The Emerging Nature of ICT Policies in Education: A Comparative Analysis of School ICT Policies

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Abstract. Purpose- The role of ICT in education is not new but the manner in which technology in education is perceived, valued and implemented is in constant flux.

Methodology- This paper uses a comparative approach to examine ICT school policies, pre and post pandemic, to explore key issues of focus and relevance.

Findings- As a result of the Covid-19 pandemic, technology became ubiquitous in education and it is now imperative that we consider the extent to which it is appropriate for use, sustainable and supported. ICT has the potential to transform the learning environment but it must be understood, implemented and managed responsibly.

Implications- The paper looks at the role of leadership and key stakeholder engagement in this process, from a teacher and student perspective.

Originality/value- Drawing on a detailed literature review and in-depth document policy analysis, this paper considers the framework for implementation and identifies key components required for the design and development of a relevant ICT school policy.

Keywords: ICT · School Policy · Educational Technology

1 Introduction

Information and communication technology (ICT), a major component of modern life in the digital age and a knowledge-based society, is equally relevant in the field of education. ICT was widespread prior to the pandemic but was tailored and bespoke in its usage, with clear evidence of structural approaches and policies in place that focused on school internet access, and teacher training (Liu, Toki & Pange 2014).

There has been a lot of emphasis on advocating the use of ICT in education; in many nations, there have been various strategies and systems targeted at teachers and educators (Szyszka, Tomczyk & Kochanowicz 2022). Analysis of these developments must take into account context and capacity to determine the extent to which implementation is relevant and sustainable. This paper evaluates two institutional ICT policies within the British context. The two schools are Ysgol Treffynnon reviewed in October 2015 (pre-pandemic) and St. Helena Community College reviewed in November 2021 (latter

stages of the pandemic). Both policies have specific aims; including facilitating learning and providing opportunities for learners. This paper provides, in context, an analysis of the strengths and weaknesses of the two policies regarding stakeholders, teachers, and students' involvement.

2 Literature Review

ICT, appropriately implemented, can enhance the educational approach and reinforce the significance of education to the progressively digital workplace (Tinio 2003). In public educational organizations, ICT-centred programmes and educational techniques are being used to encourage practical experimental learning. Schools, and instructors are incorporating ICT in classrooms and other learning environments, encouraging learners to participate in individualised, group-based, online, and collaborative learning and develop new strategies for instruction and evaluation (Kozma 2008).

2.1 Educational Administration and Stakeholders

The administration of ICT works to guarantee that educational goals are achieved by making the best use of available infrastructure (Jacob, Jegede & Musa 2020). There is a requirement, however, to work with teachers in order to ensure successful implementation and this involves revising policies to take advantage of the latest technologies. To evaluate the applicability, relevance, and clarity of the ICT policy, regular stakeholder input is required.

Policymaking and system designing, recruitment and expansion, curriculum improvement and educational programmes, student staff management, and curriculum progress, are among the fundamental duties of the educational administration (Ilgaz & Gülbahar, 2015). Being excluded from the policy-making procedure can cause stakeholders to lose interest in the process of developing policies or putting them into action (Castro Sánchez & Alemán, 2011).

It is imperative to expand the application of ICT in education through both team-based education and administrative assistance. However, teachers' enthusiasm to digitise their teaching, often relies on leadership and active support for the use of new media in the classroom. Multivariate regression analysis revealed that positive managerial support was a critical component in promoting the application of ICT in education (Szyszka, Tomczyk & Kochanowicz 2022). Therefore, educational administrators must offer their educators noticeable support to help stimulate the implementation of ICT in classrooms.

For ICT to be successfully implemented in the classroom, the school's organizational formation must be altered to promote technology application across subject, department, and school borders (Al Mofarreh 2016). It is crucial to create framework conditions that enable teachers to integrate technology into their daily school assignments and ensure leadership awareness. These involve peer learning, a collective preparation period, and collaborative work. This is essential since teachers need to track students' progress and assess their performance (Al Mofarreh 2016). Policies should include a clear description of evaluation and assessment procedures as this is a continuous process (Al Mofarreh 2016).

COVID-19's abrupt shift to online instruction established the ultimate circumstances for governments to acknowledge the advantages of Emergency Remote Teaching (ERT) and consider ways to enhance ICT policies. The outdated rules for traditional educational environments do not provide a suitable set of knowledge and abilities for the digital learning world (Choi, Chung & Ko 2021). As a result, coaching for digital proficiency must not merely emphasise overall technological understanding but include hands-on instruction for coping with online schooling and learning tools.

To sustain improvement in teaching, the integration procedure should be facilitated along with the improvement of ICT organisation and plans for professional development of educators. Schools often embark on the preparation procedure for ICT by creating and establishing schools' ICT structure, attempting to match curricular needs to the infrastructure, and then launching professional development plans (Al Mofarreh 2016). Schools are therefore encouraged to incorporate technology into all areas and levels of learning. Once this is done, students can use technology to achieve higher levels of perception in particular learning environments (Fu 2013).

2.2 Teachers

ICT can offer a platform for educators to implement and create various methods to improve learning environments (Ngao, Sang & Kihwele 2022). ICT can help transform a teaching environment from teacher-centred to student-centred. Since learners in ICT classrooms are enthusiastically engaged in the learning process, the teacher empowers them to make decisions and becomes the facilitator in class. As a result, ICT broadens educational scopes and options for students and teachers (Fu 2013).

Teachers' digital competencies also need to take into account flexible approaches toward applying technology, as evidenced by unforeseen events like compliance and awareness of exterior environments, such as the COVID-19 outbreak (Choi, Chung & Ko 2021). ERT shows how teachers' responsibilities in digital environments have changed over time; today's teachers are held accountable for students' development in many areas.

Qualified teachers have access to a wide variety of teaching and learning resources offering new prospects and demands for both educators and pupils to transform the data into useful knowledge to preserve, comprehend and share in a supportive learning atmosphere (Jacob, Jegede & Musa 2020). Through its application for lesson planning, guided approach, and teaching and learning assessment, ICT in schools can reduce teacher work load. Instead of merely dispensing information, teachers will take on new roles as learning facilitators, collaborators, coaches, mentors, knowledge navigators, and co-learners (Jacob, Jegede & Musa 2020). Teachers need more creativity in adapting and customizing their teaching materials. A teacher should use ICT more creatively and productively to design more engaging and demanding activities and more efficient teaching. Ilgaz and Gulbahar (2015) argued that providing schools with technology would not enhance the value of instruction if teachers lacked the skills to utilise them efficiently.

ICT integration takes place when teachers are aware of how ICT is used and how it is taught in the classroom (Al Mofarreh 2016). Because increasing digital literacy guarantees the constant application of ICT in education, teacher educators must revise

their digital abilities. As a result of the technological transformation, there are now numerous ICT-associated systems, software, and appliances that need to be learned to improve teachers' learning and comfort in employing them in the classroom. Teachers who have been in the educational field before the surge of technology tend to prefer more traditional teaching methods and are less prone to apply technology inside their classrooms. Additionally, teachers and other stakeholders may have personal characteristics that either hinder or facilitate ICT incorporation. Older professionals may struggle due to age (Al Mofarreh 2016). If the right resources are appropriately used, learning can be both simple, fun, and engaging. Thus, ICT coaching must include self-instructed techniques that enable teachers to fully comprehend the advantages of ICT in alignment with their teaching styles. This might involve making use of the available technology, such as online development courses.

2.3   Students

ICT incorporation enables students to retrieve massive amounts of content accessible online. By carefully choosing the right resources, it is less likely that students will have access to fake materials that could compromise their ability to learn (Ngao, Sang & Kihwele 2022). Furthermore, ICT provides students with the tools they need to face social, academic, and professional needs as the world shifts into the digital era (Al Mofarreh 2016). Such an environment requires new skills and knowledge necessary for individual and career development.

Learners must acquire certain fundamental technical competencies to take advantage of online learning (Ilgaz & Gülbahar 2015). Students use ICT to uncover learning topics, unravel questions, and offer explanations to challenges encountered during the learning process. ICT facilitates knowledge achievement and concept understanding in learning areas by engaging students (Fu, 2013). It offers additional innovative explanations for various styles of learning inquiries but students must possess the necessary ICT participation abilities to accomplish this (Al Mofarreh 2016). ICT can improve students' independence, skills, and creativity. It is changing the traditional teacher-centric approach. Extended exposure to an ICT environment can enhance students' critical thinking skills.

Technology is viewed as key to potential student learning outcomes as well as preparing students for a progressively more digital world. Liao et al. (2017), for instance, show that applying technology to assist student learning progresses will groom them for the digital world.

3   Methodology

This paper adopts a comparative analysis approach, underpinned by document analysis. This study explores the use of ICT policies in two schools within the British context: Treffynnon and St. Helena Community College. The researchers intentionally selected a policy reviewed before the pandemic and one reviewed during the pandemic. This study examines three aspects: Leadership team involvement, teachers' involvement, and students' involvement.

4 Findings

Ysgol Treffynnon's ICT policy was adopted on October 1st, 2014, and reviewed on October 1st, 2015. St. Helena produced and reviewed its ICT policy in November 2021. Both institutions offer chances to their pupils to learn how to utilise ICT safely and constructively in the classrooms.

Ysgol Treffynnon's the overall aim is for ICT to deepen learning for all learners and guarantee that teachers are competent and confident to apply ICT effectively in their classrooms, and aid students to develop their ICT skills. Since ICT is a core subject and the school's target is to facilitate technology use, the school provides four venues across the premises and a supplementary suite in the ICT department. Moreover, there is a small suite for private study, and "Free" slots available upon booking.

St. Helena's ICT policy aim is for all consumers of ICT to understand and consent to the attempt to develop ICT skills, clarify its outlook, ensure uniformity in application, and apply it securely. ICT coordinators aim to create lifelong learners. At St. Helena, the policy states that it has only one limitation which is bandwidth problems. They aim to help all staff use suitable and practical sources as tools for learning.

The schools are aware of the significance of ICT to evaluate, share, and present information wisely and positively. Both have been supplied with computers, tablets, printers, scanners, digital cameras and videos, and smartboards that all have access to the internet.

4.1 Leadership Team Involvement

School administration in both institutions play a pivotal role in providing adequate technological tools to staff and students. They also provide necessary workshops to enable integration of technology into the learning process.

Ysgol Treffynnon's ICT leadership team reviews the policy holistically every three years. Technology is used effectively at the school to enable access to both staff and students. The school's administration network allows staff to retrieve electronically students' data, timetable, and attendance. The policy design includes a section for security and health and safety measurement while students use any means of technology at school. It provides a secure and reliable online atmosphere through purified internet entry. The school acknowledges the significance of spreading awareness of online safety. Learners are held responsible when using ICT and the leadership team monitors its application in the institution.

Stakeholders provide a safe online environment through purified internet admission. Furthermore, the policy states that the leadership team provides an annual budget for maintenance, equipment, and any network services. The ICT department is responsible for erasing data on any discarded equipment. To ensure the comprehensive removal of data, the school is registered with the Environment Agency as a Generator of Hazardous Waste.

St. Helena's ICT policy is designed to notify, and guide current and new staff members and parents. The board of directors is active in developing opportunities to access ICT. The leadership team is involved in providing powerful resources to help facilitate

learning and track students' performance. Subject coordinators embed ICT in the curriculum. It is a subject that is taught at all levels. Furthermore, the leadership team ensures that ICT is at the front of all schemes and that ICT is granted primacy in the budgeting procedure. They provide modernized supplies and keep all staff up to date with new development. Moreover, they supervise the curriculum related to technology and solve any problems that they face. The ICT Data manager takes full responsibility for directing the application of ICT among all stakeholders. The leadership team ensures health and safety while using ICT by taking all necessary measurements remotely or on campus. Apart from providing training sessions, the leadership team encourages staff members to self-develop their skills in technology. They also provide them with experts when they need any support. The stakeholders provide a School Information Management System (SIMS) that efficiently monitors students, class sections, and grades. Reports can be made based on several factors, such as attendance, progress, and target grades. The leadership team acknowledges the advantages of using ICT for children with special educational needs.

4.2 Teachers Involvement

In Ysgol Treffynnon, staff are involved in the new developments of ICT. Teachers attend programmes to update on new advances. They annually take part in the school improvement plan, related to technology. All staff members are aware of logging flaws and applications of the Internet/email. All teachers have access to trustworthy hardware and software so they can use ICT efficiently. Teachers integrate ICT into their lessons to enhance learning. All teachers can log in through the school's Curriculum system to their data fields, combined data, and applications. Teachers record and report students' assessment results digitally. Teachers are asked to build their teaching supplies to cater to students' learning difficulties. Since ICT is embedded in the curriculum and students take it as a course, ICT teachers in stage three meet annually to evaluate students' assessment results in technology. Once every three years, teachers review the policy to make necessary adjustments.

At St. Helena, all staff members are trained to develop their ICT skills. Trainees and current teachers can study through the school's partnership with TES and earn an International Postgraduate Certificate in Education. Teaching assistants can access distance learning courses through overseas providers. Moreover, the use of ICT makes further opportunities for Continuing Professional Development (CPD) accessible. Furthermore, educators are kept up to date with the latest developments in technology. Teachers are required to read and consent to the IT policy and sign the IT User Agreement before being granted entry. They have access to their password-protected workplace. Every teacher is responsible for maintaining the security of the assigned ICT resources. The school's password-protected network provides access to shared data and personal data areas for all staff users.

4.3 Students Involvement

In Ysgol Treffynnon, students with special needs also benefit from using technology to support them since ICT addresses their individual needs, improves their language skills,

and increases their access to the curriculum. The ICT policy addresses and involves students with determination by catering to their needs and abilities. Students are responsible digital citizens who are expected to use technology wisely to serve their learning. All learners have access to trustworthy hardware and software, so they can use ICT competently and for employing teaching and learning tools.

At St. Helena, students have access to a wider curriculum using Distance Learning opportunities. Netbooks are available to students, enabling autonomous research or assistance for lessons that call for ICT access outside of the ICT labs. All students, of different races or gender, have the chance to improve their ICT skills. Learners who have computers at home are motivated to utilize them for educational purposes. Students are accountable to certify that they use ICT in a secure and liable manner for the constructive advantage of their knowledge and overall growth.

5   Discussion of the Results

Based on the evidence above, not all classrooms are equipped with a digital projector and interactive whiteboard in Ysgol Treffynnon. The school plans to install them in every classroom in the coming years. On the other hand, in St. Helena, the institution is fully equipped with technological tools. Although St. Helena provides its staff members and students with all the necessary facilities, it charges them a nominal fee per hourly use in some of its computer labs. Both policies are well designed; however, St. Helena includes appendixes to clarify precisely how technology is utilized. In one of its appendixes (Generic Skills to be embedded within strands), the policy states possible developmental areas, indicating institutional awareness of its weaknesses. Ysgol Treffynnon's ICT policy also includes two appendices, stating teacher involvement in technology. They both provide training for all staff members and follow up on the matter.

6   Conclusion

This study analysed and compared correlated research evidence on ICT usage in education in both institutions. Both policies are well-designed and clearly explain the use of ICT in both institutions. According to the facts, it was found that both schools Ysgol Treffynnon and St. Helena have made great improvements in the practice of ICT application in education. Technology is embedded in their curriculum. However, they do not state the limitations they face in their classrooms. For instance, what are specific methods that teachers employ concerning classroom management to teach with technology? The policies do not mention the attitude of the students while using technology. How do teachers cope with the mishandling of technology inside the classrooms? How can they monitor students' application of technology inside the classroom? Teachers' planning might be hindered if students' application of technology is not monitored.

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