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Evaluating the Importance of ICT in Education and its Integration into Fiji's Educational Framework

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Abstract

The process of globalization has led to the interconnection of cultural, economic, political, and social processes across national boundaries, resulting in significant global changes in the 21st century. These changes have led to pressing global issues such as population change, global warming, food security, disaster prevention, water scarcity, and energy concerns. In response to these challenges, Information and Communication Technology (ICT) has emerged as a powerful tool for addressing global issues, particularly in the education sector. This article evaluates the importance of ICT in education and assesses the integration of ICT policies into Fiji's educational framework. The article explores the benefits of the implementation of ICT in education, such as improved teaching methods, improved learning experiences, and increased student creativity. However, the article also discusses the challenges of infrastructure, teacher training, and policy development. The study emphasizes the need for effective ICT policies in education to create a knowledge-based society, empower students and teachers, and prepare future generations to meet the demands of a globalized world.

Keywords: *Information and communication technology (ICT), globalization, ICT in education, educational policies, policy development and implementation.*

Introduction

The demands of the 21st century necessitate extensive adjustments on a global scale, which have far-reaching effects on individuals' lives. These changes are directly related to the globalization process, which involves the creation of cultural, economic, political, and social connections and processes that transcend national boundaries (Eriksen, 2020). According to Hebron and Stack (2016), globalization entails the progression of various processes, including migration, technological development, colonization, trade expansion, and other alterations that have occurred throughout human history. These changes have consequences for individuals, society, and the nation as a whole (Mensah, 2019).

Globalization presents significant challenges and changes to developing organizations and human institutions in the modern era (Chand, 2014). Global issues such as population change, global warming, food security, disaster prevention, water shortages, and energy have become critical concerns as the global environment undergoes dramatic changes (Scott et al., 2015). These issues affect the community, the environment, political, economic and social crises. Yatsenko et al. (2018) postulate that global issues impact the environment, economies, human capabilities, and decision-making processes, posing catastrophic threats to society and the nation as a whole.

The rapid globalization of the world's economies is fundamentally predicated on the ongoing advancement of technologies. The development of technologies can significantly reduce the cost of global issues and make the globalization of the economy feasible. Ajayi (2009) defines ICT as a means of collecting, collating and transmitting information, which serves as a catalyst for change in scientific research, working conditions, learning approaches, instructional methods, information exchange, and access to ICT. Through the strategic use of ICT, there is a tremendous opportunity to discover innovative solutions to domestic and international problems. Cooperation between nations through ICT policies is necessary to address global issues.

In the 21st century, it is imperative that a progressive global ICT policy be established in order to unify the world. The aim of globalization policy development is to bring about substantial improvements in people's living conditions, including housing for all, education, poverty eradication, and gender- and race-sensitive equality. According to Enrique Hinostroza (2017), policies play a significant role in determining how nations take advantage of available technological opportunities and use them for beneficial purposes. ICT policies are essential to encourage investment in ICT industries and facilitate developments that stimulate the national economy. Asongu and Odhiambo (2019) emphasized that countries must implement comprehensive ICT policies, plans, and strategies to achieve a necessary knowledge-based economic and social transformation. ICT policy ensures proper information planning, efficient provision of telecommunication networks, and dissemination of information to all sectors of the nation. Similarly, the education sector requires an ICT policy to effectively integrate ICT into teaching and learning processes. This article critically examines the importance of ICT in education, the educational policies in Fiji

that incorporate ICT, and the impact of ICT on policy development.

Importance of ICT in Education

The application of ICTs in education has the potential to significantly enhance the quality of educational opportunities for all. As Zafar (2019) suggests, ICT in education is a method of imparting knowledge that utilizes technologies to improve, support and optimize information delivery. The integration of ICTs in the education system is essential to transform learning and teaching approaches and enable students to acquire and apply the necessary 21st century skills in the digital age. Interactive multimedia and the Internet, which are key ICTs, are a significant aspect of future education and it is crucial to integrate them effectively into the formal curriculum. A variety of ICT tools are used in schools' curricula to create, communicate, store, disseminate, and manage information (Suleiman et al., 2020). The use of ICT has become an integral part of the teaching-learning interaction, enabling more interactive exercises, facilitating a shift from teacher-centred to learner-centred teaching, and empowering students to participate in information processing. Moreover, ICT allows teachers to challenge students' thinking and understanding, as it provides quick and easy access to current and extensive information.

The implementation of extensive information could lead to modifications in content and teaching methods. Sharma et al. (2011) highlighted that incorporating ICT into teaching and learning processes results in changes in both content and methodology. The integration of ICT into the classroom allows teachers to alter their teaching practices and content, as technologies enable the learning process to be more creative, engaging, and authentic. However, changes in teaching practices and content also result in various challenges, and ICT is perceived as a means to overcome these obstacles. Adeoye et al. (2013) suggested that ICT in education serves as a change agent to address teaching and learning challenges in economic competitiveness. As agents of change, ICT facilitates modifications in the methods, content, quality, and quantity of teaching and learning, reducing the workload of the teacher. By reducing workload, teachers can plan and prepare interactive lessons that incorporate ICT, and the ICT policy would serve as a guide for effective teaching and learning processes.

Policy Development and Implementation

Improving educational outcomes requires effective planning and development (Chand et al., 2016). According to Viennet and Pont (2017), policy refers to a plan established by higher authorities and implemented by education professionals. It is essential to review, strengthen, and implement policies to achieve educational goals. Implementing education policy involves putting ideas into practice to change individuals' level of understanding (Fullan, 2015). This implementation involves a change aimed at carrying out explicit policies in practice, which may affect the educational system. Strengthening planning and implementing national policies is crucial in meeting global challenges.

The education sector plays an essential role in incorporating ICT into the national policy plan to mitigate growing educational challenges. As stated by Sipilä (2014), the integration of ICT into education requires a structured guideline that provides a standard framework for the decisions and actions to be taken. A systematic policy framework is critical to effectively integrating ICTs in the education system (Bassi, 2011). A similar view is shared by Enrique Hinostroza (2017) that, for effective use of ICT in the classroom, its practice must be part of the school's vision and supported by national policies and strategies. A national vision sets direction, aid, and guidelines for countries to prioritize initiating and implementing ICTs in the school system (Peeraer & Van Petegem, 2012). National policy provides the structure for governments to promote the national vision and the foundation for legislation and regulation through which policy is implemented in schools.

An effective national policy must be established to facilitate the planning, implementation, and monitoring process. Judicious incorporation of ICT in education, accompanied by comprehensive planning and policies, is instrumental in the promotion of innovative tools for teaching and learning. The use of innovative technological tools in educational institutions cultivates creative and lifelong learners, which contributes to the development of a productive workforce. Therefore, it is imperative to harmonize ICT with educational policies to enhance overall performance.

Educational Policies in Fiji that Incorporate ICT Approaches

Education policies in Fiji have embraced ICT to produce individuals with informed skills and competencies. This is aligned with the goal of creating a globally competitive society that can meet the demands of the workforce. By incorporating technology into the educational method, students can learn more effectively and enter the workforce with greater ease (Ahmad, 2015).

Fiji has also integrated ICT into its education system to produce creative and digitally literate students. The country has introduced a web-based learning system that allows video conferencing, live lectures, and discussion forums via email (McKimm et al., 2003; Narciss et al., 2007). Web-based learning is an online service that uses the internet as an instruction delivery instrument to facilitate various learning activities. It provides access to a large amount of educational information that can be accessed as needed.

The Ministry of Education (MoE) anticipates that relevant authorities will have access to various resources for educational needs through its website. Wuryaningsih et al. (2019) stated that web-based learning has a positive impact on teachers and students and explores new dimensions of learning through innovative resources. Educational resources such as reading materials, exam papers, circulars, policies, and frameworks are readily available online. E-learning is incorporated into the Fiji education system to transform various styles of learning provided to students. Jethro et al. (2012) argued that e-learning is crucial for educational progress and improving the teaching and learning process. It enables teachers, students, and parents to access massive amounts of online educational information through digital methods. However, there are issues related to the use of Web learning, particularly in rural and maritime schools that lack connectivity to the network and electricity services (Chand et al., 2022).

Institutions must have robust information management systems to efficiently collect and record educational data. According to Robertson (2005), information management serves to control

and disseminate data on the effectiveness of institutions. The appropriate knowledge and information allow stakeholders to enhance education in Fiji classrooms. In 2013, the MoE introduced the Fiji Education Management Information System (FEMIS) policy to improve and facilitate the collection of data from Fiji schools in a timely and efficient manner. FEMIS is designed to ensure accurate and transparent data collection and entries. With the increased accessibility of technology in the education system, personalized learning and organized lessons are now possible, creating interactive experiences for students. The MoE is working closely with educational institutions to ensure access to FEMIS information through consultation with relevant authorities.

Although special training has been provided to school heads and administrative officers (AO) through workshops, not all members of the institutions have received such training. Professional Development (PD) sessions are not conducted in schools, resulting in confusion when new features are introduced in FEMIS. The repeated data entry required can pose challenges to teachers and administrative officers in meeting deadlines, ultimately affecting the dissemination of quality lessons.

Integration of ICT in the delivery of quality lessons has the potential to empower students to achieve high achievement, ultimately leading to entry into the global workforce. Investment in ICT in school curricula has the potential to benefit society as a whole (Livingstone, 2015). Effective academic performance leads to better employment opportunities. The Fiji National Curriculum Framework (FNCF) provides guidance for the curriculum and defines the purpose of education in the Fiji Islands (MoE, 2013). The FNCF has established a platform for students to acquire fundamental computer skills from years 1 to 8, and computer studies are taught as a subject from years 11 to 13. However, this excludes students who do not select computer science as their main subject, particularly those in rural and maritime schools. As a result, teachers have had to resort to various methods to provide technologically based learning opportunities to enhance students' learning experiences.

Incorporating ICT into education has led to the development of smart classrooms where teachers and students engage in interactive and innovative learning experiences. Interactive classroom technology supports digital means that facilitate interactive teaching and learning (McKnight et al., 2016). This technological advancement has led to pedagogical changes and improved student achievement. The widespread use of technological assets such as smart boards, multimedia projectors, intercom, mobile phones, tablets, desktops, computers, and laptops in Fiji classrooms has allowed students to explore new dimensions of learning. However, the lack of adequate training and essential skills among teachers has hindered the effective implementation of interactive classroom learning modes. Therefore, teachers should acquire these skills to promote a technological learning environment.

Furthermore, the MoE initiated the introduction of one laptop per child (OLPC) in 2007, which was piloted in primary schools in 2008. However, this approach was unsuccessful due to budgetary constraints and inadequate resources such as multimedia projectors, computer labs, laptops and computers that hinder the integration of ICT in the education system. Additionally, WiFi connection is an issue in schools that do not provide it in classrooms. Teachers use personal data, which discourages them from using technological approaches.

The MoE has implemented a programme called "Phonics by Phone," which allows teachers to deliver phonics lessons and assess and record student learning using mobile technology. The use of mobile technology in primary schools is highly recommended as part of digital learning to succeed in the technological world. However, the MoE has established a policy restricting teachers from using mobile phones during lesson hours. This policy has created confusing and misleading information about the use of mobile phones in Fiji's primary classrooms, as it requires teachers to turn off their mobile phones during teaching hours. Furthermore, the Fiji education system has not yet developed an ICT policy for primary schools.

Impact of ICT - Policy Development and Implementation

The use of ICT in the educational system has numerous benefits both for teachers and learners. Implementing ICT policy in education plays a crucial role in introducing ICT literacy into the curriculum. Previously, the ICT policy in education enabled students to learn about operating technological equipment and common productivity software (Kamel et al., 2007). As ICT becomes increasingly embedded in classrooms and schools, the curricular emphasis shifts towards integrating ICT throughout the curriculum. ICT policies serve as a guide to ensure that technological approaches are implemented in classrooms.

A critical aspect of ICT in education policies is the implementation of ICT-related changes. The initial application of ICT in classrooms involved tutorial strategies that promoted information memorization and used simple measures associated with traditional pedagogy. However, current ICT policies in education involve more innovative applications that engage students in collaborative learning (Monaco & Martin, 2007). Pedagogical changes enable students to participate in collaborative tasks to solve real-world problems and deepen their knowledge and skills. ICT in education creates a knowledge-building environment that develops student-teacher interaction, generates innovative ideas, and extends the application of new pedagogies (Tan et al., 2021). The pedagogical role of teachers explicitly supports the modelling of social and cognitive processes (Keller et al., 2016; Szeto, 2015). Implementing innovative pedagogies to improve the standard requires guidelines to support ICT innovations. Despite the growing demand for ICT in education, some limitations hinder policy development and implementation.

Transformation within organizations necessitates significant changes in education, which presents various challenges in the implementation of education policy. Dialoke et al. (2017) emphasized the issue of inadequate stakeholder engagement during policy implementation. Similarly, inappropriate policy planning and design without effective management, neglect of rural areas, and policies imposed without considering the needs of people further exacerbate the challenges (Ggoobi, 2016). The absence of relevant human capacity in the policy development process hinders the achievement of the educational policy objectives and vision.

The policy outlines the aspirations and vision of an educational system, along with a set of principles to achieve identified goals (Lubis & Hanum, 2020). ICT policy comprises planned actions that provide anticipated goals, vision, and practices for ICT

programmes. Although the government possesses the authority to make decisions on behalf of stakeholders in the ICT policy-making process, it does not consider the input of nongovernmental participants who implement ICT in education. Policymakers often overlook the fact that policies can only be effectively achieved by setting realistic and feasible goals. Consequently, the lack of involvement of policy implementers in developing the educational policy can lead to resistance to these policies.

Recommendations

The government must establish comprehensive policies and plans for the incorporation of ICTs in education. These policies should be developed in collaboration with relevant authorities and experts to ensure their successful implementation.

To effectively utilize technological expertise in teaching and learning, teachers must participate in regular and extensive professional development (PD) sessions. These training programmes will equip teachers with the skills necessary to integrate ICT tools proficiently in the classroom, thereby enhancing student learning experiences.

Investing in the necessary technological tools and infrastructure is crucial to fully adopt ICT in education. Higher education institutions must be equipped with advanced computer labs and other necessary resources to enable students and teachers to maximize ICT resources.

Integrating ICT into the classroom can promote student participation in the learning process. By incorporating interactive and creative learning methods using ICT, students are more likely to actively engage with educational content and improve their overall learning outcomes.

The integration of ICT in education should aim to enhance creativity and the quality of education. By innovatively using technology, teachers can create enhanced and interactive learning environments that promote a deeper understanding of the subject matter.

Conclusion

In the 21st century, the profound impacts of globalisation have brought significant transformations and challenges to societies around the world. As pressing global issues, such as population change, climate change, food security, and energy demands, continue to escalate, there is an urgent need for innovative solutions. ICT has emerged as a powerful tool for addressing these complex problems on a global scale.

To prepare people for the digital age, incorporating ICT into education is crucial. This equips students with 21st-century skills, fosters interactive and engaging learning experiences, and provides opportunities for personalised learning. Moreover, ICT facilitates pedagogical modifications that shift the focus from information memorisation to collaborative learning and problem solving. To achieve maximum impact, comprehensive ICT policies must be developed and implemented in education. These policies should be meticulously planned with the participation of relevant stakeholders and aligned with the national education vision. Adequate investment in infrastructure and teacher training is essential for successful integration of ICT tools into classrooms.

Fiji, along with many other countries, has taken steps to integrate ICT into its education system through initiatives such as Web-based learning, one laptop per child, and the Fiji Education Management Information System. However, challenges remain, including connectivity issues in rural areas, relevant teacher training, and policies that involve all key stakeholders.

To move forward, Fiji and other countries should prioritise the formulation and implementation of effective ICT education policies. By doing so, they can cultivate an innovative and digitally literate generation capable of thriving in the global workforce and contributing to the sustainable development of their respective nations. The world can progress toward a more interconnected and knowledge-based future through the effective application of ICT.

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