who considered this to be particularly unusual within primary headteachers in Wales, emphasised the need for headteachers to ensure that a vision is owned by them, led by them, and has to have the full support and buy in of the headteacher, even when they aren't the experts in that field.

This is then qualified by another Elite participant who recognised that whilst this must be led from the headteacher, it is important that within a school there are people who can drive the use of digital tools, showcase them and are willing to share those. Whilst Lundqvist (2024) focused on the role of the principal in enactment, this research shows that the wider school staff have an important role to play in ensuring policy is implemented and embedded.

The Elite participant talked about having a digital mindset as no longer being 'nice to have' but something that is a professional competency, something that both schools during the interviews showed in their outlook to the organisation-wide use of digital tools.

The digital mindset in both schools is not a tag line or showcase piece; it is a necessity of provision with every member of staff using digital tools and devices in a structured, planned and supported way. These schools are demonstrating a vision that is lived and enacted through the decisions made school wide and an understanding that this is being done for the benefit of both staff and learners.

To make this leadership decision a reality however, it is important that professional learning, both formal and informal, is offered for all staff, and this includes training on specific tools and systems, training on pedagogical use in the classroom and training on safe working practices.

My final sub-section discusses the importance of professional learning across a school and its place in enacting a digital vision.

6.2.2 THEME 4 - PROFESSIONAL LEARNING

Gone are the days described by one of the Elite participants as where "IT was the remit of the young, male, sporty teacher" (E2). The prevalence of digital tools across schools, even those that are reluctant or less confident in this area, is making digital devices ubiquitous within teaching, just as the blackboard once was. It is hardly possible to avoid using any digital tools in schools and for these to be successfully integrated into a school there needs to be a planned and sustained professional learning offer. Tearle (2004), explains how any implementation of a digital vision must include planned support and training in advance of the implementation occurring. It could be suggested from this research that teacher's confidence around the use of digital technologies has been reliant upon long term

professional learning, where teachers have been encouraged to “give implementation a go even if they lack confidence” (Stringer et al., 2022, p 12602). This was shown through the findings across both schools, digital training and support appeared to be planned and remained a constant on the professional learning agenda for the school. Both schools prepared regular staff bulletins with the digital vision being an integral part of this offering training in house or signposting links to external opportunities. From the interviews, it appeared that both schools carried out whole staff audits and linked training to that and to the curriculum plan, and both schools offered new staff an induction into their own systems.

Pettersson (2018), described two approaches that she has seen in her research, one where staff were guided by senior staff in terms of what was offered and the other model where staff took responsibility for their own learning. In this research, it was clear that a hybrid model had been adopted, where a set package of planned training was developed and provided either by internal staff or external organisations, but also the ability and encouragement for staff to find their own training as appropriate for their own needs and interests.

One Elite participant also referred to the folly of only accepting training from one source, for example the lead school training system employed in some regions (where specific schools are named as lead schools in a particular aspect such as a digital or science lead school). He commented that:

...if you only rely on that [lead schools] then you are at the mercy of the knowledge, skills and experience of what that school can offer” (E3).

Enabling teachers to experience a range of different perspectives through their own professional learning as well as ensuring the focus at school level fits the school vision and improvement plan is a more effective way to tackle professional learning. The need to both share existing good practice, and to co-construct school wide practices through training, reflection and peer to peer feedback is apparent in these schools and is reflected in research

by Krabonja (2024). The involvement of the whole community in training analysis, planning and delivery, both to improve the individual and to develop school wide practices seen in these schools will ultimately support the continual evolution of the school's digital mindset.

For example, in School N, the teaching assistants were encouraged to undertake research projects as well as the teaching staff, and one talked positively about her “me-project” being focused on the use of a digital reading programme. In School H, a teacher described how she integrated Minecraft Education into her lessons and had found and attended training to support that herself as she would be running it as a pilot for the school. Eliminating barriers and providing a culture of trust and confidence allows the staff in these schools to undertake professional learning that fits their own preferences as well as undertaking the whole school more formal approaches. When teachers are supported and feel comfortable with this, they are more likely to engage more fully with the training. (Timotheou, 2023)

Professional learning was referred to frequently by all participants, both Elite and in school, as integral to continuing development with the digital tools available. Condie and Munro (2007) reported the need for training at all levels – new teachers, in service teachers and school leaders; and to ensure that this is purposeful. It can be seen in both schools that training is undertaken by all members of the school staff in appropriate ways. One Elite participant, a regional advisor, explained that his role is to provide organised training sessions but also bespoke school support to fit the needs of each individual school more effectively. Offering this variety of training and having a school leadership that values all forms of professional learning is very much in line with my understanding of the Professional Learning Entitlement of Wales and stems from the development of the new curriculum (Welsh Government, webpage, no date).

Harnessing digital tools to undertake professional learning is also an area that the schools both commented on, explaining how “we are all learners, all the time” (SHH) and how online digital tools are often the go-to. As one teaching assistant explained, it is where they go to

find things out to help them in their everyday lives, so why wouldn't it be where they go to get support in their working lives. The headteachers' recognition of the importance of these less collegial sources of training is important. The promotion of more self-selected learning at a time to suit staff seemed to come through clearly.

One area that all participants, school staff and Elite participants considered of critical importance was professional learning around online safety. With the continual evolution of digital tools areas such as the use of social media and generative AI, the detection of bias and fake news has become a concern for young people and their teachers but needs to be reflected in the training given to staff. The notion of digital resilience to counter the continual changes came through in the interviews. Being able to upskill teachers in how to be digitally resilient overall is an area of professional learning that both schools valued and saw as an important factor in their planned professional learning. Within the context of AI and other emerging technologies that will ultimately find themselves within the school buildings, Vargas et al (2025) recognised that more research is needed to understand the benefits of using a Community of Practice approach. Both individual teacher competency and school-wide organisational changes can happen using a Community of Practice approach, but that further evaluation is required to implement these effectively. In these two case study schools where an informal Community of Practice approach exists, it would be interesting to see how the introduction of AI tools is being planned for.

Staff at both schools also valued informal learning almost more than the planned provision and all the school-based interviews talked about how the supportive culture in the school meant they were able to ask others for help on an ad-hoc basis, so that they learnt the skills they needed when they needed them.

"A strong collaborative culture is the foundation for introducing sustainable changes to education" (Krabonja, 2024 p.13) and this is exemplified in these case study schools. This informal learning culture can be linked to the concept of being a learning organisation, a PLC

or as a community of practice (Lave and Wenger 1991), and this culture is discussed in the final section of my discussion chapter.

6.3 ENACTMENT THEORY AND COMMUNITIES OF PRACTICE

The digital leader in School N is particularly fond of Martec's Law, developed by Scott Brinkler (2013), which suggests two truths that co-exist at this time. The first, that technology is changing very rapidly and accelerating, and the second that changing an organisation is hard and slow. This recognition is even more obvious in the school environment which is still grounded in Victorian practices of sitting to learn, working between set hours and listening to a teacher direct the knowledge. Technology allows us to work outside of these parameters, and a community of practice allows us to work outside of the restrictions of traditional professional learning, research and enquiry. When considering Enactment Theory for an everchanging policy area like digital in a slow changing organisation as schools are, there appears to be a gap in the theory. A culture of informal learning is important within a school to provide a solid foundation for those entrepreneurs and policy narrators to bring other staff along as enthusiasts and translators rather than critics or passive receivers.

Understanding that the context and the actors in a particular school will affect the way in which educational policy becomes practice is the main facet of Enactment Theory (Ball, et al, 2011a). The recognition that there are both external and internal factors that go toward the way in which schools can develop and implement a digital mindset was apparent in this research with the digitally leading schools and came through in the Elite interviews.

Enactment theory (Ball et al, 2011a), recognises that all schools are on their own journey, and all have the same national policy to negotiate but differing external outsiders acting upon them and influencing their digital vision. Enactment theory also that without a specific actor the policy will not effectively come to fruition.

Although both these cases were already digitally leading schools, having been proactive in their own enactment and prioritisation of digital, it was considered from the participants responses that an informal style of internal development had been apparent throughout their

digital journey. They had a history of working collaboratively within the school, and a mutual respect for all members of their team, and a desire to learn together, rather than this becoming a new method once digital competency was more established. This led me to consider whether enactment theory is sufficient to explain the differences in digital policy enactment or whether this approach to enactment required an addition to my theoretical framework.

Within the schools I researched, and drawing on the Elite participant's accounts, leadership and professional learning are the three main elements to the successful enactment of an organisation - wide digital mindset. The development of home-grown communities of practice for professional learning and support in an informal, but supported way, were highly valued in both schools. Enabling staff to access support and training when needed, in addition to the pre-planned and focused training sessions, was a constant source of positive discussion in the interviews with staff in both schools. They were mentioned by one Elite participant as how they began their own digital journey several years earlier, working in collaboration with staff to explore emerging issues around ICT use in schools. Having a leader who enables staff to develop these professional learning communities has helped the digital mindset of the schools become stronger over time.

The Finland primary teacher practicum, (Vaataja 2023), also showed elements of a Community of Practice model for digital pedagogy in that it negotiated goals, addressed challenges, offered regular interaction, co-developed the community and leveraged the expertise of the individual. In both schools these same elements were apparent, promoting the concept of a Community of Practice approach.

The Welsh Government promote the concept of Schools as Learning Organisations, which has been developed for Wales from the original research by Kools and Stoll (2016), which in many ways like the idea of communities of practice but is more structured and more whole school based. Its aim is to develop a shared vision, foster collaboration and promote

research, engagement and reflection across the school. Both schools had adopted this style of approach to building a culture of learning in an organic way, as part of their way of being rather than because of sustained research or directive, however neither of the schools headteachers utilised the SLO model fully, both stating they undertook the annual survey but then drew on the findings in their own way and within their own culture of learning.

The communities of practice model is more targeted at a specific, common interest area, is less formal in terms of set up and is involved with sharing learning and collaborative problem solving using their group's expertise (Wenger 1998). A community of practice can co-exist within the SLO Model, as the informal, grass roots beginnings of a more formalised process and more whole school research and enquiry-based system of development.

The theoretical model Communities of Practice (Lave and Wenger, 1991) which is based around a community of practice of shared, regular interactions and an informal learning environment, appeared to demonstrate many of these characteristics. Wenger (1998, p.214) describes the reason a community of practice might work within the context of developing a digital vision:

A well-functioning community of practice is a good context to explore radically new insights without becoming fools or stuck in some dead end. A history of mutual engagement around a joint enterprise is an ideal context for this kind of leading-edge learning, which requires a strong bond of communal competence along with a deep respect for the particularity of experience.

It is for this reason that whilst enactment theory recognises that individual schools will implement the same policy in different ways based on a variety of different contexts, the fundamental reason for these differences within the digital landscape appear to be because of school leadership and the culture that they embrace. The two schools, and the two Elite headteacher participants, describe schools with collaboration and informal learning at the heart of what they do.

6.4 CONCLUSION

Throughout this discussion chapter I have linked literature and the context of Wales to the findings from this research. The four themes (leadership, professional learning, culture and infrastructure) remain central to developing an organisation-wide digital mindset with learning at the centre of it for both students and for staff. It seems that each of these themes individually are powerful for schools, but when merged become a catalyst for bigger change.

This research offers the novel contribution that the notion of Enactment Theory could be described as a necessary but not sufficient depiction of how schools in Wales develop their use of digital tools and technologies. Integrating the concept of communities of practice with enactment theory to demonstrate that even with similar external contexts, the culture and ethos developed by a school leader can be sufficient to enact policy where other schools with similar contextual make-up are unable to enact policy sufficiently. The interdependence of leadership, professional learning and infrastructure should be viewed through the cultural lens of each school, where each factor is inextricably linked with the others, each a vital element in enacting policy to transform the school's digital mindset. The community of practice approach is consistent with the vision of curriculum for Wales, where schools adopt approaches that fit the nature and context of their learners and locality, drawing on their own wider community in its development. Building an internal community of practice, which incorporates enactment theory would enable schools to move forward and develop their own digital mindset and leverage the accessibility of the Hwb platform could enable these informal communities to be nation-wide.

Leadership is, however, the lynchpin of enactment and of these findings. Leaders are more than the narrators of the story. They are the set builders; the producer and the casting director all rolled into one. I have devised this analogy from the world of theatre as it seems to better describe the role of the school leader who is responsible for the daily performance of their school and moves me from Ball et al's (2011a), notion of a leader as simply a narrator or storyteller, to one with more direct control over the events of the school. School

leaders do not simply tell the story of government, they adapt it, fit it into their own context and take overall responsibility for the final outcomes – it is a performance itself.

In the final chapter, I will suggest implications for this research across each of the four themes and provide a new model for schools to develop an organisation-wide digital mindset, drawing on the tenets of enactment theory and communities of practices in the context of a Welsh education landscape.

7. CONCLUSIONS AND IMPLICATIONS

In this chapter I will consider each aspect and draw conclusions for each of my two research questions, suggesting some implications that this may have at national, local and school level. I will also demonstrate where this research has provided novel information as to how schools could develop a digital mindset and suggest further research that could be undertaken in the future.

7.1 RESEARCH QUESTIONS

My two research questions are interlinked. Without the national policy we will not have a national focus for education, but without schools effectively enacting the policy, the policy itself will be redundant. Ball et al (2011b) described a theory of enactment which I have used to begin to explain how schools can develop a digital mindset that is not just focused on the learners, but also on the school as a whole organisation. This is augmented by the Communities of Practice Model (Lave and Wenger, 1991) which can demonstrate how the enactment of such a fast-changing policy area such as digital is reliant on leadership and the introduction of a culture of informal, collaborative learning.

This research argues that schools need to develop an organisation-wide digital mindset with leaders supporting it, professional learning being dedicated to it and the infrastructure being able to manage it. This may support them to successfully fulfil their obligation to their learners and will provide an attractive working environment for their staff, harnessing the potential of digital tools that other professions and organisations have already begun to adopt.

Additionally, there is a question of how the policy and guidance informing schools are constructed, linked and kept up to date so that leaders can enact them within the context of their own schools equitably and unambiguously.

7.2 RESEARCH QUESTION 1

My first research question is:

How are national digital policies and guidance enacted by school leaders and staff in the Welsh primary context?

From my findings, the breadth of policies and guidance that are currently in existence for school leaders in Wales around digital education appear to be too numerous and lack coherence. This breadth of policies leads to some confusion in the system and therefore may be a barrier to leaders effectively enacting them within schools. The policies themselves are devised at national level and enacted by schools. The middle tier leadership influence the policy making in part, with the school leaders seen as recipients of the national policies rather than co-constructors of them. However, it is the school leaders who primarily enact the policies into their own schools.

A further finding was that whilst praise has been given by all participants to the national investment both in developing digital policies and providing financial support over the past years, the main barrier to leaders enacting any digital policy is their lack of confidence in the, particularly around connectivity in schools. This was frequently part of the conversations in the case study schools, with Wi-Fi considered to be unreliable and ineffective. For as long as this remains the case, it could be a barrier to schools becoming more digitally enabled. Furthermore, the reliance on headteachers to effectively plan and spend an EdTech budget without consistent guidance on what the minimum standards should be, leads to variation across schools that can lead to inequity of provision for staff and learners.

I will now look in more detail at some of the specifics around research question 1 in terms of the policy implications and the implications for infrastructure.

7.2.1 POLICY IMPLICATIONS AND CONSIDERATIONS

Whilst Wales has a range of policy documents covering digital in education, this research has indicated that these policy documents are too varied and lack cohesion, often relying on several different pieces to build a complete picture of the requirements for schools and variance between guidance and statutory policy regulations. Without this coherence, some leaders may find it difficult to enact an effective digital vision within their own context.

From the interviews with Elite participants and school case studies, national policy must be created with the end user in mind. Coherence with other policies and simplicity are important for schools who often must balance many policies and directives on a day-to-day basis. National policy should be supported by local authorities and school improvement partners in an equitable way across the country so that schools and learners are not disadvantaged by their location. The national Hwb platform should also work in a partnership with schools to ensure that it is able to provide what is needed. This joined up approach is shown in Figure 9, where all aspects feed into the policy development and then all aspects support the policy in schools. The arrows are purposefully drawn as two-way between policy and each area to indicate that there must be consultation in both directions to plan, do and review digital policies moving forward.

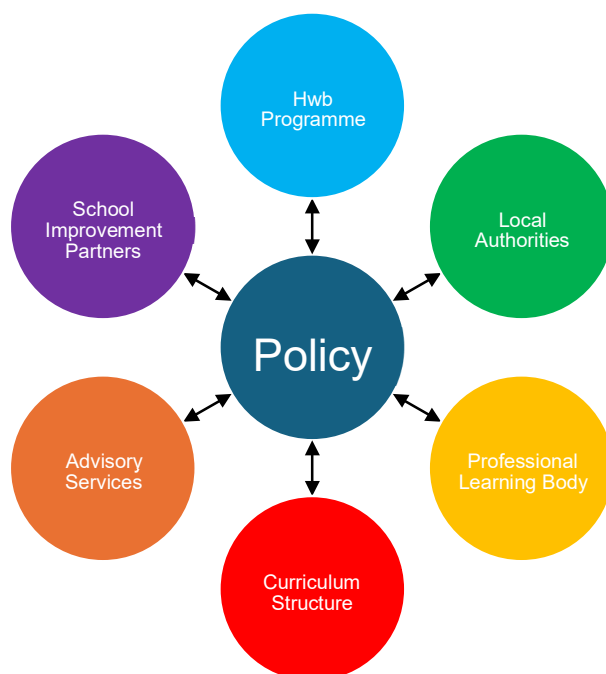


Figure 9 The two-way links between policy and wider factors.

A model that includes clear policy directives, interlinked and consistent with other education policy areas, informed by stakeholders across a range of areas, would enable schools to better enact this digital mindset. The digitally leading schools in this research have done this despite the reported lack of coherence, by developing their own digital vision and culture. Using schools such as these to advise and support the development of this national policy would help to lend credibility to the directives and ensure that they are easier for all schools to enact. These schools could provide use cases, exemplars and a day-to-day narrative that would support other schools integrate digital tools and technologies into their organisation. Local Authorities and other school improvement partners could also play a role in ensure equity across Wales in terms of the support and systems that they offer, as well as championing digitally leading schools who are enacting policy well.

Within the government, it is also important to see alignment between those who develop curriculum, professional learning and the Hwb platform, so that the infrastructure and the professional learning can meet the needs of the staff, as they aim to fulfil the needs of the

curriculum. There should also be an understanding that to be a digitally competent organisation, there should be place for digital tools outside of the classroom such as between staff and parents, as shown in these case studies. These elements could also be supported by national policy, professional learning opportunities and infrastructure development.

7.2.2 INFRASTRUCTURE IMPLICATIONS AND CONSIDERATIONS

The need for schools to be given a better offer in terms of network connectivity and reliability is paramount. Equitable access to safe, reliable and fast broadband and Wi-Fi will allow schools to have confidence in their digital infrastructure and this would remove one of the barriers to more schools developing an organisation-wide digital mindset. Both schools mentioned the need for being prepared for lessons when the network fails. This double planning would not be required if connectivity was improved and considered more reliable.

The national policy landscape around digital technology and its use in schools is wide and varied, as there is no overarching strategic document for schools to follow. The infrastructure controlled in the main by outsiders (local authority) needs to continue to move forward, to allow schools' own contextual needs to influence what is and what is not acceptable or permitted in terms of both the purchases that can be made and the baseline services that are provided. Both case study schools coming from the same local authority noted similar issues, however a wider study is required to begin to compare this across the 22 local authorities in Wales to determine what the national picture looks like.

Developing minimum technical requirements specifically for schools and the evolution of the current EdTech baseline standards, in conversation with the school leaders about their needs, would ensure that what schools are provided with is sufficient for a basic digital provision across Wales. Furthermore, by offering addons or optional upgrades for those schools who were willing and able to take the next steps in their digital journey would then deliver an equitable but also bespoke provision for schools. Similarly, with the EdTech

funding, offering a wider choice for schools in terms of what could be purchased with the funding would enable school leaders to better provide a solution to fit their vision. The caveat with this is that there is a need for better steering and support for those schools whose headteachers or digital leaders are less digitally knowledgeable or confident, so that they can develop and enact an effective digital mindset.

As schools move more into a digital future, offering staff devices as a standard part of the teacher and support staff job offer will become an expectation, along with the development of clear working time guidance to ensure work-life balance doesn't become more of a concern for the profession. To ensure that Wales can capitalise on the success of the Hwb programme and continue to offer a world leading platform for all learners, consideration must also be given to concerns around digital and data poverty for learners and staff at home.

7.3 RESEARCH QUESTION 2

My second research question was:

In what ways do school leaders cultivate an organisation-wide digital mindset in their schools?

It is apparent from my data that the role of the headteacher is paramount in the development of an organisation-wide digital mindset, however this is not about dictating the vision but about facilitating the culture using a community of practice approach. Therefore, the first consideration when answering this question must be about the leaders themselves. The headteacher delegating to a knowledgeable and enthusiastic digital lead yet still retaining the overall responsibility and interest in the digital agenda came through as fundamental in both of the schools. Alongside this, the need for digital to become part of the school plans, vision and strategy, emphasised its importance across the school for staff. Whilst both headteachers recognised their role to lead and to take responsibility, they both ensured that the right staff took the lead for digital and that the digital tools in use became part of the culture within the school by making space for professional learning and encouraging informal collaboration.

The culture of staff learning from each other and being able to ask for support from other staff was seen in both schools and it was considered that this was part of the leadership approach across the school. The internal policies having a digital mindset built into them, makes space for this informal learning to take place and promotes the idea of everyone enacting policy rather than having policy done to them by a directive. The implementation of a digital mindset by school staff is therefore dependent on the leadership and culture in the school, which I will now consider further and suggest some implications for next steps in Wales.

7.3.1 LEADERSHIP IMPLICATIONS AND CONSIDERATIONS

Through my research, I have read and summarised several different models of digitally competent learning organisations, most notably those of Tearle (2004) and of

Pettersson (2017), along with those of Ottestad (2008), Vanderlinde and Van Braak (2010) and Redjep, Balaban and Zugec (2021). It seems from the case studies, that for schools in Wales, there are three key aspects that are required to become digitally competent learning organisations. These three are: Leadership, Professional Learning and EdTech Infrastructure (considered as an external factor but impacting more directly on the school's decision making than national policy). The culture of having a digital mindset in a school is a final, fourth section intertwined throughout the other three sections, once the culture is developed and embedded the other three aspects will strengthen.

Figure 10 outlines how the central aspect for schools becoming digitally competent learning organisations is that of Culture. For schools to develop an organisation-wide digital mindset



there must be equal weight given to Leadership, EdTech Infrastructure and Professional Learning, and the culture then sits firmly in the centre of these three areas. National Policy, an external factor, should reflect these aspects of school decision making, and signposting to each of these three outer segments in relevant policy documentation would support schools to develop their own culture within the national remit and guidance.

Figure 10 The influences on policy enactment in schools

Both headteachers, and all Elite participants shared an enthusiasm for digital tools in schools, even though they all had very different academic backgrounds. This enthusiasm is what has driven digital in their schools and within the national policy development so far. The understanding of the positive impact of using digital tools for staff and learners is shared by both headteachers, who are supported by enthusiastic and knowledgeable digital leaders. Without this enthusiasm and knowledge, it would have been difficult for these schools to become digitally leading – the staff at both schools indicated that this is very much the case.

Although neither of the headteachers had academic knowledge of computing or digital skills, both understood how the impact of it could enhance both the learners and the staff, and lead to efficiencies and opportunities for all. They had selected digital leaders and delegated responsibility to them, but both very much were involved in the decision making. This ensured that staff were aware that the culture that was being developed and implemented by the digital leads was wanted by the headteacher and very much part of the whole school development.

Taking ownership of the digital development of the school is an important role and to do this, leaders need a good understanding of the different systems, processes and opportunities that digital tools can provide for school staff as well as learners. School leaders also need to become technologically aware and competent, not relying solely on their digital lead. Part of this competence will invariably support their own workload and will support them to have a greater understanding for the potential of digital tools for teaching, learning and administrative tasks. Those leaders who are more involved in daily integration with digital tools are likely to promote digital professional learning for all staff. The professional learning journey of a school must therefore begin with the professional learning journey of the headteacher.

7.3.2 THEORETICAL IMPLICATIONS OF THIS STUDY

Enactment theory, whilst necessary, is not sufficient to understand how schools try to become digitally competent learning organisations. Whilst there is a role for the actors described by Ball et al (2011b), and how the overall process of enactment happens, the very specific situation and context of each individual school, now championed through Curriculum for Wales, demands more than the explanation that Enactment Theory can provide.

Enactment regarding creating a digital mindset across a school can be seen as impersonal and 'done-to' especially by those not in the Narrator, Translator or Enthusiast roles. The roles are also curtailed by the Outsiders because of the level of responsibility for infrastructure that they have on a school. Ball et al (2011a), did not expect his enactment theory to become a model or framework that schools should follow but used this to explain the various policy actors who are involved in the creation of that enactment.

A Community of Practice (Lave and Wenger 1991) takes enactment to the next step by suggesting ways in which these policy actors work together to develop a shared understanding and vision within a specific context and culture. It provides an understanding of how enactment happens within a school context. The Community of Practice model if used effectively may work within the school and can bring the outsiders into the community, for example working with the local authority, to develop the needs of staff and learners.

Enactment theory doesn't reflect the social learning aspect of a school; neither does it recognise how policies are often considered more in terms of accountability rather than best practice for staff and learners. The 'We Treasure What We Measure' mantra is apparent with a top down, directive approach to enactment of policies. Digital development of the school as an organisation is not part of any accountability measures in Wales. Even the use of the national Hwb platform is optional for schools. This goes some way to explaining the variation across schools in terms of their digital development, when they all have sight of the

same policies and guidance. The culture apparent in the two case studies is what triggers the importance of enacting these digital policies,

The community of practice approach could enable the culture of the school to adopt and integrate under the leadership of the headteacher, working as a collective. This grass roots growth and adoption is facilitated by all staff buying into the digital development, learning and growing together. Once an organisation-wide digital mindset has been established, communities of practice will ensure it is sustained and evolves beyond the formal directives and into the bespoke needs of the school's own community and context.

The DPLJ (Welsh Government, 2021) and the SLO Models (Welsh Government, 2020) could be ways to encourage a Communities of Practice approach, where the written statement does not define the practice. Both documents talk about a shared vision, professional learning and engaging with external partners. However, the method of achieving this is unclear and relies on the leadership style of the headteacher and senior team. Fostering a Community of Practice across a school would naturally lead to these aspects of both the DPLJ and the SLO models to exist without becoming another thing to do.

The fact that the writing and support for each different policy are segregated within central government and local authority means that the links may not be easily seen within schools. The enactment approach supports schools to integrate individual policy areas in an effective way, but tends to suggest each policy area as a separate aspect, whereas the addition of a Communities of Practice approach could lead to seeing how these policies interlink within the specific school context and are reified by the staff.

7.4 RECOMMENDATIONS FOR WIDER FUTURE RESEARCH

Further research is needed with secondary schools, to see how the additional role of delivering qualifications to learners can affect the enactment of a digital mindset by leaders. Additionally, a longitudinal study of schools who are at the start of developing a digital vision for their whole school would provide a rich data source from which to outline a model for other schools to build on.

Carrying out research around the use of communities of practice to support the development of a learning culture in the future is important as it is potentially linked to the Schools as Learning Organisations Model (Welsh Government, 2020). This method of informal, collaborative professional learning was a strong point in both case study schools and could potentially help to shape the work of future professional learning systems across Wales. This model is not limited to digital policy areas but could be explored alongside the progression of the Schools as Learning Organisations Model to promote effective enactment of all policy areas moving forward.

Finally, the importance of leadership has become apparent throughout this research, and more research needs to explore the relationship between leadership and the enactment of policy areas such as digital ones, that school leaders may feel that they have little technical knowledge or understanding of. The development of a school culture of learning and a willingness to embrace digital technologies requires further research in terms of how this can be 'taught' to new and existing school leaders in Wales. This could be through the development of the Digital Professional Learning Journey, or through existing leadership training programmes such as the NPQH (National Professional Qualification for Headship). From my data, one substantial reason these schools are digitally leading, seems to be down to the leaders they have, and the way in which they enact and embrace national policy and guidance with a digital lens. The understanding that digital in education is a game changer, for learners but also for staff, makes these schools stand out within the digital field.

7.5 CLOSING REMARKS – A NEW MODEL FOR DEPLOYING DIGITAL IN SCHOOLS

The following diagram (Figure 11) outlines the requirements that a school needs to enact digital policy, based on the themes and sub themes identified in this study.

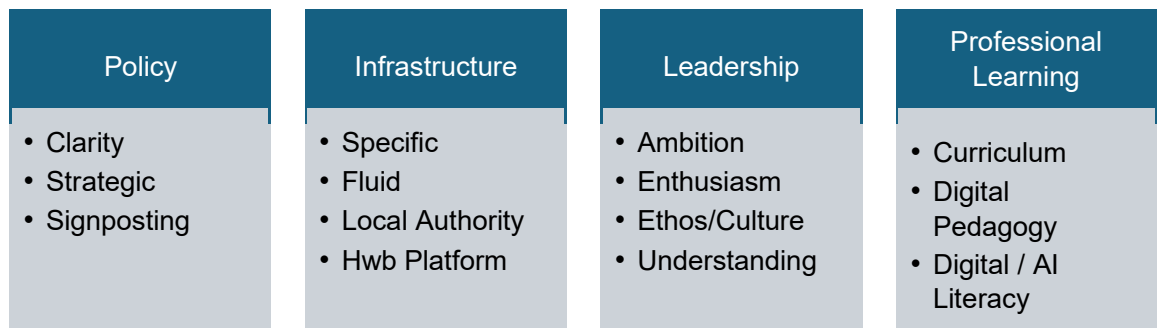


Figure 11 Elements required for a coherent national digital approach.

The first is that a national policy document must be clear, strategic and signpost all relevant and linked areas in a cohesive way. A single document that exists that all headteachers can understand and buy into for the creation of their own organisation-wide digital mindset.

The second is that the infrastructure must be both specific enough to prevent a digital divide, but also fluid enough to meet the needs of the school itself. Careful use of an evolving EdTech fund and the development of levels of national digital standards must be under a supporting role, not a dictating role, of the Hwb Platform and Local Authority.

Thirdly, and potentially the most dominant in this model is school leadership.

Ambitious, Enthusiastic and Understanding are three words that describe the feeling.

I had within both case study schools for the duration of my research. These three areas, along with an ethos or culture of collaboration and shared vision was what made those schools digitally leading.

Finally, the way to make the change itself is by investing in professional learning. A place for collegial, guided and prescriptive sessions but also the promotion of informal communities of practice around curriculum use, pedagogy and staff skills around digital and AI literacy is important.

This thesis has shown that all four sub themes are important in understanding the way in which policy and guidance around the use of digital tools and technologies are enacted in schools in Wales. The thesis has made suggestions as to how each of these sub-themes could be improved nationally, locally and at school level so that schools in Wales can become digitally leading learning organisations.

The role of school-based leaders has been emphasised throughout this research. There is a fundamental need for them to lead the vision and culture of digital in their schools, identify key staff, and adopt a community of practice-based approach to staff professional learning. National Policy and guidance can only take a country so far in any area. The will of those enacting these policies is what makes the difference. Schools in Wales can become digitally leading, but it will require collaboration, communication and collegiate action at school level, locally and nationally for this to become a reality. I am hopeful that through this research I have identified a refreshed starting point for this reality.

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9. APPENDICES

DATA COLLECTION SUMMARY

Data	Method	Sample	Timeline	Analysis
Elite	Online Semi Structured Interview	4 participants	Summer Term 2022	Transcribed, coded, thematic analysis
Data Collection Paused Academic Year 2022-23, schools returning to “normal” post Covid-19 measures and unavailable for research.				
Headteacher / Digital Lead	Face to Face Semi Structured Interview (1 online)	1 Headteachers / 1 Digital Lead per school (4 in total)	Spring Term 2024	Transcribed, coded, thematic analysis
Teaching Staff	Face to Face Semi Structured Group Interview	4 participants per school (8 in total)	Spring Term 2024	Transcribed, coded, thematic analysis
Non-Teaching Staff	Face to Face Semi Structured Group Interview	4 participants per school (8 in total)	Spring Term 2024	Transcribed, coded, thematic analysis
Documents	Online / Physical copies	Estyn Reports 360 Safe Reviews Internal Policies National Policies	Summer 2022 – Spring 2024	Coded, thematic analysis

INTERVIEW GUIDES

Elite Participants (Only 1,4,6,7,8,9,10 for consortia level participant)

1. Can you briefly outline for me? Your role in the development of a digital strategy for Wales and the time frame of those inputs. 2. What prompted the creation of a digital strategy for Wales? 3. What evidence, including that from other was used, was used to develop the design? 4. What stakeholders have been involved during the process of developing, implementing and reviewing the strategy? 5. What issues, challenges or sources of support were identified during the design and implementation stage? 6. In your opinion, what are the most crucial thing schools need schools need to get right in order to successfully implement the digital strategy? 7. What policies, does sources and sources of support are available for schools to develop and implement their own part of the National Digital Strategy? 8. In your opinion, are all schools expected to benefit from this be from this digital strategy or will school characteristics play a role in the implementation? 9. How can you see the national digital strategy over the next over the next 5 to 10 years? How will Wales know if it has been successful? 10. Is there anything else you would like to share about this topic that you think it is important for me to know? Are there any other people that I should speak to?
Headteachers / Digital Lead
1. Could you give me some background information about yourself? For example, how long you have taught, how long you've been at this school, what your current roles and responsibilities are. 2. How do you find leading digital skills in your school? What is your vision? 3. What are the main policies and guidance that you use to support this aspect of your role? 4. How do you plan for the integration of digital across classrooms, business administration and data analytics? 5. How do you lead on digital awareness in your school for staff, pupils and the wider community? 6. How confident are you that your staff can find and create and create digital content safely? 7. Do your staff have the required aid to need to do their job effectively? For example, devices, infrastructure and software? 8. Do your staff have a good understanding etiquette Netiquette? Online literacy and safety. 9. Where do you go for up-to-date support, guidance and developments. Around digital. 10. How do you plan for and manage any more future or future equity issues that you might see? 11. Anything else that I need to be aware of When looking at digital in your school.
Teachers / Support Staff (groups)

1. Could you start by introducing yourself and giving me a little background about your roles and responsibilities? And how long you have been at this school?
2. Tell me how you use did your specific or specific job role? And why you use that?
3. What are some of the benefits you feeling in using digital tools and techniques?
4. What are some of the barriers that you experience using digital? In school.
5. Tell me how you use online sources for the job role and what confidence you have with them.
6. Tell me if you and how you use digital for differentiation, support and personalization in your job role.
7. Would you consider yourself to have a good of netiquette knowledge of online safety?
8. Where do you find guidance for the port for the use of digital in your professional and personal life?
9. Do you feel that you have sufficient digital tools? to carry out your role?
10. How and where do you get any professional learning around digital skills for your role?
11. If you were leading a brand-new school, what are the three most important things that you would need in order to successfully become a digitally leading school?
12. Is there anything else that you want to tell me about digital in school?

CONSENT FORM

PARTICIPANT CONSENT FORM

Working title of research project: **How are policies and national strategies enacted in secondary schools to create digitally competent staff?**

SREC reference and committee: SREC/4071	Name of Principal Investigator: Rebekah Bawler
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Please Tick

I confirm that I have read the information sheet for the above research project.	
I confirm that I have understood the information sheet for the above research project and that I have had the opportunity to ask questions and that these have been answered satisfactorily.	
I understand that participation is voluntary and the school is free to withdraw at any time without giving a reason and without any adverse consequences (e.g. to medical care or legal rights, if relevant). I understand that if I withdraw, information about me that has already been obtained may be kept by Cardiff University.	
I understand that data collected during the research project may be looked at by individuals from Cardiff University or from regulatory authorities, where it is relevant to my taking part in the research project. I give permission for these individuals to have access to my data.	
I consent to the processing of my personal information [Name, Job Title] for the purposes explained to me. I understand that such information will be held in accordance with all applicable data protection legislation and in strict confidence, unless disclosure is required by law or professional obligation.	
I understand who access to personal information will have provided, how the data will be stored and what will happen to the data at the end of the research project.	
I understand that after the research project, anonymised data may be made publicly available via a data repository and may be used for purposes not related to this research project. I understand that it will not be possible to identify me from this data that is seen and used by other researchers, for ethically approved research projects, on the understanding that confidentiality will be maintained.	
I consent to being audio recorded/ video recorded for the purposes of the research project, and I understand how it will be used in the research.	
I understand that excerpts and/or verbatim quotes from my interview may be used as part of the research publication, and these will be anonymised	
I understand how the findings and results of the research project will be written up and published.	
I understand that all individual participants will also be asked to provide informed consent for each stage of data collection and this agreement does not supersede their individual right to withdraw at any point.	
I wish to take part in this research.	

Signed:

Date:

INFORMATION SHEET:

PARTICIPANT INFORMATION SHEET

How are policies and national strategies such as Wales as a Digital Nation enacted in secondary schools to create digitally competent staff and students?

You are being invited to take part in a research project. Before you decide whether or not to take part, it is important for you to understand why the research is being undertaken and what it will involve. Please take time to read the following information carefully and discuss it with others, if you wish.

Thank you for reading this.

1. What is the purpose of this research project?

I am conducting research into how policies and strategies such as Wales as a Digital Nation are enacted in schools and the challenges / opportunities that these policies offer schools. The research is the thesis stage of my EdD at Cardiff University.

2. Why have I been invited to take part?

You have been invited because you have been involved at the strategic and developmental level of Welsh government policy and/or supporting schools in their own development.

3. Do I have to take part?

No, your participation in this research project is entirely voluntary and it is up to you to decide whether or not to take part. If you decide to take part, I will discuss the research project with you and ask you to sign a consent form. If you decide not to take part, you do not have to explain your reasons, and it will not affect your legal rights. You are free to withdraw your consent to participate in the research project at any time, without giving a reason, even after signing the consent form.

4. What will taking part involve?

Participants are asked to complete an interview, either face to face or via an online platform. This interview will be recorded (for transcription purposes only) and is estimated to last no longer than one hour.

5. Will I be paid for taking part?

No. You should understand that any data you give will be as a gift and you will not benefit financially in the future.

6. What are the possible benefits of taking part?

There will be no direct benefits to taking part in this research for yourself, but your responses will be used to support the development of the next phase in this research which will be conducted in schools.

7. What are the possible risks of taking part?

There are no foreseeable risks to participation in this research

8. Will my taking part in this research project be kept confidential?

All information collected about you during the research project will be kept confidential and any personal information you provide will be managed in accordance with data protection legislation. Please see ‘What will happen to my Personal Data?’ (below) for further information.

9. What will happen to my Personal Data?

Personal data, according to the General Data Protection Regulation (GDPR) means any information relating to an identifiable living person who can be directly or indirectly identified by reference to an identifier. The data that will be collected, other than on your consent form, will include your name and job title (current and previous if relating to the timeframe of the work undertaken in this field). However, participants may request anonymisation of both of these details and will be referred to as “Elite participant” and a corresponding participant number. This option will be discussed with you should you agree to participate.

Cardiff University is the Data Controller and is committed to respecting and protecting your personal data in accordance with your expectations and Data Protection legislation. Further information about Data Protection, including:

- your rights
- the legal basis under which Cardiff University processes your personal data for research
- Cardiff University’s Data Protection Policy
- how to contact the Cardiff University Data Protection Officer - how to contact the Information Commissioner’s Office

may be found at <https://www.cardiff.ac.uk/public-information/policies-and-procedures/data><https://www.cardiff.ac.uk/public-information/policies-and-procedures/data-protection>

After 24 months, the researcher will anonymise all the personal data it has collected from, or about, you in connection with this research project, with the exception of your consent form. Your consent form will be retained in accordance with the University Records Retention Schedules and may be accessed by members of the research team and, where necessary, by members of the University’s governance and audit teams or by regulatory authorities. Anonymised information will be kept in accordance with the University Records Retention Schedules] but may be published in support of the research project and/or retained indefinitely, where it is likely to have continuing value for research purposes.

Data from participants who withdraw from the research will be, wherever possible, destroyed and not used in subsequent analysis. If analysis or publication has already taken place, then it will not be possible to remove data at this point.

10. What happens to the data at the end of the research project?

The data collected will not be shared with other institutions or researchers in its raw form, only completed and anonymised data will be available on request. Any paper or digital copies of raw data will be destroyed.

11. What will happen to the results of the research project?

The publication of the full findings is expected to be made available from 2024 following completion of the EdD thesis stage. It is my intention to publish the results of this research in academic journals and present findings at conferences or in other education publications during the writing stage and potentially prior to full completion of the thesis stage.

12. What if there is a problem?

If you wish to complain or have grounds for concerns about any aspect of the manner in which you have been approached or treated during the course of this research, please contact me in the first instance or my academic supervisor. (see contact details below)

If your complaint is not managed to your satisfaction, please contact Cardiff University School of Social Sciences Graduate Office (socsi-ethics@cardiff.ac.uk) who will be able to provide you with information.

If you are harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, you may have grounds for legal action, but you may have to pay for it.

13. Who is organising and funding this research project?

The research is organised by Becki Bawler, EdD Candidate, School of Social Sciences, Cardiff University. My academic supervisors are Professor Manuel Souto-Otero and Dr. Sion Jones.

14. Who has reviewed this research project?

This research project has been reviewed and has been approved by the School of Social Sciences Ethics Committee, Cardiff University.

15. Further information and contact details

Should you have any questions relating to this research project, you may contact me on the email below:

Becki Bawler bawlerre@cardiff.ac.uk