

# **The Future of Odel: Evaluating the Role of Technology in Enhancing Personalised Learning Experiences in Higher Education. The Case of Zimbabwe Open University**

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## **Abstract**

The rapid evolution of technology has significantly influenced Open and Distance e-Learning (ODEL), paving the way for personalised learning experiences in higher education. This study investigates the integration of advanced technologies, such as Artificial Intelligence (AI), adaptive learning systems and intelligent tutoring platforms into ODEL frameworks to enhance individualised learning pathways. By analysing current literature and case studies, the research identifies how these technologies contribute to improved student engagement, academic performance and retention rates. Data generated for the study included interview guide, open-ended questionnaire and focus group discussions. Document analysis was also used to complement the other methods. A purposive sampling technique was used to select participants for qualitative data. A total of 21 participants were selected with 12 students (undergraduate and postgraduate), six academic staff members and three e-learning administrators. Findings indicated that personalised technology-enhanced learning environments foster greater learner autonomy, motivation and satisfaction. However, challenges such as digital literacy gaps, infrastructure limitations and the need for faculty training are also highlighted. The research underscores the importance of strategic implementation of personalised learning technologies in ODEL settings. It recommends institutional policies that support technological infrastructure development, continuous professional development for educators and the adoption of learner-centric pedagogical models. By addressing these areas, higher education institutions could effectively leverage technology to create more inclusive and effective personalised learning experiences, aligning with the future trajectory of ODEL.

**Keywords:** Artificial intelligence, adaptive learning systems, intelligent tutoring platforms, personalised learning, learner centric advanced technologies.

## **Background of Study**

The rapid evolution of digital technologies has reshaped higher education globally, especially in the domain of Open and Distance e-Learning (ODEL). Personalised learning, characterised by tailoring educational experiences to meet individual learners' needs, preferences and pace has gained global impetus. The rise of artificial intelligence (AI), adaptive learning platforms, learning analytics and intelligent tutoring systems has allowed for more responsive and learner-centred instruction, particularly in ODEL settings.

## **International Experiences**

Globally, institutions in North America, Europe and parts of Asia have made significant investments in personalised learning infrastructure. In the United States, platforms like Knewton and ALEKS have been integrated into higher education curricula, using AI to track learner progress and adapt content in real time (Holmes et al., 2023). European universities, particularly in Finland and the Netherlands, have piloted AI-powered virtual tutors and personalised digital dashboards to support lifelong learning, with promising results in student retention and engagement (UNESCO, 2023). In East Asia, South Korea and Singapore have

adopted large-scale national strategies focused on AI in education, leading to widespread implementation of learner-centric platforms (OECD, 2024). Despite these successes, global experiences also highlight common challenges, particularly regarding ethical use of student data, digital privacy and the over-reliance on automation in learning decisions (Ndlovu, 2024). These lessons underscore the need for balanced approaches that combine technology with sound pedagogical practices.

### **Regional (African) Experiences**

Across Africa, personalised learning is gaining traction, although the pace of adoption is varied. Countries like Rwanda, Kenya and South Africa have introduced adaptive learning systems in selected universities and teacher training institutions. For instance, Rwanda's partnership with Carnegie Mellon University has enabled the development of AI-based learning environments tailored to African learners (Theodorio et al., 2024). In South Africa, institutions like the University of Pretoria have integrated learning analytics and AI dashboards to track student performance and provide automated interventions (Mogoale et al., 2025). Nevertheless, widespread implementation across the continent is hindered by infrastructural gaps, low digital literacy and insufficient policy frameworks. A study by Hlongwane et al., (2024) emphasised that although there is enthusiasm for digital personalisation, most institutions lack the financial and technical capacity to sustain such innovations. Faculty resistance, outdated curricula and unreliable internet access are persistent constraints. Moreover, African educators have expressed concerns about the lack of culturally relevant AI systems, with most platforms developed in Western contexts (Theodorio et al., 2024).

### **Local (Zimbabwean) Experiences**

In Zimbabwe, personalised learning is still at an emerging stage, particularly within public ODeL institutions like Zimbabwe Open University (ZOU). Efforts to implement technology-enhanced education have accelerated since the COVID-19 pandemic, prompting increased adoption of e-learning platforms and digital teaching tools. However, full-scale implementation of AI and adaptive learning systems remains limited. A study by Tarisayi and Manhibi (2025) found that while ZOU and other institutions recognise the potential of AI in enhancing personalisation, deployment is hampered by weak infrastructure, limited staff training and high student-to-device ratios. ZOU has experimented with digital platforms such as Moodle, but these systems often lack robust adaptive features or real-time data analytics capabilities. According to Ndlovu (2024), even when technologies are available, educators are frequently not trained in their effective use, resulting in low uptake and underutilisation. Students, especially in rural areas, also face barriers such as poor connectivity, lack of devices and low exposure to digital learning environments.

Despite these challenges, there is growing interest in leveraging personalised learning to support the diverse and often non-traditional student population served by ODeL in Zimbabwe. Current research and stakeholder consultations suggest that with the right investment in infrastructure, educator development and policy alignment, institutions like ZOU could benefit significantly from the adoption of personalised, AI-supported learning models (Pilling, 2024; Mogoale et al., 2025).

### **Statement of the Problem**

Despite increasing adoption of technology in higher education, many ODeL institutions in Zimbabwe, including ZOU, face significant challenges in implementing personalised learning. While there is growing evidence internationally of the benefits of AI-driven and adaptive learning technologies, their integration into local ODeL frameworks remains limited and inconsistent. The problem lies not only in the availability of technology but in its effective

deployment to support individualised learning pathways. There is a pressing need to evaluate how current technologies are enhancing or failing to enhance personalised learning in Zimbabwe's higher education sector.

### **Purpose of the Study**

The purpose of this study is to evaluate the role of advanced technologies in enhancing personalised learning experiences within ODeL frameworks, using Zimbabwe Open University as a case study. Specifically, the study seeks to address the following research questions:

### **Research Questions**

1. What are the types of personalised learning technologies currently in use at ZOU?
2. How does personalised learning impact on student engagement, academic performance and retention?
3. Are there any challenges faced by both educators and learners in using these technologies?
4. What are the recommended strategies for effective integration of technology into personalised learning systems?

### **Literature Review**

This section provides a critical overview of the body of knowledge surrounding personalised learning experiences in higher education, particularly within the context of Open and Distance e-Learning (ODeL). It covers the conceptual and theoretical frameworks guiding the field, current scholarly understanding, research gaps, methods used in existing studies and the relevance of prior research to this study.

### **Conceptual Framework**

The conceptual framework of this study is grounded in the notion of personalised learning, a learner-centred approach where content, pace, assessment and instructional strategies are tailored to individual student needs, goals and learning styles. Technology-enabled personalisation relies on tools such as Artificial Intelligence (AI), adaptive learning systems, intelligent tutoring platforms and learning analytics. This framework places the learner at the centre, supported by data-driven technologies that allow for differentiation and continuous feedback (Holmes et al., 2023; UNESCO, 2023).

### **Theoretical Framework**

Several theoretical models underpin research on personalised learning in ODeL:

- Constructivist Learning Theory (McLeod, 2025) emphasises active learning where students construct knowledge based on experiences. Personalised learning aligns with this by providing tailored experiences that adapt to the learner's level and pace.
- Self-Determination Theory (SDT) (Ryan & Deci, 2000) focuses on motivation and posits that students perform better when learning experiences support autonomy, competence and relatedness. Adaptive systems foster these elements by giving learners control and timely support.
- Connectivism (Siemens, 2005) is relevant to digital learning. This theory suggests that knowledge is distributed across networks and learning involves the ability to access and navigate these networks. AI and adaptive platforms facilitate such connections in ODeL.

These frameworks inform the design and evaluation of personalised learning technologies and justify their relevance to contemporary education.

### **Types of Personalised Learning Technologies Currently in Use at ZOU**

Zimbabwe Open University has come up with the technology platform known as MyVista which can be used to fulfil teaching and learning activities online. However, it appeared that when the MyVista platform became fully operational from 2017, both students and staff members faced a lot of challenges (Chirume & Tondhlana, 2018, p. 1). Given the above, it seems that universities are faced with rapid changes in the development of tutoring and e-learning technologies. Institutions like ZOU, therefore, tend to struggle in selecting the appropriate platforms giving versatile tutoring methods to open and distance learners. Such a situation drives the Zimbabwe Open University to be continually adaptive to digitalisation in its teaching and learning activities along with the global trends in education.

### **Personalised Learning Impact on Student Engagement, Academic Performance and Retention**

Personalised learning, a pedagogical strategy that tailors instructional methods and resources to the unique needs, talents and interests of individual learners, has gained popularity to create deeper engagement and better educational outcomes (Kayyali, 2025, p. 1). Given the above as backed by Connectivism (Siemens, 2005) and Self-Determination Theory (SDT) (Ryan & Deci, 2000) personalised learning has the potential to alter the already established teaching learning approaches in universities through ODeL. Adaptive technologies are viewed to a large extent paddling towards active involvement coupled with higher levels of accomplishment by the learners. Such developments arguably emerge not without challenges of installation costs of both the hardware and software require and cost of further training by the user system.

### **Challenges Faced by Both Educators and Learners in Using these Technologies**

The advent of digitalisation in instructional delivery presents benefits and challenges. A case study by (Matthew & Iioanya, 2016) Matthew and Iioanya (2016. p1) indicated the following, “With the advent of new technologies for teaching and learning, African Universities are also moving towards online teaching and learning. This paper presents the benefits and challenges associated with the use of technology in ODL mode in Botswana Higher Education context. Web based surveys were used to collect the data for this study. The study was carried out among the online lecturers and learners in two institutions of Higher Learning in Botswana. 9 experienced lecturers and 25 learners who used technology for their ODL teaching and learning participated in this study. Findings indicate that major benefits of using technology for online teaching and learning include interaction and student engagement, access to latest information, content sharing and communication. The major challenges faced are access to technology, affordability and technophobia. Emerging technologies recommended include Virtual learning platforms (Blackboard, Moodle, Edmodo, Schoology), social networking platforms (Facebook, WhatsApp) and Content sharing software (Camtasia). The survey results will provide insightful guidelines to ODL lecturers, ODL learners and the institutions who are offering online learning modes of learning, especially in Africa. From the case study, the following are noticeable:

- Limited access to technology whereby learners and tutors do not have reliable access to the required digital tools and internet connectivity.
- Affordability, where the cost of acquiring and maintaining technology presents barriers to effective participation in ODL.

- Technophobia where users, especially those less familiar with digital tools, continually experience fear or reluctance in using technology for learning and teaching.

Implications driven from the above-mentioned challenges are:

- context specific technological solutions
- focus on digital inclusion
- design of cost-effective models
- capacity building and training programmes
- policy development support
- user centric innovation.

### **Current Knowledge**

Recent studies confirm that personalised learning technologies improve learner engagement, retention and achievement (Pane et al., 2017; Mogoale et al, 2025). International experiences show that institutions using adaptive learning systems (for example, ALEKS, Knewton) report better tracking of student progress and real-time remediation. In Africa, pilot studies in Rwanda, Morocco and South Africa show early success in using AI to tailor instruction (Theodorio et al., 2024; Hlongwane et al., 2024). In Zimbabwe, personalised learning is gaining attention, particularly in the wake of COVID-19. However, deployments remain largely experimental, with limited empirical data on outcomes (Tarisayi & Manhivi, 2025). The rate at which technologies are moving implies that the ICT team for the university should be highly adaptive and perhaps send some engineers on secondment so that they adopt the continuous learning mode from more advanced ODeL institutions.

### **Research Gaps**

While personalisation through technology is widely studied in developed contexts, limited research exists in Sub-Saharan Africa, especially concerning ODeL institutions. Specifically, few studies examine:

- The impact of AI tools on learning outcomes in Zimbabwean universities.
- The readiness of faculty and students to adopt personalised technologies.
- The policy and ethical considerations unique to African education systems.

Furthermore, most existing studies focus on general e-learning, not the depth and impact of personalisation.

### **Research Design**

Recent studies on personalised learning in higher education, particularly within Open and Distance e-Learning (ODeL) contexts, have increasingly employed qualitative research methodologies to gain deeper insight into the perceptions, experiences and socio-cultural dynamics associated with technology adoption.

- **Case studies** have been widely used to explore the implementation of AI-powered and adaptive learning systems in specific institutional contexts. For example, Ismaili (2024) used a case study approach to examine learner satisfaction with adaptive platforms in Moroccan universities, enabling a contextualised understanding of student engagement.
- **Semi-structured interviews** and **focus group discussions** are frequently utilised to gather narrative data from students, educators and administrators. These methods help

uncover attitudes, motivations and perceived challenges that may not emerge from surveys or quantitative tools (Hlongwane et al., 2024; Theodorio et al., 2024).

- **Thematic analysis** and **grounded theory** have been the dominant analytical frameworks for processing qualitative data in this research domain. Braun and Clarke's (2021) thematic approach has been instrumental in identifying key patterns related to learner autonomy, institutional readiness and ethical concerns.
- **Document analysis** is often employed alongside interviews to review institutional policies, e-learning strategies and platform usage logs, helping to triangulate findings and validate participant claims (Holmes et al., 2023; UNESCO, 2023).

These qualitative methods have been instrumental in exploring the human, ethical and contextual dimensions of personalised learning technologies, especially in low-resource or transitional educational environments like those in sub-Saharan Africa.

### **Key Findings and Trends in Literature**

Through multiple studies, consistent findings include:

- Increased student engagement, academic performance and learner autonomy in personalised environments.
- Enhanced formative feedback loops via adaptive assessments.
- Growing preference among students for on-demand, self-paced learning tools.
- Institutional challenges such as low faculty digital literacy and technological inequality (Financial Times, 2024; Ndlovu, 2024).

There is also a notable trend toward policy development to regulate AI use globally.

### **Controversies and Debates from Literature**

There are ongoing debates within literature. These include:

- Data Privacy, where critics argue that personalisation relies heavily on tracking student behaviour, raising privacy concerns (Ndlovu, 2024).
- While personalisation promotes inclusivity, poor infrastructure may widen the digital divide into low-income settings (Financial Times, 2024) thus equity vs access.
- The role of a teacher. Instead of supporting human education, some educators worry that AI tools will replace them (Holmes et al., 2023).
- Many AI systems are developed in Western contexts and may not reflect African cultural or pedagogical norms (Theodorio et al., 2024) thus cultural relevance.

### **Relevance to the Current Study**

This study builds on existing literature by exploring localised, empirical evidence on how personalisation is being implemented at Zimbabwe Open University. Also, by providing context-specific challenges and opportunities for personalised learning in a developing country and by contributing to the policy dialogue on how institutions can responsibly and inclusively integrate AI and adaptive technologies into ODeL. It aims to fill identified gaps in methodology, context and scope by offering both qualitative and quantitative insights.

### **Research Design and Methodology**

This study employed a qualitative research design situated within the interpretivist paradigm, which seeks to understand human experiences from the perspectives of those experiencing

them (Creswell & Poth, 2023). The qualitative approach was appropriate for exploring the complex and context-specific realities of how students, educators and administrators at Zimbabwe Open University (ZOU) engage with personalised learning technologies in an Open and Distance e-Learning (ODEL) setting. Qualitative methods allow for the capture of rich, in-depth data, revealing underlying motivations, challenges and perceptions that would not be visible through quantitative techniques (Mason, 2024). Given that personalised learning is still an emerging practice in Zimbabwe, this exploratory design provided the flexibility needed to discover nuanced themes related to digital access, instructional strategies and learner autonomy.

### **Population and Sample**

The study targeted individuals directly involved in design, delivery and experience of personalised learning through technology at ZOU. These included students using AI-driven or adaptive platforms, lecturers and tutors integrating technology into teaching practices, e-learning administrators and instructional designers overseeing implementation.

A purposive sampling technique was adopted to ensure that information-rich cases were selected (Patton, 2023). A total of 21 participants were selected with 12 students (undergraduate and postgraduate), six academic staff members and three e-learning administrators.

This sampling strategy is widely used in qualitative studies focused on educational technology (Theodorio et al., 2024; Ismaili, 2024), as it ensures representation from key stakeholders actively engaging with personalised learning tools.

### **Data Collection Methods**

Data was collected through the following qualitative techniques, consistent with best practices in education and technology research (Holmes et al., 2023; Hlongwane et al., 2024):

- Semi-structured interviews: Conducted individually with all 21 participants. The interviews focused on participants' experiences with personalised tools, challenges in usage, perceived benefits and their views on learner autonomy and institutional support.
- Focus group discussions: Two focus groups were conducted with students (six per group), allowing participants to interact and build on each other's experiences, ideal for uncovering collective perceptions (Krueger & Casey, 2023).
- Document analysis: Institutional policy documents, LMS logs and training manuals were reviewed to understand the broader technological environment at ZOU.

All interviews and discussions were audio-recorded (with consent), transcribed verbatim and deidentified for ethical and analytical purposes.

### **Data Analysis Procedures**

Data was analysed using thematic analysis, a flexible yet rigorous approach for identifying patterns within qualitative data (Braun & Clarke, 2021). The six-phase method was followed. Data familiarisation, initial coding, theme development, theme review, theme definition and final reporting. Manual coding and cross-validation were used to ensure depth and reliability, with codes such as "learner autonomy", "AI support", "infrastructure barriers" and "faculty readiness" emerging. This method has been widely applied in recent African education research on AI and adaptive learning systems (Ndlovu, 2024; Tarisayi & Manhivi, 2025).

### **Ethical Considerations**

This study was guided by ethical protocols aligned with institutional and international standards:

- Informed consent was obtained from all participants, ensuring they were aware of the study's purpose, their rights and voluntary participation.
- Anonymity and confidentiality were guaranteed by assigning pseudonyms and storing data securely.
- Ethical clearance was secured from the ZOU Research Ethics Committee.
- Care was taken to manage power imbalances, especially in student-staff interactions during interviews (UNESCO, 2023).

Ethical practice in educational technology research is essential due to the sensitivity of data related to performance and access disparities (Holmes et al., 2023).

### **Validity and Reliability**

In qualitative research, trustworthiness is established through four key principles:

- Credibility was ensured through triangulation (interviews, focus groups and documents), member checking and peer debriefing.
- Dependability was maintained through detailed documentation of research processes and a structured audit trail.
- Confirmability was addressed by minimising researcher bias through reflexive journaling and supervisor validation.
- Transferability was achieved by providing rich, detailed contextual descriptions, allowing other ODeL institutions to relate findings to their environments (Ismaili, 2024).

### **Research Discussions**

The findings of this study reinforce and expand on existing literature regarding the integration of personalised learning technologies in Open and Distance e-Learning (ODEL). Participants at ZOU students, lecturers and e-learning administrators shared insights that reveal both the opportunities and challenges of personalised learning systems in higher education settings, particularly in low-resource environments.

### **Student Experiences with Personalised Learning Technologies**

Students reported high levels of satisfaction with adaptive platforms, particularly those that provided immediate feedback, customised content delivery and flexible pacing. These observations support findings from (Pane et al, 2017) and Holmes et al. (2023), who assert that personalised technologies significantly enhance learner autonomy and motivation. Students using AI-supported platforms felt more empowered to take charge of their learning, with features like diagnostic assessments, automated revision pathways and performance analytics dashboards helping them to monitor progress and focus on weak areas. This aligns with global research showing that learning analytics and intelligent tutoring systems improve learner engagement and outcomes (Mogoale et al., 2025; UNESCO, 2023). However, consistent with Hlongwane et al. (2024), some Zimbabwean students cited limited access to stable internet and devices as barriers to full participation. These infrastructural limitations disproportionately affected students in rural areas, thereby threatening the equity potential of personalised learning in ODeL environments.

### **Educator Readiness and Institutional Capacity**

Educators expressed cautious optimism about the integration of AI-driven and adaptive learning tools. While they acknowledged the pedagogical potential of such technologies, many also reported lack of training, limited institutional support and unclear policies on how to



effectively implement these tools. These sentiments reflect findings by Theodorio et al. (2024), who identified educator digital readiness as a critical factor influencing successful implementation in African higher education institutions. Educators struggled with the re-design of curriculum and assessment models to suit personalised formats. Many noted that their prior training was aligned with traditional lecture-based instruction and they lacked exposure to data-informed teaching practices. Tarisayi & Manhivi (2025) similarly report that in Zimbabwean institutions, educators require extensive professional development to navigate the shift toward AI-enhanced ODeL. Administrative support was described as uneven across faculties. While some departments had initiated pilot projects using adaptive platforms, others remained constrained by budget limitations, lack of infrastructure or leadership inertia. This echoes the fragmented digital transformation efforts observed in the broader Sub-Saharan context (Financial Times, 2024).

### **Policy, Ethics and Systemic Challenges**

The study also revealed critical concerns over data privacy, digital ethics and inclusivity. Participants raised questions about the ownership and security of learner data collected by AI platforms, an issue increasingly discussed in literature on education technology ethics (Ndlovu, 2024; Holmes et al., 2023). Additionally, educators and administrators emphasised the need for clear institutional policies and ethical guidelines to govern AI use in ODeL especially regarding assessment integrity, algorithmic bias and transparency in learning analytics. Some respondents feared that over-reliance on AI could undermine the role of the educator, reduce human interaction and inadvertently marginalise students with low digital literacy or those who learn better through interpersonal methods. These concerns reflect broader global debates about the limits of automation in education and the irreplaceable value of human facilitation (UNESCO, 2023; OECD, 2024).

### **Emerging Patterns and Contributions to Literature**

This research adds to existing literature by providing localised, empirical insights from a Zimbabwean ODeL context highlighting the interplay between technology, pedagogy, policy and equity in resource-constrained environments. While most global literature showcases the technical potential of personalised learning, this study emphasises that implementation success depends heavily on social, institutional and infrastructural factors (Creswell & Poth, 2023).

The findings illustrate that personalised learning technologies do hold promises for transforming student learning experiences at ZOU, but realising this potential requires intentional capacity building, inclusive access strategies and continuous policy reform. These findings support UNESCO's (2023) conclusion that personalisation must be embedded within a broader framework of digital equity and institutional readiness.

### **Research Findings**

- High impact of adaptive technologies, whereby students using AI-based tools showed improved academic outcomes and higher satisfaction.
- Enhanced learner autonomy whereby personalised learning allows students to progress at their own pace and revisit materials as needed.
- Persistent challenges whereby digital exclusion due to infrastructural constraints and limited technical support remain perpetual barriers.
- Need for capacity-building whereby educators require professional development to effectively integrate technology into pedagogy.

## **Recommendations**

Based on the study's findings, several actionable and evidence-based recommendations are proposed to enhance the effective integration of personalised learning technologies in Open and Distance e-Learning (ODEL) at Zimbabwe Open University and similar institutions. These recommendations are directed at key stakeholders, are grounded in the research results and are designed to be feasible within the Zimbabwean higher education context.

### **1. Develop and implement a clear institutional strategy for personalised learning**

- Target audience is the University leadership and ODeL administrators.
- Actionable suggestion includes formulating and adopting a university-wide strategy that guides the integration, monitoring and evaluation of personalised learning technologies.
- Link to findings which address the current fragmentation and lack of policy direction noted in the study.
- Feasibility that could be developed internally with support from e-learning experts and existing ODeL committees.
- Policy/Practice impact which promotes standardisation and alignment of personalised learning efforts across faculties.

### **2. Provide continuous professional development for educators**

- Target audience being the Ministry of Higher and Tertiary Education, universities and Human Resources Management Units.
- Actionable suggestions that offer regular workshops and training sessions focused on digital pedagogy, use of adaptive platforms and ethical AI in education.
- Link to findings which respond to the low digital readiness among lecturers and the need for enhanced instructional capacity.
- Feasibility could be achieved through partnerships with teacher training institutes, Non-Governmental Organisations (NGOs) or online learning platforms.
- Policy/Practice Impact that supports the professionalisation of e-learning thereby improving teaching quality.

### **3. Improve technological infrastructure and access for students**

- Target audience being the Government ICT departments, university ICT units and development partners.
- Actionable suggestions that could expand Wi-Fi access, subsidise devices and provide low-data-use versions of learning platforms, for example engaging STARLINK services.
- Link to findings that directly address digital divide issues, especially for students in remote or rural areas.
- Feasibility which could be phased and supported through donor funding and public-private partnerships (PPPs).
- Policy/Practice Impact which promotes equitable access and inclusive education in line with SDG 4.

### **4. Establish data protection and ethical AI guidelines**

- Target audience as for the University councils, ICT policymakers and legal departments.
- Actionable suggestion that unveils the drafting and enforcement of clear policies on student data privacy, algorithm transparency, as well as responsible AI use in learning systems.
- Link to findings that respond to ethical concerns raised by students and staff regarding data usage and AI decision-making for clientele satisfaction.
- Feasibility that leverages existing data protection laws and global ethical frameworks.
- Policy/Practice Impact that enhances trust and compliance in the use of learning technologies.

#### **5. Promote learner digital literacy and orientation programmes**

- Target audience being the academic support units, librarians and student affairs departments.
- Actionable suggestion which implements orientation modules and short courses on using adaptive systems, AI dashboards and digital study skills.
- Link to findings that enhances student preparedness and maximises benefits of personalised platforms.
- Feasibility which could be integrated into existing first-year experience programs.
- Policy/Practice Impact that would improve student outcomes and engagement with personalised tools.

#### **Area of Further Research on Localised AI and Pedagogical Innovation**

- Target audience that would include academic researchers, postgraduate students and research councils.
- Actionable suggestion that could promote studies that explore context-specific adaptive technologies, culturally relevant AI design and long-term impact on academic performance.
- Link to findings that readily build on identified research gaps and need for locally grounded evidence.
- Feasibility that could be supported through small research grants and thesis projects.
- Future research would be required on AI bias in local settings, gendered access to personalised learning and teacher perceptions over time.

These recommendations form a holistic action plan. They seek to connect the technological, pedagogical, ethical and policy considerations. Mostly they would ensure that Zimbabwe Open University and similar institutions can effectively leverage personalised learning technologies in the future of ODeL.

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