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Status of ICT in Education in Fiji

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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.

Acknowledgements
This report was prepared by Professor Bibhya Sharma, The University of the South Pacific, on behalf of the Commonwealth of Learning, and under the active supervision of Dr Sanjaya Mishra, COL's Education Specialist (Technology-Enabled Learning). It is part of the support COL is providing to Fiji's Ministry of Education (MOE) to develop a policy on ICT in education. Thanks are due to the support received from COL Focal Point Mr Vilitati Togavou, the MOE, and other colleagues, including Mr Ravindra Rai, Ms Poonam Singh, Isoa Tauribau, and Apisalome Tamani. Professor Sharma would also like to thank Dr Pritika Reddy and Ms Deepika Lal for their support in preparing this report.

Published by:

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EXECUTIVE SUMMARY

Integrating information and communications technology (ICT) into the education landscape has become important due to ICT's potential to transform learning and teaching by providing digital tools and resources that offer interactive and enhanced learning experiences and outcomes and, in general, efficient management and administration of the education sector. ICT integration also promotes innovative teaching practices and a more personalised learning environment for students. It enables students to be equipped with the relevant digital skills and knowledge to be ready for an ICT-driven job market and contribute to sustainable economies. It also helps school managers and administrators maintain proficiency in using digital tools and resources in schools at all levels.

Fiji is one of the most developed countries in the South Pacific in terms of its Internet infrastructure, device ownership, and educational facilities. This report seeks to gather insights from an empirical analysis of survey-based responses from teachers and relevant stakeholders on the availability and use of digital tools and resources, existing ICT strategies and policies, and training and development provided to students, teachers, and management.

Analysis of the data gathered from the survey shows that many schools in Fiji have access to digital tools such as devices, the Internet, and computer labs. At the same time, some schools in the rural and remote areas of Fiji still lack equitable access to such tools and hands-on practice. The survey responses also indicate that, together with the lack of digital tools and resources, appropriate training for students and staff and stable Internet connections remain persistent challenges for most rural, remote, and even urban schools in Fiji.

Despite these challenges, teachers in many schools promote and encourage using ICT tools for learning: they either use them for teaching or ask students to use digital tools and resources to complete their assignments; include them in their discussions; or create and share engaging content. The survey responses also highlight disparities in the distribution of ICT resources by Fiji's Ministry of Education (MOE), despite the ministry's advocacy for ICT-driven learning for all the country's schools. Moreover, teachers suggested that the curriculum needs to be converted to an online format by existing teachers or expert consultants. The online version of the school curriculum is meant to be stored at a central MOE location so that the resources are accessible to all teachers across the country. Equitable access to ICT resources for all schools, along with appropriate access to and implementation of the curriculum by teachers, will help bring about quality education in Fiji.

In collaboration with relevant stakeholders, the MOE needs to align its ICT development and implementation strategy to overcome the current challenges most schools face. An ICT in education policy is needed so that the education sector in Fiji has guidelines for seamlessly integrating digital tools and resources into learning, nourishing ICT pedagogies, and managing the overall education system.

ABBREVIATIONS

AI	artificial intelligence
CEIC	Committee on Electronic Information and Communication
CPD	continuous professional development
ECCE	early childhood care and education
ECE	early childhood education
ESCAP	Economic and Social Commission for Asia and the Pacific
FALD	foundation areas of learning and development
FEG	free education grant
FEMIS	Fiji Education Management Information System
FNCF	Fiji National Curriculum Framework
FNQF	Fiji National Qualifications Framework
FNU	Fiji National University
HEC	Higher Education Commission
HEI	higher education institution
ICT	information and communication technologies
ITC	information technology and computing services
ISPs	Internet service providers
ITU	International Telecommunication Union
KLA	key learning areas
LANA	language and numeracy assessment
MOE	Ministry of Education
NCF	National Curriculum Framework
OER	open education resources
PacREF	Pacific Regional Education Framework
PICs	Pacific island countries
STEM	science, technology, engineering, and mathematics
TDGS	Tonga Digital Government Strategic Framework
TESP	Tuvalu Education Sector Plan
TVET	technical and vocational education and training
UN	United Nations
UNOPS	United Nations Office for Project Services
USAID	United States Agency for International Development
USP	The University of the South Pacific

DEFINITIONS OF TERMS

The definitions given below are adopted from different online sources and used in the context of this report.

Access: "This is an individual's unrestricted ability, right, or permission to locate and use of an information and communication technology device such as computers, mobile phones, the internet and the likes for the receipt, processing, storage, retrieval, consumption, and dissemination of information" (Umukoro et al., 2021).

Assistive technology: "Devices for people with disabilities while also including the process used in selecting, locating and using them. Refers to tools and technologies that assist with full participation of an individual in various activities, including, but not limited to learning. Assistive technologies in the context of learning may include specialised computer software and hardware that increase mobility, hearing, vision, or communication capacities of people with disabilities" (World Health Organization, 2024).

Cybersecurity: "The practice of protecting computer systems, networks, and data from digital attacks. Prevention of damage to, protection of, and restoration of computers, electronic communications systems, electronic communications services, wire communication, and electronic communication, including information contained therein, to ensure its availability, integrity, authentication, confidentiality, and nonrepudiation" (Computer Security Resource Center, 2024).

Digital learning resources: "Materials included in the context of a curriculum that support the learner's achievement of the intended learning objectives. These materials include but are not limited to graphics, images or photos, audio and videos, simulations, animations and programmed learning modules. Digital learning resources include digitally formatted educational materials like graphics, images or photos, audio and video, simulations and animation technologies, that are used to support students to achieve their learning outcomes" (Elwood et al., 2022, p. 3).

Digital literacy: "The ability to effectively navigate, evaluate, and create information using digital technologies. An individual's ability to use digital information and relevant technologies to find, evaluate, create and communicate information" (Reddy et al., 2022, p. 86). This type of literacy requires cognitive and technical skills.

Disability disaggregation package: "In the context of Fiji — a package that collects data in relation to the type and severity of disability, accessibility of school infrastructure and transport, and qualifications and training of school staff in relation to disability-inclusive education" (Ministry of Education, 2017).

Education provider: "An organization that delivers education and training programme. An entity (or an organization) running along the business of offering education services as its marketable products" (UNESCO, 2024a).

Educators: Teachers, tutors, instructors, trainers, or lecturers who impart knowledge and skills to learners and/or trainees. The word is broadly defined as anyone in an educator role. Preservice teachers, in-service teachers, nursing educators, trainers, and instructional designers are all examples of educators (Peters, 2017).

E-learning: This occurs when the learners and the instructor interact with each other in real time, from different locations, and can compare self-paced online learning asynchronously. "Is an umbrella term that refers to the use of any digital device or media (multimedia) for teaching and learning, especially for delivery or accessing of content. Thus e-learning can take place without any reference to a network or connectivity. The digital device used by the learner to access materials need not be connected to a digital network, either a local area network or to the Internet (or even to a cell phone network if a tablet is used as a terminal or access device" (Commonwealth of Learning, 2023).

E-waste: "Electronic products that have become unwanted, non-working or obsolete, and have essentially reached the end of their useful life" (Nahar et al., 2017, p. 3).

Fiji Education Management Information System: An online database system to provide information about schools, students, teachers and education facilities in Fiji. Provides primary and secondary schools in Fiji with a standardised means of recording and analysing information in FEMIS related to disability in children (including type and severity of disability), accessibility of school infrastructure and transport, and the qualifications and training of school staff in relation to disability-inclusive education (Ministry of Education, 2017).

ICT infrastructure: All computer and communications hardware and software used to execute administrative, management, and other operations across the education sector. "It encompasses all the devices, networks, protocols and procedures that are employed in the telecoms or information technology fields to foster interaction amongst different stakeholders" (Bwalya, 2011, p. 17).

ICT integration in education: "Seamless incorporation of information and communication technologies to support and enhance the attainment of curriculum objectives, to enhance the appropriate competencies including skills, knowledge, attitudes and values, and to manage education effectively and efficiently at all levels" (UNESCO, 2023). The integration of ICT in school practice is not to do with simple improvements in traditional instruction but is a radically new pedagogy, a shift from the traditional instruction model of knowledge transmission towards autonomous, active, and collaborative learning through students' engagement in ICT-based learning environments and shared learning resources (Jimoyiannis, 2009, p. 14).

Information and communications technology or technologies (ICT): Communication device or application, encompassing radio, television, cellular phones, computer and network hardware and software, satellite systems, among others, as well as the various services and applications associated with them, such as video conferencing and distance learning. "Refers to a range of technologies and tools used to create, collate and communicate information and knowledge. ICTs are used in daily life to prepare documents, talk to others by phone, listen to radio and watch television programmes. Some ICTs involve one-way communication, while others facilitate two-way communication. Some can include only one medium (e.g., telephone), while others can handle more than one medium (e.g., computer and television)" (Commonwealth of Learning, 2023).

Online distance learning: Also known as online education or e-learning, refers to a mode of education where students and instructors participate in learning activities remotely, often using the Internet and digital technologies. It is "the provision of distance education

opportunities in ways that seek to mitigate or remove barriers to access, such as finances, prior learning, age, social, work or family commitments, disability, incarceration or other such barriers. 'Open' refers to a commitment that removes any unnecessary barriers to access to learning. Distance education refers to teaching and learning that temporarily separates teacher and learner in time and/or place; uses multiple media for delivery of instruction; involves two-way communication and possibly occasional face-to-face meeting for tutorials and learner-learner interaction. Open learning is not the same as distance learning, but both are complementary and hence the two terms are often used together as open and distance learning" (UNESCO-UNEVOC, 2020).

Open educational resources: Educational materials that are in the public domain or introduced with an open licence. The nature of these open materials means that anyone can legally and freely copy, use, adapt, and re-share them. "OER is defined by the UNESCO OER Recommendation 2019 as any 'learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others'" (Commonwealth of Learning, 2023).

School administrators: Heads of a school in Fiji responsible for administrative support. Normally, an administrator is designated Principal or Vice Principal.

Stakeholder: A person, group, or organisation that has interests and concerns in ICT in education and training. This could include county governments, parents, learners, educators, communities, civil societies, NGOs, faith-based organisations, and development partners supporting education in Fiji (TechTarget, 2024).

Chapter 1: Education System in Fiji

Fiji is a group of volcanic islands located in the South Pacific, consisting of more than 300 small islands with two major ones: Viti Levu and Vanua Levu. The population has been dispersed equally across cities, towns, and villages; however, the country is currently experiencing a major shift due to urbanisation, the localisation of major industries, and migration. The schools in Fiji are primarily classified as rural, semi-urban, and urban. As of 2024, there are 354 urban, 155 semi-urban, and 658 rural schools in Fiji (R. Rai, personal communication, Ministry of Education, 2024). Even while a number of non-governmental organisations such as religious and social bodies continue to operate, maintain, and establish schools and facilities, the Ministry of Education does administer and manage the country's education policy and delivery of educational services (Lingam et al., 2017); exceptions are some of the private schools, such as International School Suva, which has its own curriculum and governing policies.

Fiji's Ministry of Education (MOE) and the Higher Education Commission (HEC) manage the country's education sector. The education system across the country is the same and guided by the Fiji National Curriculum Framework (FNCF). The FNCF identifies six foundation areas of learning and development (FALD) for early childhood and seven key learning areas (KLAs) for the primary and secondary levels of schooling. The curricula for all levels of primary and high school education are grouped according to the FALD and KLAs and described in terms of the appropriate learning outcomes. English is the primary language in education, while Hindi and I-Taukei are commonly taught as vernacular subjects in most schools. Fiji's education system is divided into five levels (Higher Education Commission Fiji, 2024b):

i. *Early childhood care and education (ECCE):* The ECCE Tuition Subsidy Grant supports early childhood care and education for standalone kindergartens or those attached to a primary school. The grant is for supporting children between ages three and six and is based on the *Na Noda Mataniciva* curriculum guidelines, an initiative by the Australian government in December 2009. The initiative had around 700 kindergarten teachers trained to meet the new standards. The *Na Noda Mataniciva* curriculum outlines expectations and outcomes for kindergarten children in all areas of learning and development: physical, social, emotional, cognitive, creative, and spiritual. While this level of education is not compulsory, each Fijian child is guaranteed a place in the kindergarten. There is a ratio of one teacher to every 15 children.

ii. *Primary education:* The Free Education Grant (FEG) supports primary schools. All Fijian students from six to 13 years of age (Year 1 to Year 8) must attend a primary school, whether it is run by the government, a private entity, or a social or religious organisation. The primary school students appear for various examinations and assessments after Year 4: language and numeracy assessment (LANA) in Years 5 and 7; the Fiji Eighth Year Exam; and mid-year and annual examinations. As of 2024, there are 155,619 primary school students in Fiji (R. Rai, personal communication, Ministry of Education,, 2024).

iii. *Secondary education:* The FEG also supports secondary schools. Students engage in secondary education from 14 to 18 years of age (Years 9 to 13). Students usually

undergo a five-year programme that enables them to be enterprising, creative, productive, and law-abiding citizens and prepares them to enter higher education. In 2024, there are 178 secondary schools, with 76,352 secondary school students enrolled. The secondary school students in Fiji appear for internal exams, such as mid-year and annual exams, in Years 9 to 13 and for external exams in Years 12 and 13.

iv. *Special education:* To ensure equity and inclusion in education for persons with disabilities, in accordance with the 2016 *Policy on Special and Inclusive Education*, the MOE also looks after 15 special schools and two vocational rehabilitation centres that educate Fijian students with disabilities (Ministry of Education, 2016). Special education is also guided by the 2018 *Rights of Persons with Disabilities Act*, which warrants the right to education for persons with disabilities (Fiji Government, 2018). The Special Education Unit under the MOE is responsible for these schools, through which Australian Aid supports students to learn critical skills such as sign language or Braille — which complement their education in a mainstream environment — and provides crucial educational support options for students with severe or complex disabilities. Moreover, the *Policy on Special and Inclusive Education* focuses on improving the learning environment, such as the infrastructure and curriculum, to support the learning needs of all students. Institutions such as Australia Pacific Technical College, The University of the South Pacific (USP), Fiji School for the Blind, and Fiji Association for the Deaf provide teacher training in the area of disability-inclusive education. Moreover, the MOE in 2013 launched an online database system known as the Fiji Education Management Information System (FEMIS) to provide information about schools, students, teachers, and education facilities in Fiji. FEMIS has a Disability Disaggregation Package that collects data in relation to the type and severity of disability, accessibility of school infrastructure and transport, and qualifications and training of school staff in relation to disability-inclusive education. This information enables the relevant stakeholders to provide appropriate assistance to students with disabilities.

v. *Tertiary education:* The HEC Fiji oversees the development and improvement of higher education in the country to ensure that learners have the best possible opportunity to gain the relevant qualifications required to support and sustain Fiji's economic and social prosperity. The Fiji National Qualifications Framework (FNQF) provides different learning pathways and promotes learner mobility by clarifying how qualifications relate to each other within the national system. Moreover, the FNQF framework extends from certificates to doctorates, encompassing all the education and training provided within Fiji at senior levels of secondary school, industry, vocational schools, and all technical and vocational education and training (TVET) providers, technical training institutes, and university and specialist higher education providers (Higher Education Commission Fiji, 2024a. More recently, there has been growing investment by higher education institutions (HEIs) in Fiji to provide specialised services and support for their students with disabilities (Higher Education Commission Fiji, 2024b).

As of April 2024, there are 879 ECCE centres, 738 primary schools, 176 secondary schools, three major universities, and 66 other HEIs in Fiji. The government provides tuition grants for mainstream schools, including the Special and Inclusive Education Grant for children with special needs.

According to the 20-year National Development Plan (Ministry of Economy, 2016), the government aims to provide universal access to education at all levels and improve the quality of education in Fiji. The Fijian government invests in improving existing and new education facilities, purchasing new equipment and materials, embracing digital learning and tools, and improving teacher performance through training and upskilling programmes and formal qualifications. Furthermore, the plan supports the following:

- a free education initiative through per capita school grants
- bus-fare and boat-fare subsidies, free textbooks, open educational resources (OER), and other financial assistance to ensure that no one is deprived of quality education
- reviews of secondary school curricula to support creative and active learning and develop entrepreneurial skills, learning by doing, and effective peer learning
- a focus on tertiary education's current and future needs, including the future demands of the labour market
- the establishment of additional technical institutes and wider opportunities for all
- the provision of education that is more inclusive to accommodate children with disabilities and special needs

Moreover, the Strategic Plan 2019–2030 developed for the MOE streamlines policies, processes, resources, and standards associated with the education system in Fiji (Ministry of Education, 2019b). The main priorities for the Strategic Plan 2019–2030 are as follows:

i. provide universal access to education for all and improve the teacher–student ratio
ii. improve early childhood education, and improve the rates of language literacy, numeracy, and digital literacy
iii. review curriculum for primary and secondary, and improve higher education to meet future needs and demands of the labour market
iv. provide inclusive education for all, regardless of gender or location
v. develop skills in priority areas such as trades and crafts, engineering, IT-related professions, healthcare services, hospitality, elder care, foreign languages, and resource-based sectors
vi. embrace digital learning and work to improve teacher performance
vii. support the development of a knowledge-based society that will result in positive ripples throughout the economy through improvements in efficiency and productivity, the rates of technology diffusion and adoption, and research and innovation
viii. support education for civil, electrical, and hydrological engineers and the other skilled individuals required for various industry sectors

The 2019–2030 Strategic Plan also highlights the mapping of MOE initiatives to the Pacific Regional Education Framework (PacREF) key policy areas: quality and relevance; learning pathways; student outcomes and well-being; and the teaching profession. Hence, the Fijian government is working according to the National Development Plan and the 2019–2030 Strategic Plan to achieve the targets outlined for its education sector.

According to the Ministry of Communications (2023), every year, the government allocates around 18% of Fiji's national budget for education, which is used to fund scholarships, study loans, and grants. Other organisations, such as the United Nations (UN), the United Nations Children's Fund (UNICEF), and Australian Aid also support the development and sustainability of the education system in Fiji. Moreover, the government has invested in and

supported the integration of ICT into Fiji's education system to improve the quality of education provided to citizens. In 2023, the government also invested in an audiovisual studio for education purposes and in interventions to improve Fijian students' digital literacy (Ministry of Education, 2019a). The MOE has collaborated with The University of the South Pacific to develop 1,500 OER for STEM (science, technology, engineering, and mathematics) subjects (USP, 2024). In addition, the government has had initiatives such as a pilot trial of one laptop per child, as well as the provision by USP of ICT training to primary school students and their parents (Yusuf, 2009).

While several initiatives by the MOE and HEC aim to improve education quality, the use of ICT by students is becoming increasingly complex, raising questions about academic integrity. Although the MOE launched the 2023 Denarau Declaration, together with a three-year strategic development plan for 2023–2026 to ensure adaptable and inclusive education for all Fijians, ICT inclusivity and accessibility for all students remain concerns due to infrastructure limitations and Fiji's geographical layout. However, the 2023 Denarau Declaration aims to address the challenges of education quality, assessment quality, opportunities for teaching and leadership, inclusive and equitable education, digital and lifelong learning, and establishing the needed policies in education in Fiji. Currently, there are no policies for integrating ICT into Fiji's education system. This report will describe the current facilities available to the education system in Fiji, and it will suggest the development of ICT policies for implementation to improve the accessibility, availability, and use of digital tools and resources for education. Some of the key issues identified in Fiji's education system are:

1. Gross enrolment rates: Fiji has a gross enrolment rate of 106.61% for primary education, indicating a high level of participation, including overaged and underaged students enrolled. However, secondary education enrolment drops, reflecting a need for policies to keep students engaged throughout their educational journey (World Bank Group, 2022).

2. Gender parity: The gender parity index for secondary school enrolment in Fiji stands at 1.108, showing a relatively balanced enrolment of boys and girls, with a slight advantage for girls (CEIC, 2021). While gender parity is being achieved, efforts must continue to ensure this balance across all educational levels.

3. Quality of education: As measured through various indicators, Fiji still faces challenges in achieving a good quality of education. For instance, many schools struggle with outdated materials and a lack of trained teachers, challenges that compromise learning outcomes and overall educational quality (UNESCO, 2024b).

4. SDG4 progress: Fiji is committed to achieving Sustainable Development Goal 4 (SDG4), which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030. Despite making significant strides, the country faces ongoing issues such as disparities in education quality between urban and rural areas, and inadequate support for students with disabilities (Global Campaign for Education, 2024).

Currently, there are no comprehensive policies for integrating ICT tools in education in Fiji. Implementing clear policies for ICT integration in education can help address the complexities identified above, facilitate the use of digital tools and resources, enable quality

remote and open learning, empower training and upskilling programmes, and ensure academic integrity. These policies should cover infrastructure development, teacher training, and the provision of digital resources. This report aims to highlight Fiji's current facilities and suggest the development of ICT policies to enhance the accessibility, availability, and use of digital tools and resources in education.

Chapter 2: ICT in Education Policy and Practices in the South Pacific

Pacific Education

The Pacific island countries (PICs) present a blend of extraordinary cultural, social, and political diversity, and the geography varies from tiny coral atolls to mountainous land masses. The countries in the South Pacific are guided by their national constitutions and different policies that have been established for various sectors (Firth, 2018). Although there are differences amongst the PICs in terms of development, accessibility to resources, political regimes, languages, cultural beliefs and practices, and economic stability, their desires to adopt the Internet and ICT-driven services have been similar (Reddy et al., 2022). Uptake and adoption have been successful for some PICs but relatively slow for others, due to infrastructure, literacy and financial issues, and the unavailability of sufficient and reliable resources such as trained personnel.

The penetration and use of digital tools and resources by the South Pacific populace is growing exponentially, in light of which the national governments have developed and implemented various policies to guide each country's process of digital transformation. Examples include the Tonga Digital Government Strategic Framework; Samoa's National ICT Policy; Vanuatu's National ICT Policy; Solomon Islands' National ICT Policy; Tuvalu's 2021–2030 National Strategy for Sustainable Development, Te Kakeega III 2016 to 2020, and the Tuvalu Education Sector Plan III (TESP III); Nauru's Information, Communications and Technology Policy; and Marshall Islands' National ICT Policy. Moreover, with efforts from the International Telecommunication Union (ITU), the Pacific Islands Forum Secretariat, the Secretariat of the Pacific Community, the Pacific Islands Telecommunication Authority, and the Pacific ICT Regional Regulatory Centre, and with support from The University of the South Pacific, Fiji, and Cook Islands, the region's national ICT policy has been adopted by Papua New Guinea, Samoa, and Tonga (ITU, 2013). Table 1 presents the existing policies related to ICT and education in the South Pacific. Although the policies are different in nature, they facilitate ICT-driven activities for various organisations in Fiji and the South Pacific.

Table 1. Existing ICT in education policies in the South Pacific

Country	Policy
Fiji	Policy Directions and Strategies for the Development and Growth of Information and Communication Technology[1]
Fiji	Policy on Special and Inclusive Education[2]
Fiji	Policy on FEMIS
Fiji	Denarau Declaration[3]
Pacific	ICT Use and Access in the Pacific: Emerging Perspectives[4]
Samoa	National ICT in Education Policy 2018–2023[5]
South Pacific	Digital Infrastructure and ICT Use in the Pacific[6]

[1] https://www.unapcict.org/sites/default/files/2019-01/FIJI_ICTDEVELOPMENTPOLICY-1.PDF
[2] https://planipolis.iiep.unesco.org/sites/default/files/ressources/fiji_-_special_and_inclusive_education_policy_implementation_plan_-_2016.pdf
[3] https://hrsd.spc.int/sites/default/files/2021-07/MPs_Outcomes_A2_Poster_LR.pdf
[4] https://oasis.col.org/items/2d58d02d-e43a-440e-ae79-45379495b0ee
[5] https://www.mesc.gov.ws/wp-content/uploads/2019/09/MESC-ICT-in-Education_Policy_2018-2023-30.10.2018_FINAL.pdf
[6] https://unctad.org/system/files/official-document/dtlecdc2022d4_ch2_en.pdf

A national ICT policy defines a country's general direction in relation to ICT and national development, typically in the form of a set of goals and objectives. It also addresses the use of ICT in the context of national development; the expansion of access to ICT infrastructure; the fostering of ICT-related human resources development; and the use of ICT in governance and public services delivery. The Pacific Islands ICT Policy and the Strategic Plan were endorsed by Pacific Island Forum leaders, with the Pacific Regional Digital Strategy as an essential component. With this action, the development of a national ICT policy commenced for the Pacific Islands countries.

The goals and objectives of a national ICT policy are to oversee:

i. access and infrastructure development
ii. legal and regulatory frameworks
iii. governance and the supply of public services
iv. industry growth
v. traditions, cultures, and languages
vi. human resources development and public awareness

According to (UNESCO, 2024b), countries in the South Pacific are working on education technology legislative and policy frameworks to ensure equitable access to infrastructure for schools and households, support students and teachers in developing digital skills, ensure cybersecurity and data privacy for learners, and deliver quality distance education. The status of the PICs in terms of policy/framework development for technology in education is as follows:

i. **Fiji:** The 5-Year (2017–2021) and 20-Year (2017–2036) national development plans focus on embracing digital learning; improving language literacy, numeracy, digital literacy, and physical literacy; improving skills development in priority areas such as engineering and IT-related professions; and strengthening the use of ICT, distance learning, and e-learning in schools (UNESCO, 2023a).
ii. **Kiribati:** 2021–2025 ICT in Education Master Plan aims to support ICT usage in education that upholds culturally grounded and high-quality education. There is no digital literacy framework as of now, but the 2021–2024 ICT in Education Master Plan aims to develop one (UNESCO, 2023b).
iii. **Marshall Islands:** There is no policy for ICT in education, but the 2010 Comprehensive Technology Plan recognises technology as an important tool for moving the Ministry of Education, Sports & Training forward. The plan targets students, teachers, school leaders (principals and head teachers), and ministry staff and envisions them becoming technology literate (UNESCO, 2023c).
iv. **Papua New Guinea:** The national ICT policy supports the integration of ICT within the education system in Papua New Guinea (UNESCO, 2023e).
v. **Nauru:** The 2018–2030 Pacific Education Regional Framework aims to integrate ICT into learning programmes to create effective and efficient new ways of learning and to leverage and expand the use of ICT in education (UNESCO, 2023d).
vi. **Samoa:** The 2018–2023 National ICT in Education Policy serves as a tool to guide the process of embedding and integrating ICT in all schools in Samoa (UNESCO, 2023f).
vii. **Solomon Islands:** The ICT School Policy outlines the school's approach to using ICT for management, administration, teaching, and learning (UNESCO, 2023g).

viii. **Tokelau:** While Tokelau does not have an ICT in education policy, it has adopted the 2010–2015 National Strategic Plan and the 2018–2030 Pacific Regional Education Framework to guide the use of ICT in education (UNESCO, 2023h).
ix. **Tonga:** There is no ICT in education policy; however, the Education Act and the Tonga Education Policy Framework aim to develop an ICT policy for education in Tonga, analyse options for the use of ICT-based distance education, review practices on the use of ICT in education, and build ICT capacity throughout the system (UNESCO, 2023i).
x. **Tuvalu:** The 2016–2020 Tuvalu Education Sector Plan III (TESP III) guides the use of ICT in education and the development of Tuvalu's e-learning system processes and procedures (UNESCO, 2023j).
xi. **Vanuatu:** The integration of ICT in schools was first established as a national priority in the 2013 National ICT Policy. The policy's priority areas include "Access to ICT in Education" and "Access to ICT Infrastructure and Devices" (UNESCO, 2023k).

The Pacific Regional Education Framework (PacREF) is a policy guide that endorses high-quality education services in the PICs (Pacific Regional Education Framework, 2024). The policy areas for PacREF are quality and relevance, learning pathways, student outcomes and well-being, and the teaching profession. The PacREF 2018–2030 focuses on the following (Pacific Islands Forum Secretariat, 2024):

- reviewing and developing inclusive curricula
- developing regional tools for the governance, management, quality assurance, financing, leveraging, and expansion of ICT as an education access tool
- providing support for learners through access to learning support, counselling, and engagement with social agencies
- strengthening the understanding of teacher professional standards/competencies, teacher professional development, performance management systems, and their translation into practice, including their assessment and evaluation, at all levels of education

The adoption of ICT in various sectors has revolutionised services in the South Pacific. The region's National ICT Policy guides this process; however, a comprehensive search through the literature found only one policy, for Samoa (Ministry of Education, Sports and Culture, Samoa, 2018). Other PICs have in place only frameworks or plans. The use of OER is also included in the National Information and Communication Technology Policy for Samoa. Moreover, the USP has an OER policy, which provides direction for the adoption and use of OER in order to increase access to and support high-quality teaching and learning at the university (USP, 2020). Although various policies have been adopted and embraced by organisations and learning institutes in Fiji, the country needs an ICT in education policy to drive the sustainable integration of ICT in its education system.

Status of ICT Policy in Fiji

Currently, the Fiji National Curriculum Framework (FNCF) guides the curriculum and defines the purpose of education in the Fiji islands (Chandra et al., 2024). The MOE uses the FNCF to implement ICT in education in Fiji. To do so, the MOE introduced the Fiji Education Management Information System (FEMIS) Policy to improve and facilitate timely and efficient data collection from Fiji schools (Ministry of Education, 2019b). Although many policies are related to governing the education system in Fiji, no policies have been implemented to integrate ICT into the education system. Such policies are essential, though,

as they enable and substantiate ICT-related changes, thus implementing innovative pedagogies in a timely manner to continually improve the quality of education and maintain its relevance in Fiji. The Fijian government is considering revising the National ICT Policy to establish a new comprehensive ICT policy for Fiji, one that will include the latest ICT trends, technologies, and pedagogies (Ministry of Education, 2019b).

Moreover, enabling ICT infrastructures and access is crucial for a developing country like Fiji. The Internet in Fiji is supplied through the Southern Cross cable, which was introduced in 2000. Fijians are connected to the Internet via many different Internet service providers (ISPs), by either home broadband or mobile broadband (Commonwealth of Learning, 2022). Sources indicate that a National Broadband Policy was launched in 2011 (ITU, 2018); however, stakeholder(s) confirmed that this was only a white paper. Fiji has no ICT policy and has instead been using international standards and the regional policy as a guide for implementing ICT services. The National Digital Strategy, which is presently in the validation process, will become the National ICT Policy for Fiji (UNOPS, 2024). The annual report for the MOE further states that to improve the overall quality of education in Fiji, the use of ICT in Fiji schools will be strengthened, and distance and e-learning will be deployed in Fiji schools (MOE, 2021). The report also states that the MOE will initiate the development of TVET databases; an e-library or virtual library for all citizens; the restoration and digitisation of analogue audio and audiovisual media, photographs, microfilms, manuscripts, and paper documents to safeguard cultural knowledge; develop a digital archival system for storing and preserving sacred indigenous records (Vola-ni-Kawa-Bula) to safeguard the tribal knowledge and protocol of the iTaukei; and strengthen data collection procedures through FEMIS. According to a COL report (Commonwealth of Learning, 2022), Fiji has better Internet connectivity than other PICs, and device ownership is high, so Fiji schools should be able to achieve good access to and adoption of ICT in education. Blended learning is feasible in Fiji, but improvements are needed in the areas of network infrastructure, course design, faculty development, electricity supply, and the cost of devices. The report also emphasises the importance of continued investment in infrastructure, strategic partnerships, and comprehensive policy frameworks to strengthen Fiji's open, distance, and flexible learning capabilities and promote sustainable educational development. As of July 2024, the school enrolment by gender is: (1) ECE, 8,429 females and 9,288 males; (2) primary, 73,016 females and 79,164 males; and (3) secondary, 38,689 females and 35,103 males. Although there are ongoing initiatives by the MOE and other organisations, Fiji's education system needs an ICT policy in order to further develop, per the nation's strategic plan.

Fiji OER Policy

Fiji has a National Policy on Open Educational Resources that guides the use of OER to increase access to and support quality learning and teaching in the country's education and training system (Ministry of Education, 2019a). The policy is a six-page document that details the use of OER in Fiji and regulates the following:

i. promoting OER awareness to widen access to all levels of education
ii. providing for all educators and students to use OER for producing learning materials
iii. promoting circular models by facilitating reusing, revising, remixing, redistributing, and retaining educational materials
iv. supporting all educators to develop OER under the legal framework of Creative Commons and to indicate the licensing conditions clearly on each resource
v. the MOE's establishment and maintenance of an OER repository

vi. facilitating access to learning and teaching resources, and enabling environments for ICT, including infrastructure, broadband connectivity, widespread mobile technology, and reliable electrical power supplies
vii. sharing materials among diverse media, such as the education and telecommunications industries
viii. encouraging the development of OER in a variety of contexts
ix. ensuring open licensing is used for educational materials, including research resources produced with public funds, to maximise their impact in education and training; restrictions, if any, shall be on a case-by-case basis
x. promoting research on the production, use, and re-contextualisation of OER

The OER policy applies to all public and private ECE centres, primary, secondary, and post-secondary educational and training institutions (including universities), and all other government-funded or non-government and private institutions operating in Fiji. The policy abides by Fiji's Copyright Act (1999) and Education Act. The policy was effective from 4 January 2016 and was reviewed after a year. The implementation of this policy, from early childhood centres to secondary schools (whether private or public), was carried out by the MOE; at the tertiary level, the HEC was responsible for implementation. According to a report by Butcher and Baijnath (2023), different institutions have taken different approaches to implementing the OER policy. For example:

- for tertiary-level institutions, Fiji's HEC works with the individual institutions
- government-funded or non-government and private institutions or agencies operating in Fiji shall develop their own OER policies and procedures that are relevant to their organisations and are consistent with the national policy
- educational institutions, from early childhood centres to secondary schools, whether private or public, shall, under the Ministry of Education, develop OER policies, guidelines, and procedures as appropriate that are relevant to their organisations and consistent with the national policy

Furthermore, the MOE in 2015 started a free textbook initiative up to Year 12. This initiative, which is guided by the Policy on Free Educational Resources, helps students overcome the financial burden of having to buy textbooks and other basic educational materials needed to properly grasp the school curriculum (Ministry of Education, 2019a). The textbooks are electronically stored and available to students via the MOE website, FEMIS, CDs and DVDs, electronic gadgets, and emails.

The policy also states that Fijian schools shall be allowed to use a percentage of their grant allocation to purchase textbooks that are not provided by the ministry. The hard copies of textbooks can be provided to the students on a 1:1 basis, and the class teacher is responsible for textbook distribution and collection. The school principals or headteachers shall ensure that enough free educational resources are available to all teachers and students. The textbooks are reviewed under the FNCF (Higher Education Commission Fiji, 2024a). The Curriculum Development Unit is responsible for the primary and secondary levels of ECE centres.

The use of OER at the tertiary level is also regulated by the National Policy on OER. However, different universities have their own policies and procedures on the use of OER by their students and staff. An institutional OER policy is available at The University of the

South Pacific,[7] and Fiji National University[8] (FNU) uses COL's *Understanding OER* course to promote OER use. FNU has developed a draft policy with the support of COL[9] after conducting a survey of stakeholders (Prasad, 2022). At USP, following the adoption of the OER policy, a grant was also announced for OER conversion by the Centre for Flexible Learning (S. Naidu, personal communication, July 20, 2017). COL, with the support of the Ministry of Foreign Affairs and Trade, New Zealand, and the Pacific Centre for Flexible and Open Learning for Development, is currently supporting an OER repository in Fiji,[10] along with other country-level repositories in the Pacific region (oer4pacific, 2024).

The National Digital Strategy 2024 represents Fiji's plan to implement and enforce a national ICT policy in Fiji. As of July 2024, the validation workshop for the National Digital Strategy for Fiji is underway and is expected to be completed soon (UNOPS, 2024). Fiji therefore will have its National ICT Policy implemented by December of 2024.

COL recently has sponsored workshops to develop new ICT-related policies for Fiji, including an online distance learning policy for teacher professional development (Commonwealth of Learning, 2024).

The initiatives for developing new and tailored ICT policies have begun, and stakeholders have also made several recommendations for developing a policy on incorporating ICT into education. The new policy will include adopting new tools and technologies for teaching and learning; professional development for teachers so they can use the latest technologies effectively; and a guide on the infrastructure needed to support the integration of new ICT tools and technologies.

[7] https://policylib.usp.ac.fj/form.readdoc.php?id=736
[8] https://www.fnu.ac.fj/learning-teaching/core-services/oers/
[9] Draft policy development in May 2022 as per information received from COL.
[10] https://fji.oer4pacific.org/

Chapter 3: Status of ICT in Education in Fiji

Methodology and Overview

An online questionnaire was distributed to all primary and secondary schools in Fiji to measure the extent to which ICT is currently being used in schools for teaching, learning, and management. The questionnaire also focused on how the schools managed their ICT devices and how they maintained professional development in terms of ICT competencies. We received responses from a total of 1,036 schoolteachers, and these data form the main basis of the report. We also made efforts to consult stakeholders from other areas (higher education, and ICT service providers) to enrich the information from these sectors, but the responses were very poor and not suitable for statistical analysis.

The desktop reviews and online survey showed that in the absence of a national ICT policy in Fiji, ICT strategies and plans for different local organisations are developed using international standards such as the International Organization for Standardization and the National Institute of Standards and Technology. Moreover, validation of the National Digitization Strategy for Fiji is underway; this strategy represents the national ICT policy for Fiji and is expected to be implemented by December 2024 (UNOPS, 2024).

Fiji's MOE has also signed the 2023 Denarau Declaration, which emphasises inclusive and equal education for all Fijians. The seven thematic areas of this declaration are (1) Curriculum and Sustainable Development, and Quality Assurance and Assessment; (2) Teaching Profession and Leadership; (3) Early Childhood Education, Inclusive Education, Access to Equitable, Safe, and Healthy Schools; (4) Financing of Schools and Effective Government; (5) Technical and Vocational Education and Training, Non-Formal and Lifelong Learning; (6) Digital Learning and Transformation, Technology Integration, and Cyber Safety; and (7) Education Policy, Planning, Research, and Data (Ministry of Education, 2023).

Specifically, thematic area six focuses on improving the digital literacy of both teachers and students while implementing technology-driven education to achieve resilient learning in Fiji. Thematic area seven emphasises the need for policies that suit pedagogical trends and the changing needs of the education system in Fiji. All seven thematic areas are directly or indirectly connected to ICT and education and hence will be governed, guided, and driven by a national policy on ICT in education, which itself will be governed and driven by the upcoming national policy on ICT.

Thematic area six in the Denarau Declaration also emphasises the need for greater regulatory frameworks and improved security measures when integrating technology into teaching and learning. The MOE receives abundant support in terms of providing equal educational opportunity to students of different genders and those living with disabilities, through a collaborative effort between various stakeholders, such as Hilton Pride (Special School). Additional educational support is provided to schools, including satellite-based learning for remote schools. Through one initiative, 20 remote schools have been adopted by organisations that assist them in supporting their education through satellite learning. The resources provided by the MOE are available to all citizens via its website, and all the data collected by the MOE are stored in FEMIS, which is managed by Information Technology and Computing Services, a department within the Fiji Ministry of Communications.

Organisations manage data and e-waste differently. Currently, Fiji has no policy for e-waste management, so each organisation has its own policy (or not), and international guidelines exist on how to manage e-waste in organisations. All the interviewees highlighted the need for a national ICT policy and an ICT policy for the education system, which should include specific objectives and guidelines on data and e-waste management.

Our discussions with some key stakeholders emphasised the need for:

1. a policy document for ICT in education that aligns with the 2023 Denarau Declaration and is governed by the forthcoming National Digital Strategy for Fiji
2. digital skills development for students, teachers and management (Chandra et al., 2024)
3. more awareness programmes on cybersecurity and cyberbullying for students, teachers, school administrators, and management
4. infrastructure for managing educational data, improving connectivity, and ensuring the accessibility and availability of technology-leveraged learning and online resources
5. implementation of policies to actively engage neighbouring school communities in addressing cybersecurity and data privacy issues

School Analysis

The data provided by the MOE show that there are 871 early childhood education, 744 primary, and 178 secondary schools. In total, 1,036 individuals participated in the survey, out of which 787 were from primary schools and 249 were from secondary schools. The questionnaire was divided into the following themes: (1) school leadership and ICT, (2) student practices related to the use of ICT, (3) digital devices and Internet connectivity, and (4) digital education resources. The survey results will be presented according to these themes. For discussion purposes, the positive and negative responses are grouped separately. Notably, some participants did not answer certain questions, leading to variations in total percentages for some of the variables.

School leadership and ICT

Table 2 shows the participants' responses on the existence of a digital plan/strategy and their involvement in developing ICT policies. According to the results obtained, 87.7% of the participants stated that they knew about digital strategy and have used a digital plan/strategy to implement and administer ICT devices in teaching and learning, 84.2% indicated that the school management involved them as a team while developing an ICT plan/strategy for the schools, and 90.7% have used ICT for teaching and learning. On average, 84.0% of the participants indicated that they know about various digital tools and have used them for classroom management.

Table 2. Participant responses on digital strategy and teacher involvement

Variables	Strongly Disagree	Disagree	Agree	Strongly Agree
Professional development	6.4%	31.9%	41.1%	20.7%
Workshop and training	3.9%	18.4%	58.8%	18.9%
Class management	3.3%	11.8%	55.7%	29.1%
Digital tools	3.4%	13.3%	58.7%	24.6%
Using ICT for teaching	3.4%	5.9%	54.9%	35.8%
Developing strategy	3.2%	12.7%	60.2%	24.0%
Knowing about digital strategy	4.5%	7.7%	57.0%	30.7%

The school management and administrators also offer professional development for their staff, with 61.8% of the schools provided with professional development internally and through experts from the MOE; 77.7% of the participants have attended training and workshops organised by the MOE.

Approximately 96% of the participants indicated that their schools place importance on the students' ICT skills for essential computer functions, accessing, choosing, and using the correct information from the Internet, improving learning in non-ICT topics, and using digital devices safely and appropriately. The combined results highlighted in Table 3 show that the schools feel that students should know how to use ICT to retrieve the right information (99.3%), learn about non-ICT topics (98.2%), understand device safety (98.5%), know how to access and use information (96%), and be able to perform basic computing tasks (97.6%).

Table 3. The importance of schools' use of ICT for students

Areas	Not Important	Little Important	Moderately Important	Very Important
Right information	0.8%	7.9%	21.8%	69.6%
Learning about non-ICT topics	1.7%	11.9%	29.2%	57.1%
Device safety	1.5%	10.8%	21.7%	66.0%
Accessing and using information	2.4%	12.4%	26.2%	59.0%
Basic computer knowledge	4.0%	12.6%	26.1%	57.3%

Table 4 shows the use of ICT by teachers for different classroom activities. The combined percentages indicate that the teachers have used ICT for in-class discussions (75.9%), presenting information (79.5%), classroom management (63.7%), searching for information (68%), and assessing student learning (42.9%).

Table 4. Use of ICT by teachers

Areas	Never	Some Lessons	Most Lessons	Every Lesson	I Don't Know
In-class discussions	8.7%	44.7%	28.0%	3.2%	0.5%
Presenting information	5.3%	46.6%	29.2%	3.7%	0.2%
Classroom management	20.3%	42.7%	18.6%	2.4%	1.1%
Searching for information	16.1%	47.8%	18.2%	2.0%	0.9%
Assessing student learning	40.6%	31.2%	10.1%	1.6%	1.4%

Table 5 presents results on teacher activity performed using ICT during the previous three months. The teachers used ICT to search for lesson/educational content (80.5%), share educational content (80.1%), participate in project development using ICT (55.2%), prepare presentations and other educational materials (77.2%), develop or deepen knowledge (73.8%), and carry out administrative class management (77.4%). However, on average, 4% of the teachers never used ICT to carry out school activities. While teachers' use of ICT tools seems to be on the rise, there is still significant catching up to be done by some teachers and schools.

Table 5. Teacher activity performed using ICT

Areas	Never	Some Lessons	Most Lessons	Every Lesson	I Don't Know
Search for lesson/educational content	3.5%	10.4%	31.5%	38.6%	1.1%
Share educational content	3.4%	18.1%	34.6%	27.4%	1.5%
Participate in project development using ICT	25.1%	27.3%	19.9%	8.0%	4.7%
Prepare presentations or other educational materials	6.8%	22.5%	31.9%	22.8%	1.1%

Develop or deepen knowledge	9.0%	25.4%	26.7%	21.7%	2.1%
Carry out administrative class management	2.9%	14.6%	16.9%	45.9%	1.2%

Table 6 shows the ICT competencies of the participants. The combined percentages/results show that the participants' confidence in using ICT competencies varied across various tasks: 78.6% of the participants were confident about using ICT for discussions, 82.8% for presentations, 78.5% to prepare for lessons, 77.4% for doing spreadsheet activities, 75.9% for assessing student learning, and 77.7% for collaboration.

Table 6. The ICT competencies of the participants

Areas	Not Confident at All	Little Confident	Moderately Confident	Very Confident	I Don't Know
Contribute to a discussion forum or user group on the Internet	4.9%	19.6%	30.5%	28.5%	1.4%
Produce presentations	2.0%	11.3%	25.9%	45.6%	0.1%
Prepare lessons that involve the use of ICT by students	5.2%	15.7%	29.2%	33.6%	1.2%
Use a spreadsheet program	6.4%	16.3%	29.3%	31.8%	1.2%
Assess student learning using ICT	7.2%	18.6%	28.4%	28.9%	1.6%
Collaborate with colleagues using shared resources	6.4%	17.7%	31.2%	28.8%	0.9%

Student practices related to the use of ICT

The grade at which students start using computers for learning differs between schools; for example, while some start computer lessons from Year 1, others start at Year 5, and still others start at Year 9. The participants stated that the school curriculum recommends using ICT for learning, but there are no guidelines or frameworks for defining students' digital competencies (50% of participants). Only 20% of participants stated that there is a framework/guideline to define students' digital competencies, and it is valid, while 11% stated that there is a framework, but it is not relevant to the school curriculum. Only 7% indicated that their school evaluated their students' digital competencies last year, while the other schools did not. Appropriate evaluations of students' digital literacy, along with subsequent interventions, need to be carried out so that every student is digitally literate and able to attend to learning and support services that leverage IT, as well as to understand the processes for finding information and maintaining data privacy.

Digital devices and Internet connectivity

The survey indicated that a total of 776 schools in Fiji have Internet access, while 55 do not. The number of devices connected to the Internet varies from one school to another. A total of 132 schools have digital devices adapted for the use of students with disabilities.

Table 7 shows the participants' responses to questions about Internet connectivity at their schools. The results show that the majority of the participants were not satisfied with the Internet connectivity or the availability of digital devices for teaching and learning. The combined percentages indicate that the teachers were dissatisfied with the following: the number of devices available for instruction (44.6%), the number of devices available with Internet access (44.0%), the Internet bandwidth (33.4%), and the available technical support (38.5%). Moreover, teachers at some schools were dissatisfied with Internet stability (34.7%). The results indicate that on average, 50% of the schools have sufficient digital technology and resources available, while the remaining face issues in these areas.

Each school's Internet connectivity and digital devices are looked after by the school's administration or head.

Table 7. Sufficiency of education resources available

Areas	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Device sufficiency for instruction	15.9%	28.7%	6.9%	21.1%	6.7%
Device sufficiency for use of Internet	15.5%	28.5%	5.8%	21.5%	7.8%
Internet bandwidth or speed sufficiency	14.1%	19.3%	6.8%	29.6%	9.3%
The school's Internet stability	14.0%	20.7%	8.0%	29.1%	7.5%
Technical support	13.0%	25.5%	9.3%	24.8%	6.2%

Table 8 shows participants' responses to the availability of digital education resources in their schools. The combined responses showed that 30.2% of the schools had access to sufficient digital learning resources, and 32.1% indicated that the digital learning resources available to them were of adequate quality. Also, 38.0% of the participants noted that digital learning resources were aligned to the needs of the curriculum, and 38.0% indicated that the digital learning resources were curated for the local context and language, while 19.2% indicated that the digital learning resources were adapted to the needs of students with disabilities. The results indicate that more than 50% of the respondents from the surveyed schools were dissatisfied with the digital education resources made available to them.

Table 8. Availability of digital education resources

Areas	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My school has access to sufficient digital learning resources.	10.6%	26.7%	9.7%	26.7%	3.5%
Digital learning resources are of adequate quality.	8.7%	25.9%	10.7%	28.7%	3.4%
Digital learning resources align with the needs of the curriculum.	7.2%	19.0%	13.0%	34.9%	3.1%
Digital learning resources are curated for local context and language.	6.8%	19.2%	13.3%	35.1%	2.9%
Digital learning resources are adapted for students with disabilities.	12.2%	30.0%	15.8%	17.1%	2.1%

Table 9 shows the frequency of teachers' use of digital tools. The combined responses indicate that on average, about 69.9% of the participants used computer-based information resources in their lessons, 68.4% used digital resources for their lessons, 42.5% used digital learning games, 47.0% used collaborative software for their lessons, 41.3% used graphics or drawing software, while 68.1% used a word processor and 61.9% used presentation software for their lessons. The results indicate that an average of more than 50% of the teachers are using digital tools for their lessons.

Table 9. Teachers' use of digital tools

Areas	Never	Some Lessons	Most Lessons	Every Lesson	I Don't Know
Computer-based information resources	5.9%	41.4%	24.6%	3.9%	1.5%
Digital resources linked with school textbooks	7.4%	40.3%	22.1%	6.0%	1.5%
Digital learning games	30.1%	35.4%	5.7%	1.4%	4.7%
Collaborative software	25.3%	33.8%	11.3%	1.9%	5.0%
Graphics or drawing software	31.9%	33.5%	6.9%	0.9%	4.2%
Word-processor software	8.1%	34.4%	26.1%	7.6%	1.2%

Presentation software	14.2%	44.1%	15.7%	2.1%	1.2%

The participants were also surveyed for their use of the latest digital tools, such as ChatGPT; 32.6% indicated knowing about AI-assisted learning, and 50% used it for their teaching and learning.

Only 52.4% of the participants stated that they had cyberbullying cases reported to them during or after school hours. This points to students not being aware that bullying is happening, or being uncomfortable about sharing such information with their teachers.

Chapter 4: Key Issues for Fiji's National ICT in Education Policy

Equitable, accessible, quality, and relevant education is a right for all humans, without exception or exclusion. The education sector needs to adopt and adapt to new digital tools and technologies to meet the needs of the global education sector and workforce. Furthermore, there is a genuine need to be able to create, utilise, and share digital resources so that ICT can be interwoven with education to bring about equitable and inclusive learning environments and pedagogies. Requirements such as the shifting professional needs of individuals, inclusive learning and lifelong learning, sustainable development, the digital revolution, and achieving SDG4 were highlighted at the 2022 Education Summit, prompting institutions to ponder upon the current challenges they are facing (United Nations, 2023) and the opportunities created as a consequence. Due to digital transformation and shifting education paradigms, educational institutes need to develop student-centred, connected, inclusive, collaborative approaches to learning. The influence and benefits of artificial intelligence are huge, but any AI tool needs to be sustainably integrated into the education system. Professional development for teachers, upgrades to ICT infrastructures, the empowerment and upskilling of management, appropriate digital resources for schools, and government investment are also essential for reshaping educational pedagogies in any country. Education policies play an indispensable role in implementing changes and monitoring and evaluating their effects, promoting and maintaining quality, ensuring inclusive and equitable education, and governing the ethical use of digital tools and resources for the education sector. Since the global education system is adopting technology to reshape the delivery of education, a framework or ICT in education policy is needed to guide all concerned stakeholders in achieving the goals set by the global education community and the SDGs.

According to UNESCO (2021), a guiding framework for planning an ICT in education policy must reflect (1) learning and human values outcomes, (2) teaching and learning practices, (3) teachers and human facilitators, (4) educational resources, including content, and (5) ICT. While many countries around the world have ICT in education policies, they are scarce in the South Pacific. Within that region, Fiji is well placed in the education sector with respect to its growing use of ICT. However, Fiji has no national ICT policy at the moment, leaving organisations and schools to adopt and adapt international standards when formulating their ICT policies and strategic plans. Education in Fiji is guided by a number of policies, which can be found on the MOE website.[11] These policies were developed in alignment with Fiji's Education Act 1978. Students in Fiji also have ICT-enabled learning; currently, guidelines for this are provided by the Education Act, the MOE, and individual schools. For Fijian primary and secondary schools, it is mostly the school heads who are responsible for integrating ICT into their school's strategic plan. Once this is done, school staff follow the guidelines for using digital tools and resources in learning and management activities.

However, this does not happen in every Fijian school; while some schools have established strategic plans leveraging ICT for enhanced learning and management, other schools either lack such plans or have staff who are unaware of their existence. The result is a wide, unwarranted divide in the use of digital tools and resources. Rural and urban schools have different levels of ICT use, associated with various factors documented in the present report. This is the strongest indicator of the need for a dedicated ICT in education policy to ensure

[11] https://www.education.gov.fj/?page_id=9650

the creation and application of standard strategic plans that leverage ICT in education. With such a policy in place, every teacher and school administration will be sufficiently upskilled and made aware of the importance and need for ICT in education to ensure that each school's strategic plan objectives are met. This document can serve as a guideline for integrating ICT policy into Fiji's education sector. As per our situational analysis of Fiji's schools, the following sections discuss the status of these institution's digital tools and resources.

Access to ICT in Fiji Schools

Many schools in Fiji have adequate access to appropriate ICT resources to facilitate learning, including hands-on experience with PCs, digital devices, and related tools. However, a number of schools, especially in rural and remote areas, do not have access to computers or computer labs. There are also cases where schools lack teachers with an ICT background or the relevant qualifications to teach computing subjects. The education sector in Fiji needs to reexamine the distribution of resources in terms of each school's number of PCs and digital devices, and the number of teachers with IT skills and qualifications. There is also a dire need to address the issues of Internet connectivity and reasonably priced data plans being available for students, staff, and management to realistically achieve an acceptable use of ICT in school education. When providing lifelong and life-wide learning, resource availability is important. Since Fiji's education sector is integrating ICT for learning and teaching, all schools need to be provided with equitable access to digital tools and resources. The availability of teachers with IT skills and knowledge is also very important for all schools, as these teachers will be the ones to nurture students' IT skills and help create a dynamic, engaging, and more collaborative learning and management environment. Schools' use of digital tools and resources must also be aligned to a national ICT policy and an ICT policy that guides the implementation of ICT in education.

Teacher Preparedness, Skills, and Use of ICT in Teaching

The management and school administrators in some Fijian schools, through their digital plans and strategies, involve teachers in evaluating the advantages and disadvantages of using ICT for learning and further motivate them to use digital tools for accessing and assessing student learning and managing classroom activities. The investigation carried out showed that many teachers use ICT tools and technologies for the learning process and encourage their students to use them for their learning activities as well. In these cases, the teachers have the IT qualifications and teacher training to leverage ICT for education and associated pedagogies. However, some schools in Fiji have no digital plans or strategies in place, nor are the teachers involved in developing a digital plan/strategy for their school. This state is reflected in the school's lack of focus and inability to address the issue of their teachers' ICT competencies. Some teachers lack not only the required ICT skills and knowledge but also the opportunities for ICT upskilling and nourishment.

The present study shows a wide ICT divide amongst schools. The MOE strongly encourages all schools to use ICT for teaching and learning, so ICT-enhanced teaching practices should therefore be practised in schools. Professional development for all teachers should be carried out on a frequent basis so that teachers have the appropriate skills to use ICT tools and resources for learning and management. There is a growing need to integrate digital devices into learning and pedagogies. Moreover, the concepts of blended learning, and open learning should be more formally and strategically introduced in schools so as to build teachers' capacities to teach in an integrated environment. An equitable and standardised professional development plan for teachers will also prepare Fiji's teachers and schools for emergency remote teaching, such as in times of pandemics.

Students' Access to and Use of ICT for Studying

Most Fijian schools have access to digital tools and resources, and our background study showed that sufficient devices are available for learning. The teachers in some schools have also successfully incorporated ICT into their teaching–learning activities. Some schools encourage computing as a co-subject from Year 1, while some students only gain access to computers when they reach Year 11 and take computer studies as a subject. This points to a wide disparity in students' use of ICT in schools for their education.

Some schools also provide digital devices and resources for learning to students with disabilities. There are organisations in Fiji that support the MOE in providing the needed facilities and resources for these students. However, this is again not seen in all schools, pointing to a general disparity in terms of school resources and students' access to them. The secondary and primary school curricula must also be curated into an online format so that online versions are available to all teachers and students, for all subjects and at all levels. Content creation can be done by existing teachers for their respective subjects at each level. If the teachers do not have the required ICT skills, training should be provided, or experts/consultants can be hired to convert content to an appropriate online version.

Learning with ICT is the vision for all Fijian students, so teachers and learners must have equitable access to ICT resources. The government, NGOs, and other stakeholders in Fiji and abroad need to collaborate to provide inclusive and equitable access to ICT resources to all students, in all Fijian schools.

Digital Educational Resources

The concept of digital educational resources is new to many schools and teachers in Fiji, with only a few teachers knowing about OER policies and repositories. Some schools do benefit from awareness and training sessions organised by external organisations, but these are mostly cohort-based and not currently available to all schools and teachers. Since Fiji's education system is transitioning to digital education, the MOE is strongly encouraged to organise training workshops for students, teachers, and management to boost their awareness and use of digital education resources. Teachers can also be supported and upskilled for content creation or creating OER and digital resources for students. OER development can also be done in local languages other than English. The OER created by teachers, experts, consultants, and students can be managed at one centralised repository by any ISP company in Fiji, or even by the MOE. The repository can be shared with all students to enforce collaborative and creative learning, and they can also be encouraged and mentored to create and share new digital resources. COL has already created a repository of OER[12] for Fiji, which can be further used and adapted by the MOE.

ICT Leadership in Schools

The background study showed that a number of schools in Fiji had strategic plans for the use of ICT in their schools. These plans were aligned to MOE policies, and the school administrators ensured that teachers and students followed the ICT guidelines. The schools in Fiji also emphasise the use of ICT for learning and show an awareness of critical issues such as cybersecurity and cyberbullying, both on an ongoing basis during classes and through a dedicated week during the school's academic year. However, getting parents, guardians, and

[12] https://fji.oer4pacific.org/

communities involved can help with developing a more holistic approach to addressing the issue of sustainable cybersecurity measures and cyberhealth.

Upskilling workshops for teachers and administrators can be organised, whether internally or externally, so they can improve their ICT skills and have more confidence about using digital tools and resources in education. However, such benefits and opportunities are currently available only to some schools. It is also notable that digital literacy remains an issue for Fijian teachers and students. This again shows the dire need for digital literacy plans and strategies so that ICT in education can be successful and benefit entire communities.

All in all, the MOE needs an ICT in education policy to support technology-driven learning in Fiji that enables equal access for all students, ensures all schools are well equipped with learning resources, guarantees professional development for teachers so they can incorporate ICT into teaching and learning, gives schools access to a centralised OER repository, engages teachers in the development of online versions of school curricula, and hence maintains and boosts the quality of education in Fiji. A national ICT in education policy will also drive openness and create opportunities for crisis-resilient learning in Fiji's education system.

Chapter 5: Conclusions and Recommendations

The integration of ICT in education systems is essential for enhancing educational outcomes, ensuring equitable access, and preparing students for a digitally driven job market. Moreover, integrating ICT tools and technologies in education can bridge gaps and provide equitable access to quality learning resources for all students, regardless of their geographical location or socio-economic background. ICT-competent graduates and communities will have the ability to facilitate successful digital transformation, e-governance, and ICT-driven sustainable economies. For a developing country like Fiji, integrating ICT tools and technologies, and ensuring equitable access and the inclusive, safe facilitation of ICT-driven education remain challenging due to persistent issues of network infrastructure, cost, low resource availability, a dearth of community-inclusion approaches, a digital skills gap, and the need for professional development in teachers and digital skills development in students. The results from this empirical study showed that although the MOE in Fiji has been providing ICT tools, resources, and professional training for staff in Fijian schools, substantial challenges remain when it comes to facilitating ICT-driven education. Amongst a number of reasons is the fact that while some schools have online access — for example, in urban areas — the rural and remote schools are deprived of access to the Internet and to digital tools and resources. As such, not all students have access to ICT-driven education. Moreover, the teachers in many Fijian schools are unaware of ICT policies and the use of OER, and hence are unable to educate the students on multiple aspects of online learning, cyberspace etiquette, ethical issues in relation to OER, or technological advancements that can be used for learning, to mention a few major areas.

The study results also showed that: teachers and students in Fiji do not have equitable access to ICT for teaching and learning; there are knowledge gaps on ICT-driven learning; the digital and gender divides in schools are growing; and some schools lack digitally literate experts. Therefore, the MOE should consider adopting the following data-driven and evidence-based recommendations proposed by the research team:

i. A strong ICT infrastructure is fundamental for effectively integrating ICT in education and managing education systems. This includes the provision of the necessary hardware, software, and connectivity. Strategic investments in ICT infrastructure will support innovative teaching methods and facilitate the successful use of digital learning tools and resources. The in-house development and dissemination of context-heavy digital learning resources, including OER, videos, and podcasts, are critical. Teachers should be trained to create and utilise these resources to foster collaborative and creative learning environments. A centralised repository for OER and other digital resources can ensure that all students have access to high-quality educational materials.
ii. It is vital to establish a structured mechanism for monitoring and evaluating the implementation and utilisation of digital tools and resources in education. This includes collecting data, conducting assessments, and making necessary adjustments to enhance the effectiveness of ICT initiatives. Collaboration with academic experts and industry partners can provide insights, drive continuous improvements, and help with the inclusion of real issues and data. Professional development for educators is essential to ensure they are equipped to integrate ICT into their teaching practices and manage their courses effectively. Regular training and upskilling workshops will

enhance their digital literacy and their confidence in using digital tools and resources, ultimately improving student learning experiences and outcomes.

iii. With the increasing use of AI in education, it is crucial to address cybersecurity concerns. Implementing policies that promote good cyber-hygiene practices and that raise awareness about cybersecurity and cyberbullying are necessary to protect students and educational data. Periodic assessments of cyber-hygiene need to be carried out with ready-to-deploy intervention modules. Along similar lines, managing e-waste sustainably is also an important aspect of integrating ICT with education. Developing clear guidelines and policies for e-waste management will ensure that ICT initiatives are environmentally responsible, risk-free, and sustainable.

iv. Effective governance and management structures are required to oversee the implementation of ICT policies in education. This includes establishing clear roles and responsibilities, creating and instituting positions, ensuring accountability, and fostering collaboration among stakeholders. By adopting these comprehensive measures, Fiji can create a digitally empowered educational environment that promotes equity, enhances learning outcomes, and prepares students for future challenges. The strategic integration of ICT in education will foster innovation, support lifelong learning, educate a wider swathe of the community, and contribute significantly to the overall development and sustainable economy of the nation.

The Way Forward

This report clearly shows that in Fiji, there is currently no uniformity in the practice of ICT integration or the availability of resources, although several efforts are in place and have been initiated by the government. Adopting a policy for ICT in education, along with the National Digital Strategy for Fiji, will also provide more focus on the existing OER policy and help in forming a coherent strategic plan for the education sector. Using the UNESCO (2022) master plan and guidelines for ICT in education policies, we recommend that the MOE consider taking the following steps toward adopting the policy:

1. Create a national steering committee for ICT in education, covering a range of stakeholders from related ministries (including the Ministry of Finance), schools, tertiary institutions, the Fiji Teacher Registration Authority, and teacher professional associations.
2. Organise a national consultation to discuss this report, along with a draft ICT in education policy and master plan.
3. Distribute the policy draft to elicit public comments and increase awareness.
4. Adopt the policy by appropriately revising the draft, and make provision for a suitable budget to implement the master plan.
5. Continue to review the implementation regularly through the national steering committee.

This general approach ensures that policies are not only comprehensive but also culturally and contextually relevant as well as feasible. Aligning the ICT in education policy with national strategies such as the 2023 Denarau Declaration and the National Digital Strategy for Fiji will create a cohesive framework that supports digital transformation across all educational levels and that involves continuous stakeholder engagement, investments in infrastructure and capacity building, and an evidence-based commitment to sustainable practices.

Additionally, fostering a culture of lifelong learning and digital literacy will empower educators and students to adapt to technological advancements. Through these means, Fiji can harness the full potential of ICT to transform its education system, making it more inclusive, effective, and future-ready. These strategies should be integrated with the broader national development goals, ensuring that educational advancements contribute to the overall growth and prosperity of the nation.

By adopting these comprehensive recommendations, Fiji's Ministry of Education can create a digitally empowered, sustainable educational environment that promotes equity, enhances learning outcomes, and prepares students for future challenges. The strategic integration of ICT in education will foster innovation and entrepreneurship, support lifelong learning, and contribute significantly to the country's overall development and the achievement of a sustainable economy. In a small nation like Fiji, education that prepares future generations of Fijians for a rapidly changing world is the most vital tool for progress and development, so national policies and regulations on ICT in education are urgently needed.

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OCTOBER 2024