



**MINISTER OF HIGHER
EDUCATION, RESEARCH, SCIENCE,
TECHNOLOGY & SPORT**



Tel: + 675 301 2011/ 301 2010
Fax: + 675 325 0622
Location: Level 4, AOPI Center, WAIGNI, NCD

P.O. Box 5117
BOROKO
National Capital District
Papua New Guinea

January 06, 2025

**POLICY ON THE DIGITALIZATION OF PAPUA NEW GUINEA
UNIVERSITIES AND RESEARCH INSTITUTES**

Introduction

Digital transformation serves as a cornerstone for enhancing the quality, accessibility, and efficiency of higher education in Papua New Guinea (PNG). Recognizing the critical role of technology in shaping the future of education, this policy is developed in alignment with the National Executive Council (NEC) Decision No. 129/2020, dated April 29, 2020. It establishes a comprehensive framework for the implementation of the National Higher and Technical Education Management Information System (NHEMIS) and other strategic digital initiatives.

The primary objective of this policy is to integrate global academic standards into PNG's higher education system while ensuring that local priorities and unique challenges are effectively addressed. By leveraging digital innovation, the policy aims to foster a modern, inclusive, and resilient education ecosystem capable of meeting the evolving demands of the 21st century.

I. Policy Objectives

1. Enhance Efficiency and Transparency:

- a. **Centralized Digital Management System:** Implement a robust, unified digital platform that integrates student information systems, financial management tools, and academic records to improve operational efficiency and reduce administrative overhead.
- b. **Data Security and Integrity:** Incorporate advanced cybersecurity measures to safeguard sensitive information and ensure compliance with data protection regulations.
- c. **Real-Time Reporting and Monitoring:** Enable real-time data analytics and reporting to support evidence-based policymaking and enhance institutional accountability.

- d. **Capacity Building:** Train institutional staff and administrators in the use of digital systems to ensure seamless adoption and operational excellence.

2. Promote Research and Learning:

- a. **Access to Global Knowledge Resources:** Establish partnerships with international digital libraries and academic databases to provide faculty and students with access to cutting-edge research and learning materials.
- b. **Research Funding and Grants:** Encourage and support faculty in applying for international research grants and funding opportunities to advance groundbreaking studies.
- c. **Knowledge Dissemination:** Create platforms for the publication and dissemination of research findings through open-access journals and institutional repositories.
- d. **Interdisciplinary Research Initiatives:** Promote collaborative research across disciplines to address complex national and global challenges such as climate change, public health, and sustainable development.

3. Foster Academic Collaboration:

- a. **Joint Degree Programs:** Develop and promote dual and joint degree programs with reputable international institutions to enhance the global recognition of PNG qualifications.
- b. **Exchange Programs:** Facilitate structured student and faculty exchange programs to foster cross-cultural understanding, professional growth, and academic enrichment.
- c. **Research Partnerships:** Establish formal agreements with international universities to undertake joint research projects, share resources, and co-author publications.
- d. **International Conferences and Seminars:** Host and participate in international academic events to showcase PNG's academic potential and engage with global thought leaders.
- e. **Technology-Driven Collaboration:** Utilize virtual meeting platforms and collaborative research tools to enable continuous interaction among institutions across geographic boundaries.

II. Ensure Responsible Use of AI:

Develop guidelines for the ethical and effective use of Artificial Intelligence (AI) by students and staff. This involves establishing clear policies to prevent misuse, encouraging the adoption of AI tools for academic purposes, and promoting awareness of the potential societal impacts of AI technologies.

a. Develop Academic Policies:

Institutions will create detailed policies governing the integration and application of AI in teaching, learning, and research. These policies

will outline acceptable use cases, restrictions, and compliance requirements.

b. Promote Ethical AI Usage:

Provide robust training programs for staff and students to ensure they understand the ethical considerations of AI use. These will cover data privacy, academic integrity, and the prevention of algorithmic bias.

c. Support AI Adoption in Academia:

Encourage the use of AI tools for personalized learning, automated grading, research analytics, and administrative efficiency while ensuring transparency in AI decision-making processes.

d. Monitor and Mitigate Risks:

Establish oversight committees within universities to monitor AI implementation, assess potential risks, and propose safeguards. Regular audits will ensure adherence to established guidelines and policies.

e. Build AI Awareness:

Conduct workshops and seminars to educate stakeholders about the opportunities and challenges posed by AI, fostering a culture of responsible innovation.

III. Bridge Digital Gaps:

Address infrastructure and capacity challenges to ensure equitable access to digital tools and resources across all universities and research institutes. This includes targeted investments in rural and remote institutions to reduce disparities and ensure that all students and staff benefit from digital transformation efforts.

a. Infrastructure Development:

- Expand broadband internet access to underserved and remote areas by collaborating with telecommunications providers and leveraging government infrastructure projects.
- Equip universities and research institutes with state-of-the-art ICT infrastructure, including high-speed internet, computer labs, and digital classrooms.

b. Capacity Building:

- Provide comprehensive training programs for faculty and administrative staff to enhance their digital skills and ensure the effective use of technology in teaching, learning, and management.

- Offer workshops and tutorials to students, focusing on essential digital competencies such as navigating online resources, using academic software, and ensuring cybersecurity awareness.

c. Affordable Access to Technology:

- Partner with technology providers to supply affordable laptops, tablets, and other digital devices to students and staff, ensuring no one is left behind due to financial constraints.
- Subsidize internet connectivity for students and staff in rural and remote areas through government or institutional support schemes.

d. Development of Local Content:

- Encourage the creation of localized digital content in multiple languages, making educational resources more accessible and relevant to diverse communities across Papua New Guinea.
- Develop e-learning platforms tailored to the PNG higher education context, ensuring compatibility with low-bandwidth environments.

e. Sustainability Initiatives:

- Promote the adoption of energy-efficient and sustainable technologies, such as solar-powered ICT setups, particularly for institutions in off-grid locations.
- Establish maintenance and support teams to ensure the longevity and reliability of ICT infrastructure in remote institutions.

f. Monitoring and Evaluation:

- Implement a robust monitoring framework to regularly assess the impact of digital transformation efforts, identifying areas for improvement and ensuring equitable progress across all regions.
- Collect feedback from students, academic and non-academic staff, graduates and stakeholders to refine strategies and prioritize investments based on demonstrated needs.

IV. Preparing Students to Be Work-Ready for a Digital Workplace

Equip students with the skills, knowledge, and competencies required to thrive in a rapidly evolving digital economy, ensuring they are prepared to contribute effectively to a modern workforce.

a. Integrate Digital Literacy Across Curricula:

- Embed digital literacy as a core component of all higher education programs, ensuring that students develop proficiency in essential digital tools and technologies.
- Provide training in emerging technologies such as artificial intelligence (AI), data analytics, cloud computing, cybersecurity, and blockchain.

b. Enhance Technical and Vocational Education and Training (TEVT):

- Design and implement targeted TEVT programs that align with the needs of industries in Papua New Guinea and the global market.
- Incorporate hands-on learning experiences, including internships, apprenticeships, and simulated work environments, to bridge the gap between academic learning and practical application.

c. Develop Industry Partnerships:

- Foster collaborations between universities and industry stakeholders to design curricula that reflect current and future workforce demands.
- Establish mentorship programs, guest lectures, and industry-driven projects to provide students with real-world insights and professional networks.

d. Promote Lifelong Learning and Adaptability:

- Cultivate a mindset of continuous learning and adaptability by offering short courses, micro-credentials, and online certifications in cutting-edge fields.
- Encourage students to pursue interdisciplinary skills that combine technical expertise with critical thinking, creativity, and problem-solving abilities.

e. Strengthen Career Readiness Programs:

- Establish career development centers in universities to provide guidance on resume building, job searching, and interview preparation.
- Offer workshops on essential soft skills, such as communication, teamwork, and leadership, which are critical for success in a digital workplace.

f. Leverage Digital Tools for Workforce Preparation:

- Utilize AI-driven career guidance platforms to help students identify suitable career paths based on their strengths, interests, and market trends.
- Implement e-portfolios to enable students to showcase their projects, skills, and achievements to potential employers.

g. Expand Access to Global Opportunities:

- Encourage participation in virtual internships, remote work programs, and international online courses to provide exposure to global work environments.
- Facilitate cross-border academic collaborations that enhance students' ability to work in diverse, multicultural teams.

Through the integration of digital skills into education and a strong focus on employability, this policy aims to produce a workforce that is not only technologically proficient but also adaptable, innovative, and competitive on both national and global stages. Also, by bridging digital gaps, this policy ensures that higher education institutions in Papua New Guinea can leverage technology as a powerful equalizer, enabling inclusive and transformative growth in academic and research excellence. This policy aims to modernize Papua New Guinea's higher education

sector, positioning it as a driver of national development and a contributor to the global knowledge economy.

V. Scope

This policy applies comprehensively to all public and private universities, research institutes, and higher education institutions across Papua New Guinea. It extends its governance to include affiliated colleges, specialized training centers, and other research and academic organizations operating within the higher education sector.

Furthermore, this policy serves as a guiding framework for institutions engaged in the delivery of technical, vocational, and professional education, ensuring consistency in the adoption of digital transformation initiatives. It is designed to standardize practices, promote equitable access to technology-driven resources, and enhance institutional capacities for sustainable academic and research excellence.

The scope also incorporates mechanisms to monitor and evaluate compliance, fostering alignment with national priorities and international best practices in higher education and research. By encompassing a wide array of stakeholders, this policy aims to create a unified and cohesive higher education ecosystem capable of addressing the diverse needs of students, faculty, and the broader PNG community.

VI. Policy Alignment:

This policy aligns with:

- a. **Policy on Shared Academic Programmes Between Papua New Guinea Universities and Overseas Universities:** Encourages joint degrees and online programs with international institutions.
- b. **Policy on Academic and Research Cooperation Between Papua New Guinea Universities and Research Institutes:** Promotes digital platforms for collaborative research and knowledge sharing.
- c. **Strategic Plan for Innovation and Sustainability in Funding for Papua New Guinea Universities and Higher Education Institutions.** Encourages diversify funding sources to reduce reliance on government funds, fostering long-term financial stability and resilience for the institution.

VII. Key Components

1. Implementation of NHTEMIS

- Engage existing service providers in PNG for the design, development, and rollout of NHTEMIS, leveraging systems like PCG Academia's UNI10 Software and e-library ProQuest.
- Ensure interoperability between institutional systems to enable real-time data sharing and reporting.

2. Digital Infrastructure Development

- Partner with telecommunications providers to ensure reliable internet access for all campuses.
- Invest in ICT infrastructure, including servers, cloud storage, and cybersecurity measures.

3. Digital Learning Resources

- Establish institutional access to e-libraries, such as ProQuest, to support teaching and research.
- Develop online learning platforms for flexible and blended education delivery.

4. Responsible Use of AI

- Develop academic policies to manage the integration and use of AI tools in teaching, learning, and research.
- Provide training for staff and students on ethical AI usage, emphasizing data privacy and academic integrity.
- Promote a culture of innovation by encouraging the exploration of AI applications in education while safeguarding ethical standards.
- Develop institutional support systems to guide students and staff in responsible AI experimentation and usage.

5. Capacity Building

- Conduct regular training programs for DHERST staff, faculty and administrative staff on digital literacy and system usage.
- Introduce digital skills modules into university curricula to prepare students for the modern workforce.

6. Monitoring and Evaluation

- The Department of Higher Education, Research, Science, and Technology's (DHERST) will through its Wings conduct regular monitoring and evaluation.
- DHERST's Research Innovation Wing will oversee the implementation and performance of digital initiatives.
- DHERST will use key performance indicators (KPIs) such as system adoption rates, user satisfaction, and research output to assess progress.

VIII. Additional KPIs Include:

- Digital Infrastructure Utilization:** Measure the availability and usage of ICT resources, including internet bandwidth and digital tools across institutions.
- Training Effectiveness:** Assess the impact of digital literacy programs through pre-and post-training evaluations of staff and students.
- Student and Faculty Engagement:** Monitor participation in online learning platforms, digital research collaborations, and shared academic programs.
- Compliance and Security Metrics:** Evaluate adherence to cybersecurity standards and the implementation of ethical AI guidelines.

- e. **Innovation Outputs:** Track the number of digital innovations, AI-driven solutions, and research projects emerging from universities and research institutes.

Establish periodic reviews and reporting mechanisms to ensure transparency and continuous improvement.

IX. Stakeholder Engagement

The effective implementation of this policy necessitates a collaborative, multi-stakeholder approach that leverages the strengths and contributions of various entities within Papua New Guinea's higher education ecosystem. Key stakeholders include:

- a. **Universities, Research Institutes, and Colleges:** These institutions are central to the adoption, integration, and utilization of digital tools and systems. Their role involves aligning institutional strategies with the policy objectives, building capacity among faculty and staff, and fostering a culture of innovation in teaching, learning, and research.
- b. **Service Providers:** Technology and service providers play a critical role in the customization, deployment, and maintenance of digital platforms, such as the National Higher and Technical Education Management Information System (NHTEMIS). Their expertise ensures that systems are tailored to meet the unique needs of PNG's higher education sector, are user-friendly, and are resilient against technological challenges.
- c. **The Department of Higher Education, Research, Science, and Technology (DHERST):** DHERST provides overall policy oversight, ensuring alignment with national development goals and global standards. Additionally, the Department is responsible for securing funding, monitoring progress, and addressing barriers to successful implementation.
- d. **Research Institutes:** These institutes contribute through collaborative digital research initiatives, generating insights and innovations that enhance the efficacy of digital systems. Their research further informs evidence-based policymaking and promotes advancements in the integration of emerging technologies.
- e. **Development Partners and Donors:** International and local development partners, as well as donor organizations, can provide technical expertise, capacity-building support, and funding to strengthen implementation efforts.
- f. **Students and Faculty:** As end-users, students and faculty are integral to the successful adoption of digital platforms. Their active participation, feedback, and engagement ensure that the systems meet the practical needs of teaching, learning, and administration.

We should be fostering a unified and inclusive approach to stakeholder engagement, this policy seeks to build a robust and digitally empowered higher education framework that advances the quality, accessibility, and global competitiveness of Papua New Guinea's higher education institutions.

X. Funding and Sustainability

The successful implementation and long-term sustainability of digital transformation initiatives within Papua New Guinea's higher education sector will require a diversified and strategic approach to funding. Financial resources will be sourced from the following key avenues:

- a. **Government Allocations through the Department of Higher Education, Research, Science, and Technology (DHERST):** The government will provide a foundational financial commitment through DHERST, ensuring that digitalization initiatives are adequately supported. These allocations will be used to cover the initial costs of infrastructure development, system implementation, and ongoing maintenance. DHERST will also play a key role in securing additional funding to ensure continuity and growth of digital initiatives in alignment with national priorities for education and technology.
- b. **Partnerships with Development Agencies and Private Sector Stakeholders:** Collaboration with international development agencies and private sector partners will be a critical element in securing additional funding and technical support. These partnerships will provide access to expertise, technological resources, and funding mechanisms, which can help offset the costs associated with digital infrastructure, capacity building, and research. These stakeholders may also provide opportunities for innovation, scaling, and sustainability through their networks and resources.
- c. **Cost-Sharing Models with Universities:** In the interest of long-term sustainability, universities will be encouraged to adopt cost-sharing models that ensure the ongoing operation and development of digital systems. These models will be designed to balance public funding with institutional contributions, enabling universities to invest in the upkeep and expansion of digital infrastructure. Additionally, universities will be encouraged to explore alternative revenue streams, such as research grants, collaborative projects, and technology-driven partnerships, which can contribute to the financial sustainability of digitalization initiatives.
- d. **Innovative Funding Mechanisms:** To enhance sustainability, the policy will also explore the development of innovative funding mechanisms, including public-private partnerships (PPPs), donor-funded initiatives, and research-driven grants. These mechanisms can provide supplementary funding to address emerging needs and ensure that digital systems remain adaptable and responsive to the evolving demands of higher education.
- e. **Institutional Capacity Building for Financial Management:** It will be essential for higher education institutions to develop strong financial management systems to effectively utilize allocated funds and secure additional funding sources. Capacity-building initiatives will be implemented to equip universities with the necessary tools and expertise to manage digitalization projects sustainably, ensuring that the funds are allocated efficiently and used for their intended purposes.

We shall be adopting a multi-source funding strategy and promoting cost-sharing and financial sustainability, this policy aims to ensure the continuous development and scaling of digital initiatives within PNG's higher education

sector. This approach will not only provide the initial financial support but will also establish a framework for sustained investment in digitalization, ensuring that the sector remains competitive, resilient, and capable of meeting future challenges.

Conclusion

This policy provides a strategic and comprehensive framework for the digital transformation of Papua New Guinea's universities, research institutes, and higher education institutions. It ensures that they remain competitive, inclusive, and aligned with the dynamic global landscape of academic and technological advancements. The Government of Papua New Guinea, through the Department of Higher Education, Research, Science, and Technology, reaffirms its unwavering commitment to leveraging the transformative power of technology to enhance the quality, accessibility, and relevance of higher education in the country.

Digitalization is not merely a tool for modernization but a cornerstone for reshaping the nation's academic and research institutions to meet the demands of the 21st century. By embracing innovative digital platforms and systems, PNG's higher education institutions can align with international benchmarks, foster interdisciplinary research, and cultivate a workforce equipped with skills for the global digital economy.

The integration of cutting-edge technologies in learning, research, and institutional management will facilitate enhanced collaboration among universities, research institutes promote efficient information-sharing, and improve access to education for marginalized and remote communities. Furthermore, this transformation positions PNG as a regional leader in utilizing digital advancements to address local and global challenges.

In an increasingly interconnected world, the success of PNG's higher education institutions depends on their ability to innovate, adapt, and lead. This policy serves as a catalyst for fostering a robust academic and research ecosystem capable of driving sustainable national development, empowering the workforce, and contributing to the global knowledge economy. By prioritizing digital transformation, Papua New Guinea is not only future-proofing its higher education sector but also investing in the intellectual and socio-economic growth of the nation.

Signed by:



HON. KINOKA HOTUNE FEO, MP

Minister of Higher Education, Research, Science, Technology, and Sport