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EDITORIAL

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Advancing Digital Transformation in Higher Education: Reflections on a Decade of the Sakai Learning Management System at the University of Ghana

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The rapid advancement of digital technologies has transformed higher education globally, reshaping how teaching, learning, assessment, and academic collaboration are conceived and delivered. Learning Management Systems (LMSs), once regarded primarily as repositories for instructional materials, have evolved into strategic infrastructures that support educational continuity, pedagogical innovation, and institutional resilience. Within many African universities, however, the pursuit of meaningful digital transformation has been accompanied by infrastructural constraints, uneven technological capacity, policy deficiencies, and socio-cultural resistance. Against this backdrop, the University of Ghana's experience with the Sakai Learning Management System over the past decade offers a compelling example of how an open-source platform can transition from a supplementary technological tool to a central pillar of institutional development.

This special issue brings together five interconnected studies that collectively examine, document, and critically reflect on different dimensions of the Sakai journey at the University of Ghana. Collectively, the contributions move beyond technical discussions of Learning Management Systems (LMSs) adoption to explore the organisational, pedagogical, and socio-cultural factors shaping digital transformation in higher education. The studies highlight that

successful LMS implementation depends not only on technology but also on effective leadership, strategic policy alignment, capacity building, and sustained institutional investment.

The opening article *From Kakai to Lifeline: Unpacking the Transformational Role of Sakai LMS for Seamless Academic Continuity During and Post-COVID*, chronicles the transformation of Sakai from what many users initially described as “kakai”, a colloquial expression used to characterise a complex or intimidating technology, into a vital mechanism for academic continuity during and after the COVID-19 pandemic. The study illustrates how an unprecedented period of disruption accelerated digital adoption, reshaped attitudes towards online learning, and facilitated the integration of Sakai into the University’s teaching and learning practices. In doing so, it highlights the capacity of crisis situations to stimulate institutional innovation and foster digital resilience.

Assessment, a critical component of digital education, forms the focus of the second article: *Exploring Language Learners’ Experiences and Perceptions of Sakai Online Exams at the University of Ghana*. The study highlights learners' experiences with Sakai-based assessments and offers valuable evidence regarding user acceptance of online examinations. Through an exploration of language learners’ experiences with Sakai-based online examinations, the study demonstrates generally positive student perceptions of digital assessment while also drawing attention to practical challenges, including the provision of special language characters and the need for enhanced technical support. By addressing these concerns, the study contributes valuable insights for institutions seeking to improve the accessibility, inclusiveness, and effectiveness of online assessment practices.

The third contribution *Leveraging Open-Source Learning Management Systems (LMS) for Resilient and Inclusive Higher Education in Ghana: Lessons from the Sakai LMS Journey* argues that open-source platforms offer significant opportunities for educational resilience, technological autonomy, and contextual adaptability. The study expands the discussion beyond a single institution by positioning open-source Learning Management Systems (LMSs) as strategic assets for higher education resilience. Rather than viewing LMS platforms simply as instructional technologies, the authors argue that open-source systems such as Sakai enable institutional adaptability, pedagogical flexibility, and technological autonomy. Their analysis reinforces the value of investing in governance, faculty development, and sustainable policy frameworks to maximize the long-term benefits of digital learning ecosystems.

Looking ahead, the fourth manuscript, *Rethinking Roles of Open-Source Platforms in Equipping Ghanaian Graduates for the Future of Work* shifts attention from educational delivery to graduate employability. It argues that open-source platforms possess enormous potential for developing collaboration, digital literacy, and lifelong learning competencies required in the future workforce. However, realizing this potential requires universities to move beyond using digital platforms merely for content distribution toward intentionally embedding them within curricula as tools for authentic skill development. The paper thus positions digital learning platforms not merely as delivery mechanisms but as environments for cultivating the competencies required in evolving labor markets. This perspective broadens the discourse on

digital transformation by connecting educational technology directly to national workforce development and economic competitiveness.

Completing the collection, the fifth article is a systematic review on, Factors Influencing Perceptions of Learning Management System Effectiveness in Ghanaian Universities provides a valuable synthesis of the evidence base underpinning LMS adoption and effectiveness. By identifying technological, institutional, human, and socio-cultural determinants of LMS perceptions, the review highlights findings that confirm that ease of use, digital self-efficacy, institutional support, and technical infrastructure remain essential determinants of successful LMS adoption. Equally important, the review identifies persistent gaps in understanding socio-cultural factors despite their significance in shaping user experiences and adoption behaviors. Thus, highlighting the need for context-sensitive research that reflects the realities of African higher education institutions.

Taken together, the studies presented in this special issue highlight several important lessons. First, digital transformation is fundamentally a human and organisational process rather than merely a technological endeavour. Institutional culture, leadership commitment, faculty engagement, student preparedness, and organisational learning significantly influence the success of technological innovations. Second, technology adoption succeeds when accompanied by investments in human capacity, leadership, and supportive policy environments. Third, open-source technologies provide valuable opportunities for universities in resource-constrained settings to build sustainable and locally responsive digital ecosystems. Finally, digital learning should not only improve access to education but also prepare graduates with the competencies required for increasing digital economies.

Beyond chronicling the development of Sakai at the University of Ghana, this collection makes a significant contribution to the expanding body of scholarship on digital transformation in African higher education. The studies challenge prevailing narratives that portray African universities merely as recipients of technological innovations by highlighting their ability to adapt, innovate, and generate contextually relevant knowledge that enriches global conversations on educational technology. Overall, the articles offer valuable theoretical, methodological, and practical insights for researchers, policymakers, institutional leaders, instructional designers, and educational technologists seeking to create more inclusive, resilient, and sustainable digital learning environments.

The findings demonstrate that when technology is strategically implemented and supported through inclusive policies, ongoing capacity development, and strong institutional commitment, it becomes much more than a technological tool. It serves as a catalyst for resilience, innovation, and meaningful educational transformation. As higher education continues to respond to technological developments, evolving learner needs, and emerging global challenges, the studies presented in this special issue underscore that digital transformation is neither a one-time achievement nor a finished process. Rather, it is a continuous institutional journey that demands vision, collaboration, adaptability, and long-term commitment. It is hoped that the contributions in this special issue will encourage further scholarly inquiry, support evidence-informed policy and practice, and motivate institutions across Africa and beyond to leverage

open-source learning technologies in ways that broaden access, improve educational quality, and strengthen the future of higher education.

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