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Harnessing Artificial Intelligence to Promote Inclusivity in Hybrid Model: Information Systems Academics' Perceptions

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Abstract: Globally, there is a noticeable shift in higher education institutions (HEIs). This shift in innovation is driven by artificial intelligence (AI). Initially, AI was not readily accepted in educational contexts because it requires significant changes, including reconsiderations of infrastructure and resources, as well as innovative reskilling. Although literature indicates a slight shift, many academics, researchers, and institutions recognize AI's potential to enhance the provision of tuition. However, in universities of technology in the Global South, perceptions of AI for advancing tuition remain underexplored. Therefore, the aim of this study is to establish how AI is harnessed in tuition at Durban University of Technology (DUT). To address this gap, this study is underpinned by structuration theory, with three primary concepts, namely structure and human agency, deemed relevant for collecting academic opinions, experiences, and views about the main artifact under study. Accordingly, a qualitative approach aligned with the interpretivist paradigm was used to guide this research. An autoethnographic research design was employed because it permits the collection of participatory opinions and experiences about the artifact under study. The findings reveal that academics hold different views on AI harnessing hybrid pedagogy. Although contradictions were noted in their views, these were evaluated as stemming from a lack of policies and frameworks governing AI appropriation. The major contribution was based on three propositions. Limitations were also noted, as the study captured only participatory opinions. Therefore, the recommendation for future research is to address similar topics and opt for both quantitative and qualitative approaches to capture the views of academic representatives.

Keywords: Harnessing AI; Promoting Inclusivity; Hybrid Pedagogies; Academic Experiences; Durban University of Technology

1. Introduction and Background

Globally, higher education institutions have recognized the emergence of AI in their different terrains. Landing in the fourth industrial revolution (4IR) era is the result of the continued rise in AI adoption. 4IR is characterized by the latest technological developments, including the recommenders, AI, cloud computing, makerspaces, machine learning, and virtual and augmented reality [1]. AI, a mixture of enhanced computational power and extensive digital data, has brought about an unparalleled age of technological progress, featuring machine learning algorithms [2]. Among these influential recent developments, AI is highly dominant in education, including basic, higher, training, and independent education organizations.

Currently, AI in educational contexts is considered as an enabler for advancing tuition [3]. Most higher education institutions are increasingly adopting AI-related technologies to transform traditional methodologies into AI-enabled digitalization processes. They all strive for the incorporation of AI across different systems for teaching and learning, including chatbots, virtual reality, and learning management systems, for the purpose of increasing efficiency in processes [4]. The essence of AI in the education context is to bring more diverse opportunities. Although it represents dynamic individual differences in student populations, where some are knowledgeable and others are not. Education and learning experiences may differ based on technology ownership, suitable infrastructure for learning, and experiences may influence the success of AI involvements [5].

In the current 4IR, AI has been recognized as offering many opportunities to transform education and contribute to social inclusion. At the beginning, when AI was still emerging, it received a lot of criticism, and many people were more concerned about malicious uses of AI, which posed challenges to organizations [6], among other concerns. Gradually, there is a shift in literature, with many AI opportunities and strengths being presented. AI in hybrid intelligence has the potential to inspire empirical research into human-AI interaction in tuition and its implications for improving human competencies [7]. However, an AI hybrid intelligence system may require humans to develop a set of skills to use such systems and would also require significant innovations in our education systems for them to be integrated [8]. Therefore, AI in education has greater opportunities to improve elasticity, catering to varied tuition approaches.

AI in hybrid presents many different opportunities to advance teaching and learning. Some of the opportunities are based on the following: education includes evaluation, management, forecasting, virtual assistants, resource distribution, smart tutoring systems, and overseeing student learning [9]. Yet, AI technologies for education are still argued to lag behind, with most tools being simple, single-purpose, and not tailored to interdisciplinary learning needs, highlighting the need for researchers to examine and design more advanced, versatile, and useful AI tools for education [10]. Inclusive of relevant technologies that are AI-driven for graphical and audio content, it can stretch opportunities for relying on LLMs teaching and learning, as it can easily comprehend with AI-driven tools [9]. Beyond these proposed opportunities, the characteristics of AI in hybrid mode are not fully understood at some Universities. Hybrid intelligence has been explored to support data-driven and transparent in different contexts, such as organisations for production increase [11]. Yet little is known about how AI can harness hybrid approaches to promote social inclusion at a university of technology, such as the Durban University of Technology. To address this problem, the study adopted an ethnographic approach to gather academics' experiences with the AI hybrid approach to fostering inclusivity.

2. Literature

2.1. Institutions and AI

Learning, teaching and assessments, being the core of education, can potentially be altered due to the inclusion of AI [12]. However, the integration of AI depends on individual institutional protocols and frameworks to aid in this transition phase. Thus far, there have been several studies that looked at how institutions have globally embraced the element of AI, specifically Generative AI. According to Abulail et al. [13] and Jin et al. [12], there is an indication of receptive stances, marked by extreme caution relating to privacy, accuracy, and ethical issues. Therefore, policy frameworks must be developed to ensure the responsible and ethical integration of AI [14]. There have been numerous propositions of theoretical frameworks to aid in this process. One such framework, as proposed by Ajayi et al. [15], centres specifically on fairness, accountability, transparency as well as the importance of bias mitigation and others for AI implementation. It is imperative to note the importance of policy implementation through these frameworks and their actions thereof.

Shwedeh [16] emphasizes that the academic sector has been enhanced due to the integration of AI in information technology. Moreover, Mariyono and Nur Alif Hd [17] highlight the significance of interdisciplinary collaboration to bridge the digital divide through the transformation of infrastructures. It is evident that significant investments, both financial and others are required for the successful implementation of AI within the educational sector. Unfortunately, no transformation is complete without challenges. Thus, Noviandy et al. [18] stress the importance of evaluating challenges or obstacles by means of developing strategies and approaches to effectively address them. A viable strategy involves the IT department as the primary stakeholder in the deployment of AI, as

well as providing holistic support and reducing risk [19]. Much has been said about the impact of AI on the academic sector; however, administrative elements can also be impacted in a manner to streamline repetitive tasks such as registration and curriculum amendments.

2.2. Intelligent Tutoring Systems

Customised instructions are usually provided to students through AI technology, which is widely used by the majority of higher education institutions. These customised instructions are usually prepared packages which are tailored to the needs of each specific student, depending on the content areas in which the student needs further improvement [20,21]. Existing university systems, such as the Integrated Tertiary System, do offer advanced learning models, such as Natural Language Processing, for communication purposes between the learner and the instructor, as well as a multi-modal feedback subsystem. These learning models include student modelling engines as well as other ways of teaching and learning modules and some user interface layers [21]. AI-enabled intelligent assistant for personalised and adaptive learning was developed by Sajja et al. [22]. This program integrates with institutional system to offer support on an ongoing basis. Machine learning algorithms are used in these systems to analyse student learning platforms. These algorithms are capable of identifying those students who are struggling to understand the concepts and provide tailored information to help students to comprehend effectively [22].

AI training and professional development can be obtained through various strategies, such as hands-on workshops to comprehensive institutional systems [23]. AI-based tools such as ChatGPT, Copilot and Gemini have been identified by authors like Nurohman and Saryadi [23] as instrumental in developing training programs that employ blended teaching methods as well as developing educational material. The above-mentioned approach offers several advantages, including equipping instructors and students with immediate skills for teaching and learning, reducing the fear of using new technology for both instructors and students, and promoting peer learning and collaborative problem solving.

AI integration also helps in the development of academic programs on an ongoing basis; these developments focus on technical expertise, pedagogical changes, ethical issues, and institutional cultures. As stated by Mozelius et al. [24] and Gunder et al. [25], these developments require institutional dedication, resources, and collaboration among various departments and stakeholders.

2.3. Role of Academics for AI

Academics are a very important driver in higher education. They ensure that they set out the academic calendar for the modules with theoretical as well as practical sessions for students. Students are exposed to real world cases or experiences due to keeping abreast of industry, innovative use of AI and ensuring that students are aware and understand the ethical use of AI. With the current trends surrounding the use of AI, academics must be very quick to ensure that they incorporate these AI trends and constantly need their resources and teaching styles to be revised to keep up with these developments. Additionally, Academics have to inquire and investigate new teaching styles, which can upskill students and get them to engage with the content's latest developments [26]. However, due to the changes that have been occurring over the years, the traditional setting of teaching and learning has shifted to one that requires the academic to start using moving towards emphasizing the need for the students to be able to critically and creatively engage and collaborate with their peers. Academics should guide students to ensure they are adaptive graduates; where the academic is not the source of the knowledge, but rather an enabler between the content, latest developments as well as the practical sessions. Students are totally unaware about the risks that are involved with the use of AI. Therefore, the academics together with the institutions should offer support to their students and ensure that students are not misusing AI [27]. Students should be creative, distinctive and impactful individuals.

3. Contextual Setting

DUT is one of the leading Universities of Technology in South Africa, where they offer multiple degrees, diplomas, and postgraduate degrees across six faculties and many departments like the Department of Radiography, the Department of Information Systems, and the Department of Operations Management. There are varied programs offered to many thousands of students who have different interests and who would like to be placed. We have many

campuses in KZN that offer theoretical knowledge and specialized laboratories that offer the industry practical related tasks. The University has many high-profile scholars who have published and completed their postgraduate degrees, they have gained the soft skills and leadership qualities locally and internationally. DUT has multiple platforms for interdisciplinary and transdisciplinary industry and community engagement collaborations across disciplines to find real world solutions [28].

DUT boasts many widely recognized academics and scholars, who have received national and international recognition. These staff or group of staff have collaborated with various interdisciplinary projects with the international office, Centre for Excellence in Learning and Teaching (CELT) and Collaborative Online International Learning (COIL) projects [28] to ensure that our students strong focus on entrepreneurship and Work Integrated Learning have been the drivers in increasing their chance of being employed by many industry partners. The scholars have gained so much of experience with the various projects, they actually come back to share their knowledge and experiences with the other students, who are still studying. Academic professors, researchers and doctors have transformed education at DUT to reflect the various accolades that DUT has earned; DUT has hosted various conferences across all the faculties, collaborated with various countries and their students and also have exchange programmes that are benefiting our students as well as the exchange students. In 2024 Times Higher Education Sub-Saharan Africa Rankings, DUT was recognized as being the prominent University of Technology in the region. DUT's ENVISION2030 strive to achieve the following; integrity, honesty, transparency, respect, accountability, fairness, professionalism, commitment, compassion and excellence [28]. DUT plays a very important role locally and internationally as a University of Technology.

There are multiple AI tools that can assist in changing how we teach and address problems linked to students' challenges during the semester. The support a student gains from using AI can help ensure that AI is harnessed to promote inclusivity in hybrid pedagogies.

4. Theoretical Underpinning

Structuration Theory was developed by Anthony Giddens and published as The Constitution of Society in 1984. The theory has been highly influential across various fields, such as Social Sciences, Management Sciences, and Accounting [29], as well as in Computer Science, IT and IS [30]. However, because technology is so pervasive in the daily operations of organizations, especially in strategy formulation and reality construction within contemporary organisations, some efforts have been made to extend Giddens's ideas by explicitly including an IT dimension in social analysis [31]. This model has been used by several researchers in the field of IS to examine different issues, including globalization and IT deployment in both developing and developed countries [32]; the dynamics of groupware applications [33]; communication and collaboration through IT [34]; and the dynamics and effectiveness of global virtual teams [35]. Moreover, Giddens's work has been widely cited in numerous IS studies [36,37], and it has successfully contributed to the development of relevant knowledge.

The potential of Structuration Theory lies in enhancing understanding of organizations, organizing, and the organized; it still needs further development [38]. It is also suggested that a core aspect of IT research is understanding how organizational phenomena influence the development and use of technologies, and how technologies, in turn, shape organizations. Gregor [39] argues that Structuration Theory continues to be widely applied in both theoretical and empirical studies within the IS field.

There are three important concepts in Structuration Theory: structure, system, and human agency. The first is structure, which is defined as common rules and resources that are part of social systems [40,41]. It involves the production and reproduction of social systems through the interaction of rules and resources [42,43]. This structural concept helped in discovering the existing dual structures at the DUT where research is conducted. Currently, it is unknown what existing structures that can be implemented to harness AI into teaching and learning. Jones and Karsten [44] argue that structures are not directly observable but are instead embedded in objects. This means that a structural analysis explains the relationships between different parts, helping humans whether developers or users understand why something appears as it does.

The second concept is the system, which refers to the recurrent relations among actors organized into regular social practices [44]. The applicability of system concepts enables the capture or description of the existing system in the research context. Therefore, this will help reveal the different kinds of systems relevant to harnessing AI.

The third concept, human agency, describes situations that lead to the stability or transformation of social

structures and the reproduction of social systems. Human agency helped to unveil social responses from relevant stakeholders, such as academics, students, and social capital involved in the institutional processes. In this context, academics are the main actors in harnessing AI for teaching and learning. Therefore, the Structural Theory concepts are relevant because they help study the complexity of dual structures, dual systems, and human agency (academic) within a specific domain (DUT).

5. Research Methodology

This study employs autoethnography as the primary methodological framework to explore AI inclusivity in hybrid pedagogy. Autoethnography is a qualitative research method that combines autobiography with ethnography, allowing researchers to systematically analyze personal experiences to gain insights into cultural, social, and political phenomena [45]. It links individual narratives to broader theoretical and practical implications [45]. Autoethnography uses the researcher's personal experiences as a qualitative research tool [46,47]. This method helps in understanding broader cultural, social, and political issues by integrating autobiography with ethnography through self-reflection (reflexivity). Furthermore, it employs storytelling to examine lived experiences and their connection to cultural norms, challenging traditional research by embracing subjectivity, emotion, and personal narrative to make the familiar unfamiliar and foster social understanding [48]. In this context IS and IT academics tend together to share their personal experience and views about existing AI tools that can contribute in harnessing hybrid mode. Academics used personal stories as data, critically analysing them, and connecting them to larger societal contexts, often using reflective journaling, interviews, or other qualitative methods. Unlike traditional research methods that aim for detached objectivity, autoethnography highlights the researcher's subjectivity [49].

Many researchers have opted for this methodology as their method of choice. For instance, one study utilized autoethnography to reflect on the authors' experiences as active participants at Rhodes University [50]. In a similar vein, Ibrahim et al. [51] used collaborative autoethnography, conducting online interviews to collect educators' reflective narratives about teaching qualitative methods in medical schools. Mokobedi et al. [52] also employed collaborative autoethnography to delve into the lived experiences concerning violence, injury, and unnatural deaths within their professional environments.

The autoethnographic process involves writing about oneself, engaging in discussions about the past with others, analysing texts and recordings, and consulting news articles, blogs, and other archives related to life events. To adhere to autoethnography five academics collaboratively engaged in an autoethnographic inquiry, drawing on their individual teaching and professional experiences as primary data sources. Before these exercises took place we all agreed to adhere to ethical processes where information among the participants will be kept confidential and respect each other opinion. As participants were treated pseudonyms like "Participant KK-Participant MM". Since this publication is a part of Scholarship of teaching and learning (SoTL) participants applied for ethical clearance. Although in autoethnography does not require any ethical clearance since researcher present on their personal experiences. The process was conducted using the MS-Teams platform, whereby a recording and transcription were extracted. MS-word was used to identify themes and thereafter that researchers were able to identify themes which were related to structuration theory. Through this the participant reflective writing and collective dialogue, the researchers analysed shared and experiences to generate deeper insights into the phenomenon under investigation. The text produced is crafted with storytelling techniques such as narrative voice, character development, and dramatic tension to create cultural representations [53]. Autoethnography not only permits but also promotes a focus on self-understanding that does not necessarily have to be academic in nature [54].

6. Findings

The duality of structures is presented considering existing policies and frameworks governing AI. Regarding the policies and framework, participants state that Durban University of Technology (DUT) has no comprehensive AI policy. However, there is an ongoing effort to integrate AI into the existing teaching and learning policy. But at DUT, there is a well-defined teaching and learning policy that can serve as a foundation for addressing AI-related concerns. While the policy may not address AI directly, but it creates a framework for adapting any new emerging technologies.

"... if I am not mistaken, the university is actively developing guidelines and a strategic approach to incorpo-

rate AI into its teaching and learning policy." (Participant KK)

Different opinions have been expressed by academics regarding the policy on AI. One academic pointed out that their investigation for a literature review reveled various frameworks on AI especially within South Africa settings but also noted that these frameworks may not be integrated into teaching and learning. Other academics mentioned that they normally follow the rules set by Department of Communication and Digital Technology, one of the other academics mentioned that they use National AI policy framework, and the remaining academics believed that AI aspect is addressed in the current teaching and learning policy.

"*… Integrating AI aspects into teaching and learning policies will benefit DUT*" (Participant OO)

Integrating AI tools into the teaching and learning environment is necessary. At DUT, presently the social capital instructions are confined in using manual, less adaptive to students needs and also that the lecture venues are only confined for teaching and learning aspects and for writing exams, which contradicts the general rules of integrating physical and traditional educational methods. Academics indicate that a genuine AI approach should be introduced as they are facing problems with large classes and manual grading, which often delay in providing feedback as one of the example and also that using of AI approach in teaching and learning is problematic due to the present policies being undermine, outdated and are inflexible for any development. So, academics insist that forthcoming policies are basically going to establish ethical principles and benefit DUT, as these principles play a vital role in shaping educational landscapes, and also since academics deal with complexities that can also be overcome by introducing these AI technologies into teaching and learning.

"*… DUT wants all the academics to use hybrid model, but present existing policies do not support, and academics want to embrace an integrated approach to teaching and learning which can accommodate various modalities, but policy still limit in using them"* (Participant OO)

It is evident that our institution has not yet recognized the need for strategies that effectively support a hybrid approach to education. The institution has accommodated large student numbers in some modules that cannot fit in the existing lecture halls. So, implementing hybrid model can solve this problem, but due to the structural barriers and present policies not being supportive it is problematic.

"*Academics are expected to teach over 800 students in a course, yet struggle to find a venue spacious enough to accommodate even 300 student*s" (Participant NN)

So, without proper infrastructure, big venues, battling internet issues cannot accommodate the use of AI without a proper Wi-Fi network. Academics opine that, in the absence of sufficient buildings, venues, and a lecture hall, this could be a good time for the university to embrace hybrid models featuring AI to benefit many students.

6.1. Systems for Access and Use of AI

Academics used various technologies and devices to integrate AI into a hybrid teaching approach. Technologies like smartphones, online platforms, and databases are commonly used by educators. Although some express uncertainty about whether students have full access to these tools and technologies. Educators also confirmed that their interest in exploring AI was partly driven by its potential to improve hybrid learning. Some students using AI tools come from diverse backgrounds, including different geographic locations and household situations. In the South African context, such diversity remains prominent. To effectively incorporate AI into hybrid education, educators must remain attuned to the dynamics within their communities. Additionally, teachers used these technologies to support online, in-person, and hybrid classes. However, a key concern is that students might misuse these tools to cheat or copy content without proper citation.

"We do have that problem, especially in the programming modules, where students use AI to extract codes. In most cases, you find that the answer is correct, but now the problem is that the student doesn't understand how the actual model is used to come up with an answer" (Participant NN)

In IS and IT departments, academics often depend on various service providers for the databases, systems, and software used to teach students. Currently available advanced systems can improve teaching and learning by integrating AI pedagogies. However, power dynamics within the institution may limit progress in teaching because academics cannot simply choose the systems they want to use. The process of selecting software, suppliers, or vendors for relevant technologies or systems often reflects the institution's power structures. This situation can be a barrier for us as academics because we do not always have access to the tools needed to improve teaching and learning.

"I can say is, power dynamics are indicated in the use of AI." (Participant MM)

Furthermore, academics reveal that access to the system is limited to specific staff members based on their roles and titles within the institution. Similarly, when selecting AI tools, a comparable approach will likely be used. As educators, we often explore various AI tools to enhance the quality of our teaching and the information we provide to students. However, these tools will not be available to the students themselves.

6.2. Human Agency: Inclusive Use of AI in Hybrid Pedagogy

"Academics believe that AI should be used to support diverse teaching and learning and to support diverse students in hybrid setting." (Participant KK)

Academics are increasingly optimistic about the transformative potential of the AI hybrid model to foster inclusivity in academic settings. DUT and other educational institutions which have diverse students coming from different backgrounds and students that are having disabilities should be provided with equal teaching and learning. So academics emphasize that using AI hybrid approach which is a combination of traditional pedagogy with AI driven tools will enhance engagement, improve accessibility and also ensure that all students including students with disabilities can be benefit. Academics have the responsibility to familiarize students with this innovative mode of teaching and learning as it significantly improves student's educational journey. Ultimately the aim is to create a academic framework where all the students can succeed and contribute towards the academic community.

Academics use public materials in creating the teaching content, these materials basically give basic knowledge and context. Combining the material with various AI tools will help academics find information quickly, stay updated on new developments and produce comprehensive and engaging teaching materials that will cater for diverse learning needs. Also, it shows that diverse students are adapting to AI technologies themselves, which suggests that teaching methods might also need to change.

"When any assignment or questions asked to students during the lecture or provided to do as an activity for submissions, students answer using the help of AI tools" (Participant RR).

As an academic, recently we have been using AI tools for generating the course outline if it is a new module where you don't have any previous information and also in doing so we have the academic come across different AI tools present. Due to this information academic can easily check if students have copied the answers from these AI tools.

7. Discussion

7.1. AI Frameworks and Policies

In trying to understand how AI hybrid mode can enhance social inclusion. The issues of AI policy and frameworks are prominent and worth discussing to inform research questions and empirical evidence. Findings show that there are some contradictions in academics' responses regarding policy and framework. Some opine that there is an existing policy, while others claim there is no AI policy. Whereas others mentioned that the institution relies on teaching and learning policy to accommodate AI. The advent of AI in education creates an urgent need for universities to develop an AI education policy that guides the adoption and use of AI and sets out principles for relevant technologies [27]. With the expansion of AI in educational contexts, there are growing concerns about the risks of its use and its potential impact on human activities [55].

The study's findings, which present a contradiction, concern policy comprehension in existing literature. A study conducted in the Global South shows that only HEIs in South Africa have published and implemented institutional AI policies, whereas in Ghana or Nigeria, HEIs currently have no formal or publicly accessible AI policy in place [56]. This confirms that the study context does not have an AI policy in place. To provide clear guidance for academics, Maina and Kuria [57] argue that there is a crucial need for a reference tool or set of policies in Africa to provide insights into the array of issues that must be addressed to fully realize the benefits of AI integration in education.

Globally, it cannot be disputed that the existence of AI in education spheres is relatively new and that is the main causality of contradictions concerning the understanding of AI policy or framework. Still, in the absence of institutional policies UNESCO developed its guidelines on the ethical use of AI technologies by emphasizing the key idea of human-centeredness and hence, human rights and values laid out in the Universal Declaration of Human Rights (UDHR) are advised to be adopted as the necessary foundation to further promote beneficial and appropriate use of AI technologies [58–60]. Institutions with no policy can benefit from these clear guidelines provided by UNESCO.

The absence of a policy and framework affects institutional operation and may lead to appropriation of shadow IT. Shadow IT refers to the adoption of IT and resources not permitted by the institution [61]. With the advent of AI, shadow IT is likely to expose the institution to many risks related to threats and phishing, since IS academics are highly IT-proficient and can adopt and deploy a wide range of technologies to carry out their tasks more easily. Harnessing AI in higher education, such as at DUT, is viable; however, shadow AI introduces unique risks, including hallucinations, attribution failures, and ethical blind spots [62]. In further harnessing of AI pedagogies, this study proposes:

> Proposition 1: *Healthy, continuous use of AI pedagogies requires clearly defined policies governing academics and the appropriation of shadow IT, as innovations and practices are evolving.*

7.2. AI System for Inclusive Tuition

Academics found that AI offers opportunities to promote a hybrid approach at DUT. AI has invaded the educational sphere and has been found to be relevant for enhancing academic activities and promoting hybrid approaches. A hybrid approach is a combination of AI with human teaching, which is essential to maximise the potential of AI in education while preserving the human touch critical for mentoring and emotional support [63]. AI in hybrid mode has capabilities to enhance inclusivity. AI tools foster inclusivity by ensuring that all students, regardless of their abilities, can participate in hybrid teaching and learning [64]. Furthermore, AI has the potential to support diverse development and equitable access to hybrid modes of teaching and learning [65]. Although these AI hybrid tools are not yet fully implemented in higher educational institutions but there is a continuous growth of AI systems to support inclusivity.

Academics found that there are many different AI systems that can be appropriate to harness AI inclusivity. DUT as a university has invested in many different AI technologies such as ChatGPT, Copilot, and Gemini for developing educational materials [23]. There is recognizable change brought by AI in higher educational institutions, which is confirmed by Aytac [66], that AI-based educational technologies like personalized learning systems, voice assistants, virtual mentors, educational games and automatic assessment systems. These tools are used differently based on their intelligence, for example, Gen AI tools used to complete teaching and learning activities [67]. Although these initiatives and AI tools are good for innovations, still they contribute social exclusion because not all academic and students are well exposed to these technologies.

The findings illustrated that in DUT they rely on open sources platform like Moodle, databases search engines that are AI embedded. This system seems to be enabled in the eco system, since they can accommodate large student numbers. Some of the institutional challenges that have been identified are based on small venues, structural maintenance and internet connectivity. This could be a good time for the university to embrace hybrid models featuring AI to benefit many students. In a related study, Ojha [68] identified several benefits associated with the integration of AI in higher education, including personalized learning experiences, increased student engagement and interactivity, and the provision of timely feedback and academic support.

Most systems are embedded with AI technologies, which have both positive and negative impacts. On the down-

side of it, for example, in computer programming education, students have become reluctant to use appropriate programming methodologies to run their programs; instead, they simply copy the code from an open-source platform without understanding the function of the code. These tools offer potential support to teaching and learning [69]. However, for novice programmers, these pose pedagogical challenges, including increased student dependence, surface-level learning, and weakened conceptual understanding.

Proposition 2: *IT systems are gradually taking dynamic positions to accommodate AI embedded features to continue harness hybrid processes for teaching and learning.*

8. Conclusion and Recommendations

This study aimed to gather academics' opinions on how AI is used in a hybrid approach to teaching and learning at DUT. This study aimed to gather academics' opinions on how AI is used in a hybrid approach to teaching and learning at DUT, using a qualitative approach underpinned by structuration theory. The findings reveal that numerous benefits are afforded to the teaching and learning sector with the amalgamation of AI in higher education. Additionally, there appears to be a strong alignment between the research expectations and the theoretical framework. There was general consensus that AI has the potential to be extremely valuable in supporting educational institutions by enhancing efficiency and optimizing operations. However, the discussion of AI policies in the findings yielded divergent perspectives due to institutional practices and overall readiness. Academics from the IT and IS departments agreed that specific AI tools, such as adaptive learning platforms and intelligent tutoring systems, would be beneficial to the institution. Supplementary notable benefits cited were barriers relating to engagement, student learning paces, time management and general geographical matters. However, the primary determinant of AI integration is the level of buy-in from academics, particularly their engagement and incorporation into their daily practices. Besides, several apprehensions about the use and integration of AI exist, such as data privacy, ethical issues and other related prejudices. Thus, workable pedagogical approaches are necessary, as technology, on its own, may not be capable of achieving inclusivity. Undoubtedly, integrating AI can potentially enhance interpersonal engagement, its integration is not without considerable constraints. Such constraints, including limited access to appropriate technology and addressing the digital divide, present an unfortunate reality for the integration of AI within specific educational contexts. As a result, for optimal integration of AI in education, it is key to ensure a synergistic balance between the system and humans. For overall enhanced outcomes, the integration of AI must be underpinned by ongoing human oversight. Thus, with a well-calibrated approach, AI has the potential to promote inclusive teaching and learning, thereby mitigating any inequalities. All stakeholders, such as academics, curriculum developers and policymakers, can consider the following key recommendations to consider harnessing AI in promoting inclusivity in hybrid learning:

- Universities should invest in professional development programs to equip IS and IT academics to contribute to the institutional ICT department in developing relevant technologies integrating AI tools.
- Institutions should strive for clear policies and ethical guidelines for AI in education, which address data privacy, transparency, and algorithmic bias to promote fairness and inclusivity.
- Both academics and students need equitable access to digital infrastructure and learning technologies, such as reliable internet, appropriate devices, and user-friendly platforms, which are crucial for all students to benefit from AI-enhanced learning.
- Institutions need AI-supported systems that foster interdisciplinary partnerships, leading to more effective solutions to inclusivity challenges in hybrid learning.
- The universities need to seek more opportunities to expand the relevant AI tabs for teaching and assessment.
- This study relies on autoethnography; therefore, the study recommends an extension where a similar study is conducted, opting for a mixed method approach in gathering different views from students, academics, and developers who are fully responsible for AI inclusivity in teaching and learning.

Author Contributions

Conceptualization, U.R., L.M., P.J., B.N. and S.M.; methodology, S.M.; software, U.R., L.M., P.J., B.N. and S.M.; validation, U.R., L.M., P.J., B.N. and S.M.; formal analysis, S.M.; investigation, U.R., L.M., P.J., B.N. and S.M.; resources, U.R.,

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Informed Consent Statement

Informed consent was obtained from all participants of this study.

Data Availability Statement

Due to institutional policies, all collected data remains exclusive property of Durban University of Technology (DUT) therefore, formal authorization must be obtained from DUT before its use or dissemination.

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Conflicts of Interest

The authors declare no conflict of interest.

AI Use Statement

The authors declare that no artificial intelligence (AI) tools were used in the preparation of this manuscript. However, the use of Grammarly for language editing was used. The authors subsequently reviewed and edited the content as necessary and take full responsibility for the final content of the published article.

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