# 19th RUFORUM ANNUAL GENERAL MEETING 2023

## DIGITAL SCIENCE SOLUTIONS: LEVERAGING ARTIFICIAL INTELLIGENCE AND RECENT ADVANCES IN DIGITIZATION FOR TEACHING, LEARNING AND POLICY IN AFRICA

**Date: Wednesday 1 November, 2023 (1100-1300 WAT, GMT+1)**

**Venue:** Meeting Room A, Palais des Congrès, Yaoundé, Cameroon

## Concept Note

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### Background

Africa is the world's youngest continent with a growing demand for education. A recent assessment on the United Nations Sustainable Development Goal 4 on quality education reported slow progress had been made in spite of considerable improvement in school enrolment. The study recommended intensification of digital connectivity for teaching and learning and integration in the economy. Indeed, during and after the COVID-19 Pandemic, the role of digitization in education and other sectors of the economy intensified. This coupled with increased data analytics as well as other opportunities offered by Big Data[1] and Artificial Intelligence[2] (AI) can strengthen learning and inclusivity in higher education, research and policy. In recent years, Africa has witnessed a rapid growth in digital technologies and AI, paving the way for transformative changes in the economy. The higher agricultural education sector, in particular, has immense potential to benefit from the advancements in digital technologies and AI. Indeed, a number of investments to enhance education and research for development inclusion and quality, are ongoing, but could be escalated with the new opportunities of AI and big data. As we focus on ***Transforming Higher Education to Sustainably Feed and Create Prosperity for Africa,*** the theme for RUFORUM's 2023 AGM, digitization of higher agricultural education, research and policy driven by big data analytics is of great interest. This side event therefore, is organized to interrogate the opportunities and challenges of leveraging artificial intelligence and recent advances in digitization for teaching, learning and policy research in Africa. Additionally, during this RUFORUM and partners will share progress made in the implementation of one of its RUFORUM's flagship programmes, the African Digital Agriculture Programme (AfriDAP) with special interest on Pillar one, which focuses on supporting digital learning and sharing technologies and pillar two which focuses on Data Science. RUFORUM will also seek for partnerships to operationalise all the three pillars of AfriDAP in the session.

[1]Extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations.

[2]Artificial intelligence is a field of science, that combines computer science and robust datasets, to enable problem-solving especially by machines.

## The aim and objectives of the session

The aim of this session is to explore the potential of digital technologies and artificial intelligence (AI) in improving teaching and learning practices in Africa. The meeting will bring together researchers, educators, policymakers, and technologists to discuss and share insights on the use of digital tools and AI applications in educational settings. The specific objectives of the meeting are:

a. Facilitate discussions on the potential benefits of AI in education, such as personalized learning, adaptive assessments, and intelligent tutoring systems. Through this objective, participants will interrogate the concerns and challenges related to data privacy, algorithmic biases, ethical considerations, and the digital divide, particularly in the African context. They will explore potential solutions to them.

b. Provide a platform for researchers, educators, policymakers, and technologists to network, share experiences, and establish collaborations especially on the use of digital technologies for education, research and outreach activities.

c. Identify policy implications and provide recommendations for policymakers to create an enabling environment for the integration of digital technologies and AI in education.

## Approach

This session will be held in a blended manner (virtual and in person), where some participants will attend face-to-face while others will attend virtually through a Zoom link. In order to achieve the objectives stated above, there will be three sub-sessions as indicated in the detailed programme.

**Session One** will set the scene for the meeting, highlighting progress made towards transforming Education in Africa through Digital Technologies and AI. It will include an opening address by one of the RUFORUM leaders and a Key Note address by an expert on digital technologies.

**Session Two** will focus assess the State of Digital Technologies and AI in African Education. Experts in the fields of higher education, digital technologies and AI will guide this discussion. Finally, a wrap-up session by the session moderator will be held to extract key deliverables and recommendations of the session.

**Session Three** will involve panel discussions that bring together leaders and practitioners to discuss policy implications, ethical considerations, and regulatory frameworks related to AI in higher education. The main interest will be to identifying policy implications and provide recommendations for policymakers to create an enabling environment for the integration of digital technologies and AI in higher education.

## Expected outputs

a. ***Insights and knowledge sharing***: Participants in the session will gain insights into the current state of digital technologies and AI applications in education in Africa. They will acquire knowledge about successful case studies, best practices, and innovative approaches being used to enhance teaching and learning outcomes.

b. **Policy recommendations**: The session is expected to highlight policy recommendations and strategies for policymakers at various levels (national, regional, institutional) to create an enabling environment

for the integration of digital technologies and AI in education. These recommendations may address issues such as infrastructure development, funding mechanisms, data privacy, ethics, and digital literacy.

c. **Collaboration and networking opportunities**: The session will provide a platform for researchers, educators, policymakers, and technologists to connect, network, and establish collaborations. Participants can share their expertise, exchange ideas, and explore potential partnerships for future research, development, and implementation of AI-powered teaching and learning solutions in Africa.

d. **Awareness and inspiration**: The session is expected to raise awareness about the potential benefits of digital technologies and AI in education and inspire participants to explore and adopt these solutions in their own educational contexts. It may showcase success stories, real-world examples, and cutting-edge innovations to motivate participants to embrace digital transformation in teaching and learning.

e. **Research directions and agenda**: The session may identify research gaps and highlight future research directions related to the use of digital technologies and AI in education in Africa. It can inspire participants to contribute to the field by conducting research, publishing findings, and advancing the knowledge base in AI-powered teaching and learning.

f. **Capacity building opportunities**: The session may provide information and resources for capacity building and staff professional development in the context of digital technologies and AI in education. It can highlight training programs, initiatives, and resources available to educators to enhance their digital literacy and pedagogical skills for effective integration of AI-powered tools.

g. **Action plans and implementation strategies**: Participants may develop action plans and implementation strategies to leverage digital technologies and AI for teaching and learning in their respective institutions or regions. These plans may include steps for piloting, scaling up, monitoring, and evaluating the effectiveness and impact of AI-powered solutions in diverse educational settings.

## Participants

In order for this session to be a success a number of stakeholders are invited. The following categories of participants will have different roles and expectations as outlined below:

a. **Researchers** and Academics: Scholars and researchers specializing in educational technology, artificial intelligence, data science, or related fields can provide valuable insights based on their research findings, case studies, and expertise. They can contribute theoretical frameworks, empirical evidence, and innovative approaches to enhance teaching and learning in Africa.

b. **Educators and academic staff**: Instructors, and educators who have experience or interest in leveraging digital technologies and AI in their classrooms can share their practical knowledge, challenges, and success stories. They can provide valuable feedback on the effectiveness and usability of AI-powered tools in real-world educational settings.

c. **Policymakers and Government Representatives**: Policymakers, government officials, and education ministry representatives can contribute by discussing policy frameworks, initiatives, and funding mechanisms aimed at promoting the integration of digital technologies and AI in education. They can also provide insights into regulatory aspects, data privacy concerns, and ethical considerations related to AI implementation in educational contexts.

d. **Technology and EdTech Companies**: Representatives from technology companies, EdTech start-ups, and solution providers that develop and offer digital tools, platforms, and AI-powered solutions for

education can share their products, innovations, and success stories. They can showcase how their technologies have been applied in African classrooms and discuss the potential impact on teaching and learning outcomes.

e. **Development partners and international organizations**: Representatives from international organizations and funding agencies interested in improving education in Africa through technology and AI can contribute their perspectives, initiatives, and funding opportunities. They can share insights into global trends, best practices, and collaborative projects that support the integration of digital technologies and AI in African education.

f. **Students**: Students from educational institutions in Africa can provide valuable input on their experiences and preferences regarding the use of digital technologies and AI in their learning environments. Their perspectives can help shape the discussion and inform the design and implementation of AI-powered solutions that cater to the needs of African students.

## Programme

| Time | Agenda item | Responsible party |
|---|---|---|
| **Session One: Setting the Scene** | | |
| **Session Chair:** Prof Jude Lubega, Vice Chancellor, Nkumba University | | |
| 11:00-11:05 | Opening remarks | Prof Patrick Okori, Executive Secretary, RUFORUM |
| 11:05-11:15 | Official Opening Address | His Excellency Dr Sidi Ould TAH, President, Arab Bank for Economic Development in Africa (BADEA) |
| 11:15-11:30 | **Key Note Address**: Transforming Education and African Economies through Digital Technologies and AI. Overview of the trends, challenges and opportunities. | Dr Molapo Qhobela, Deputy Vice-Chancellor for Institutional Change, Strategic Partnerships, and Societal Impact, University of Free State, South Africa |
| 11:30-11:40 | Plenary discussions | **ALL** |
| 11:40-11:45 | Official Photograph | |
| **Session Two: State of Digital Technology Applications and AI in African Education and the Economy**<br>**Session Chair:** Dr. Francis Otto, Director for ICT, Mountains of the Moon University, Uganda | | |
| 1145-1200 | **Key Note**: Digital Learning Platforms and AI powered systems for enhancing Learning Outcomes in African Universities | Eng. David Martin Amitu, RUFORUM |
| 1200-1210 | **Discussant 1:** The practice: Digital technologies for financial and knowledge inclusion in the Economy. | Satish Nagarashi, CIMMYT |
| 1210-1220 | **Discussant 2:** Opportunities for digital transformation of Africa: Perspectives from an Investment Bank. | Representative from Arab Bank for Economic Development in Africa (BADEA) |
| 1220-1230 | Discussions | ALL |

| Session Three: Policy implications, ethical considerations, and regulatory frameworks related to AI in education. | | |
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| **Session Chair:** Dr. Francis Otto, Director for ICT, Mountains of the Moon University, Uganda | | |
| 1230-1240 | **Lead Speaker:** Prof. Address Malata, Vice Chancellor, MUST (Malawi) | |
| 1240-1300 | **Panel:**<br>1. Dr. Precious Gawanani, Head of ODeL, LUANAR (Malawi)<br>2. Prof Muliaro Wafula, JKUAT (Kenya)<br>3. Mr. Omo Oaiya, Chief Strategy Officer, West and Central African Research and Education Network - WACREN (Ghana) | |
| 1300-1310 | Discussions | ALL |
| 1310-1315 | Closing Remarks | Prof. Nancy Chitera, Vice Chancellor of Malawi University of Business and Applied Sciences, Malawi |
| 1305-1400 | **Lunch Break** | |

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