International Journal of African Higher Education

Volume 11 Number 3

2024

PUBLISHED BY
International Network for Higher Education in Africa (INHEA)
University of KwaZulu-Natal, Durban, South Africa

IN COOPERATION WITH
Center for International Higher Education (CIHE)
Boston College, USA

© International Network for Higher Education in Africa (INHEA)
ISSN. 2313–5069

Editorial Team

EDITOR-IN-CHIEF
Damtew Teferra
University of Kwazulu-Natal, South Africa

EDITOR
Wondwosen Tamrat
Saint Mary's University, Ethiopia

MANAGING EDITOR
Ayenachew Aseffa
Addis Ababa University, Ethiopia

ASSOCIATE MANAGING EDITOR
Lamesgnew Negalign
Leipzig University, Germany | Addis Ababa University, Ethiopia

FRENCH ABSTRACT TRANSLATION
Abdoulaye Guèye
University of Ottawa, Canada

COPYEDITING AND PROOF READING
Taye Assefa, *Ethiopia*

TYPESETTING
Etsegenet Reta, *Ethiopia*

INTERNATIONAL ADVISORY BOARD

1. Dr. Tade **Aina**
   Executive Director, Partnership for African Social and Governance Research, Kenya
2. Prof. Philip G. **Altbach**
   Founding Director and Emeritus, Center for International Higher Education, Lynch School of Education, Boston College, United States
3. Prof. (Asso.) Ronald **Bisaso**
   Dean, East African School of Higher Education Studies and Development, Makerere University, Uganda
4. Prof. David **Bloom**
   Clarence James Gamble Professor of Economics and Demography in the Department of Global Health and Population, Harvard School of Public Health, Harvard University, United States
5. Dr. Eugenia F. **Cossa**
   National Director of Higher Education, Ministry of Science, Technology and Higher Education, Mozambique
6. Prof. Hans **de Wi**t
   Distinguished Fellow, Center for International Higher Education (CIHE), Boston College ; Emeritus Professor of International Higher Education, Lynch School of Education and Human Development, USA
7. Dr. Bakary **Diallo**
   Rector, African Virtual University, Kenya
8. Prof. (Assoc.) Tor **Halvorsen**
   Department of Administration and Organization Theory, University of Bergen, Norway
9. Dr. Christoph **Hansert**
   Head of Section Development Co-operation, Strategy Department, German Academic Exchange Service (DAAD), Germany
10. Prof. Marcelo **Knobel**
    Executive Director, The World Academy of Sciences (TWAS), Italy
11. Ms. Deirdre **Lennan**
    Directorate General, Education and Culture, European Union, Belgium
12. Dr. Francisco **Marmolejo**
    Education Advisor, Qatar Foundation, Qatar
13. Prof. (Asso.) Gift **Masaiti**
    Assistant Dean, School of Education, University of Zambia, Zambia
14. Prof. Sioux **McKenna**
    Director, Centre for Postgraduate Studies, Rhodes University, South Africa
15. Prof. (Assoc.) Ibrahim Ogachi **Oanda**
    Programme Officer for Research (Higher Education), CODESRIA, Senegal
16. Prof. Charles Awano **Onana**
    Director, National Advanced School of Engineering, University of Yaoundé I, Cameroon
17. Dr. Jamil **Salmi**
    formerly Lead Tertiary Education Expert, World Bank, now consultant at Tertiary Education.org, Colombia
18. Prof. Chika T. **Sehoole**
    Dean, Faculty of Education, University of Pretoria, South Africa
19. Prof. Juma **Shabani**
    formerly Regional Director, United Nations Educational, Scientific, Cultural Organization (UNESCO), Zimbabwe
20. Prof. Tesfaye **Semela**
    Director, Center for Policy and Development Research, Hawassa University, Ethiopia
21. Prof. (Assoc.) Michelle **Stack**
    Faculty of Education, Department of Educational Studies, the University of British Columbia, Canada
22. Prof. N.V. **Varghese**
    Vice Chancellor, National University of Educational Planning and Administration (NUEPA), New Delhi, India
23. Prof. Renuka **Vithal**
    Deputy Vice Chancellor, University of Fort Hare, South Africa
24. Prof. Ma **Wanhua**
    Director, Center for International Higher Education, Graduate School of Education, Peking University, China
25. Prof. Akiyoshi **Yonezawa**
    Director, Office of Institutional Research, Tohoku University, Japan
26. Prof. Abebaw Yirga **Adamu**
    Director, Quality Assurance, Addis Ababa University, Ethiopia

27. Prof. (Asso.) Lester Brian **Shawa**
Regional Director (East and Southern Africa), LEARN Logistics; Chairman, Kühne Foundation, Tanzania

28. Prof. Thierry **Luescher**
Director, Postgraduate Studies and Researcher Development, University of Cape Town, South Africa

29. Prof. (Asso.) Jude **Ssempebwa**
East African School of Higher Education Studies and Development, College of Education and External Studies, Makerere University, Uganda

30. Prof. Yamina El Kirat El **Allame**
Director, Moroccan Institute for Advanced Studies, Mohammed V University, Morocco

Table of Contents

Towards Equitable Higher Education Access: Implications of the Government Students Loans Scheme in Supporting Needy Students in Tanzania

Jacob Sululu, Victor George, and Joseph Kahimba

Abstract

This paper examines the students' loans scheme of the Government of Tanzania and its effects on equitable higher education access for students from poor households. Specifically, the paper looks at the method used by the Tanzania Higher Education Students' Loans Board (HESLB) to identify the needy students and the loan allocation criteria. The data for this article was obtained from survey of 480 continuing HESLB beneficiaries and key informants, including four Deans of Students, two HESLB officers, and four Loans Desk officers from sampled Higher Learning Institutions. The findings revealed that the presence of the higher education students' loan scheme successfully helped many students enroll in higher education and graduate. However, the efficiency of implementing the loan scheme based on the identification of needy students has been questioned, and the amount of loans allocated to students was inadequate compared to the increasing demand. The study recommends the review of the needy students' identification and allocation criteria, increasing government budget and accountability.

Key words: equitable access, government students' loan scheme, higher education, needy students

ABOUT THE AUTHORS: JACOB SULULU (email: sululujacob1164@gmail.com), VICTOR GEORGE, and JOSEPH KAHIMBA, The University of Dodoma, Tanzania

Sululu, J., George, V., & Kahimba, J. (2025). Towards Equitable Higher Education Access: Implications of the Government Students Loans Scheme in Supporting Needy Students in Tanzania. *International Journal of African Higher Education*, *11*(3), 1-21. https://doi.org/10.6017/ijahe.v11i3.17459

Résumé: Cet article examine le programme de prêts aux étudiants du gouvernement tanzanien et ses effets sur l'accès équitable à l'enseignement supérieur pour les étudiants issus de ménages pauvres. Plus précisément, l'article analyse la méthode utilisée par le Conseil tanzanien des prêts aux étudiants de l'enseignement supérieur (HESLB) pour identifier les étudiants dans le besoin et les critères d'attribution des prêts. Les données ont été obtenues à partir d'une enquête menée auprès de 480 bénéficiaires continus de la HESLB et d'informateurs clés, dont quatre doyens des étudiants, deux responsables de la HESLB et quatre responsables du bureau des prêts des établissements d'enseignement supérieur de l'échantillon. Les résultats ont révélé que l'existence du système de prêts aux étudiants de l'enseignement supérieur a permis à de nombreux étudiants de s'inscrire dans l'enseignement supérieur et d'obtenir un diplôme. Cependant, l'efficacité de la mise en œuvre du système de prêt basé sur l'identification des étudiants nécessiteux a été remise en question, et le montant des prêts alloués aux étudiants était inadéquat par rapport à la demande croissante. L'étude recommande de revoir les critères d'identification et d'attribution des prêts aux étudiants nécessiteux, d'augmenter le budget du gouvernement et de rendre des comptes.

Mots clés: accès équitable, programme gouvernemental de prêts aux étudiants, enseignement supérieur, étudiants dans le besoin

Introduction

The financing of higher education globally faces significant challenges due to rising programme costs and increased public demand, as higher education is recognised as a key driver of national economic growth and individual opportunity (Cloete et al., 2011; Kossey & Ishengoma, 2017; Makimu, 2017). In developing countries, many students aspire to pursue tertiary education; however, income poverty often hinders access, leading to high dropout rates in the early stages of their academic pursuits (Aina et al., 2022; De Gayardon & Brajkovic, 2019; Salmi, 2020). Since the 1980s, the global landscape of higher education financing has shifted from predominantly public funding to market-driven approaches, prompting significant reforms in funding mechanisms. These reforms aim to expand access, ensure equity, improve quality, and enhance governance in higher education (Barrera-Osorio et al., 2012; Greener, 2020; MacLean, 2011; Mazon et al., 2020; Therkildsen, 2009; UNESCO, 2016). The inadequacy of previous funding policies to meet growing demands has necessitated greater private sector involvement; however, this has often exacerbated inequalities, restricting access for low-income students compared to their more affluent peers (Khan, 2018; Robertson & Verger, 2012; Stewart &

Walsh, 1992; Kwiek, 2018; Oketch, 2016). In response, governments and the private sector have increasingly allocated budgets for scholarship programmes and implemented student loan schemes since the late 20th century as part of cost-sharing policies aimed at enhancing equitable access to higher education. These initiatives have notably improved opportunities for students from low-income households (Ishengoma, 2004; Johnstone, 1993; Msigwa, 2016; Dente & Piraino, 2011; Duraisamy & Duraisamy, 2016; De Gayardon & Brajkovic, 2019; Rasmussen, 2006; Sisto, 2019). However, there have been continuing debates on the identification of the needy students and loan allocation criteria. In the developed countries such as the UK, France, Germany and the U.S.A., much of the debate on higher education funding mechanisms has largely been about value for money and, to a lesser extent, about widening equitable access (Johnstone, 1983). But in the low-income countries, notably sub-Saharan Africa, the debate is far more than value for money. There are both economic and moral arguments that have been made about widening equitable access through a taxpayer-funded model of cost sharing, which is operationalised in the philosophy of "using the public fund today and then paying it back as you generate income after completion of your study" (Makulilo, 2014; Mgaiwa, 2023; URT, 2018). In this regard, many governments in Africa have been implementing the cost-sharing policy of higher education since the 1990s (Mgaiwa, 2023; Perna, 2016; World Bank, 2010). Tanzania, for instance, established the national higher education policy in 1999, which came into practice in 2004 (Nyahende, 2013; Rasmussen, 2006; URT, 1999). The policy, among others, called for the launch of a government students' loans scheme (GSLS), which aims at widening the space to higher education for students from low-income families. The policy also called for the creation of the Higher Education Students' Loans Board (HESLB) under the Parliament Act No. 9 of 2004. This Act gave the HESLB the power to set up a funding mechanism that would sort loan applicants into groups based on how much money they need (Mapunda, 2019; Goldrick-Rab, 2016; URT, 1999). This approach led to the enrollment and graduation of many students from low economic backgrounds in higher education institutions. Data from HESLB reports of 2021/2022 and 2022/2023 show an increasing trend of enrollment, which amounted to 177,892 and 205,893, respectively. Despite HESLB's success in increasing disbursement, which is also realised in enrollment expansion and completion, concerns have been raised about the efficiency of the loan scheme, particularly the criteria for identifying needy students and the adequacy of the allocated loans. The growing number of secondary school graduates has also increased the demand for loans (HESLB, 2021; TCU, 2018). This article, therefore, examines the government's student loan scheme in Tanzania, specifically

focusing on how the HESLB identifies needy students and the criteria used for loan allocation.

Conceptual and Theoretical Review

Equitable access to higher education has been conceptualized primarily through the lens of social inclusiveness, as articulated by scholars such as Campbell (2007), De Gayardon & Brajkovic (2019), and James (2014). Five principles make up the idea of equitable access: (a) anyone with the academic credentials should be able to go to university; (b) there shouldn't be any barriers to higher education; (c) academic merit should be the only factor used to decide who gets into universities; (d) there shouldn't be any bias in the selection process for university placements based on social class, economic status, gender, religion, or ethnicity; and (e) everyone should have the same chances to grow and develop their skills. Drawing on this conceptual framework, various policies and strategic decisions have been instituted globally to enhance equity in access to higher education. For example, the European Union Council's conclusions of May 11, 2010, emphasise that "education and training across the European Union need to ensure both equity and excellence for not only economic growth and competitiveness but also for reducing poverty and fostering social inclusion" (European Council, 2010). Nevertheless, the discourse surrounding the financing of education, particularly higher education, has been marked by divergent viewpoints. This has led to a protracted debate regarding the responsibility of financing, specifically, who should bear the costs, and the rationale behind this financial burden. Central to this debate are the substantial benefits that accrue from higher education. The question arises: who precisely reaps the rewards of such investments: individuals or the state? (Blagg & Blom, 2018; Findler et al., 2019).To address these complex issues, this study employs Human Capital Theory (HCT) and Social Justice Theory (SJT). HCT posits that the productivity of human capital is significantly linked to the acquisition of higher education. The resultant increase in human capital productivity yields benefits for both individuals, in terms of enhanced earning potential, and for the nation as a whole, reflected in elevated Gross Domestic Product (GDP) (Becker, 1967; Schultz, 1971; Smith, 1776; Zamora, 2020). Therefore, governments, students, and their families should share the financial responsibility for higher education (Laura & Jeff, 2017; De Gayardon & Brajkovic, 2019; URT, 1999). Furthermore, Schultz (1971) and Turner (2019) argue that augmenting investment in human capital significantly boosts individual productivity. Therefore, for a nation to progress toward sustainable development, concerted efforts must be directed at large-scale human capital development through investment in higher education (Barr,

2010; Barrera-Osorio et al., 2012). The application of HCT in this analysis aims to elucidate the critical connection between educational investment and broader developmental outcomes. In a knowledge-based economy, this theoretical framework also stresses how important financial resources are for promoting fair human capital development.

Despite its foundational contributions to understanding the relationship between education and economic development, Human Capital Theory (HCT) falls short in delineating the equitable distribution of financial resources necessary for facilitating access to higher education. This gap in HCT's framework necessitates the incorporation of Social Justice Theory (SJT) as a complementary analytical tool (Alegre & Ferrer, 2010; Keddie, 2012; Knijn & Akkan, 2020). Thus, SJT has emerged as a prominent discourse among social science researchers, particularly within the context of contemporary development agendas. This theory specifically addresses issues of social inclusion and equity in the allocation of public services and resources, emphasizing the differential access experienced by various social groups based on their levels of adversity, including but not limited to economic hardship, disability, gender, and ethnicity (Alegre & Ferrer, 2010; Keddie, 2012; Knijn & Akkan, 2020). SJT articulates three principal concerns relevant to resource distribution. Firstly, it posits that fairness is operationalized when resources are allocated in proportion to individuals' levels of need. This principle implies that perceptions of fairness are significantly influenced by the underlying rule of neediness, which asserts that individuals exhibiting greater need should receive a larger share of resources compared to those with lesser needs. Secondly, SJT critically examines the mechanisms employed to facilitate the distribution of these resources, advocating for transparency and accountability in the processes that govern resource allocation. This scrutiny extends to evaluating whether these mechanisms yield equitable outcomes for all stakeholders involved. By integrating SJT into discussions of higher education finance, researchers and policymakers can better address the complexities of equitable access and foster an environment in which educational opportunities are accessible to all, regardless of their socioeconomic status. In practical applications, Social Justice Theory (SJT) has been embraced by various countries, including Tanzania, which has undertaken a comprehensive review of public policy frameworks to incorporate principles of distributive justice. A salient example of this is evident in the higher education financing policy, particularly through the implementation of government-sponsored student loan schemes. According to the Higher Education Students' Loans Board (HESLB, 2022), these initiatives have significantly enhanced access to higher education for numerous students across the nation. Moreover, the HESLB

Act of 2016 and the loan application guidelines for the 2023/2024 academic year explicitly underscore the commitment to equitable distribution of higher education resources. These legislative documents delineate criteria whereby Tanzanian students classified as financially disadvantaged and who are admitted to accredited higher education institutions are eligible for loans that will effectively cover their educational expenses. The provisions articulated within these policy frameworks collectively underscore the practical application of Social Justice Theory in addressing the pressing issue of equitable access to higher education in Tanzania. By ensuring that financial assistance is directed toward those most in need, these policies not only facilitate individual educational opportunities but also contribute to the broader societal objective of reducing inequalities within the educational landscape.

Study Method

Data for this study were obtained through an embedded mixed method research approach, which effectively combines quantitative and qualitative methods to provide a comprehensive analysis of the research objectives (Mugenda & Mugenda, 2021). Four higher learning institutions, notably, the University of Dar es Salaam, the University of Dodoma, Saint Augustine University of Tanzania, and Saint John's University of Tanzania, were purposely chosen for the study. The selection of the four mentioned higher learning institutions offers several significant benefits. Firstly, these institutions collectively represent over 48.5% of university enrolment in Tanzania, thus, ensuring that the findings will be reflective of a substantial portion of the student population affected by the Higher Education Students' Loans Board (HESLB). This large sample size enhances the reliability and generalizability of the study results and providing insights that are applicable to a wide range of students. Additionally, the diverse academic offerings across these universities allow for an exploration of varying educational experiences, challenges, and outcomes. By focusing on institutions that play a pivotal role in shaping Tanzania's higher education landscape, the study can address critical issues related to student financing, equitable access to education, and the overall effectiveness of loan programmes. Ultimately, this strategic selection not only strengthens the validity of the research but also ensures that the recommendations derived from the study will be relevant and impactful for policymakers, educators, and students themselves. Yamane's formula was used to determine the sample size of 480 HESLB beneficiaries. The formula states that n = N / [1 + N (e) 2]. The formula uses n as the sample size, N as the finite population, e as the level of significance or the limit of tolerable error, and 1 as a unit or a constant. The recruitment of a sample size from each university was based on proportional sampling, as reflected in Table 1. Respondents were obtained through a convenience sampling technique.

Additionally, four focus group discussions (FGDs) were conducted with seven HESLB beneficiaries from each university's student representative teams. The leaders of the students' organisations facilitated the enrolment of participants for the FGDs. In-depth interviews were also conducted with university administrators, i.e., loan desk officers and deans of students, on matters relating to the needy identification criteria applied by HESLB, their relevance, and students' survival based on the amount of loans allocated. Both in-depth interviews and FGDs were audio-recorded after seeking consent from the participants. ANOVA and chi-square tests were used to test the association of variables under investigation, respectively. The thematic framework approach, on the other hand, was used for analysing qualitative data, whereby data were classified and organised according to key themes and concepts. Table 1 provides information on the respondents' distribution and sampling methods.

Table 1: Respondents' Distribution and Sampling Techniques

Respondents' category	Number of respondents					Sampling Techniques
	UDSM	UDOM	SJUT	SAUT	Total	
Loans beneficiaries for survey	165	164	45	106	480	Simple random
Loans beneficiaries for FGD	7	7	7	7	28	Purposive
Loans desk officers	1	1	1	1	4	Purposive
Deans of Students	1	1	1	1	4	Purposive
Officers from Higher Education Students Loans Board					2	Purposive

Source: Field Survey (2023)

Results and Discussion

The results are organised into three sub-themes: the way or method that applicants with financial need were identified, how loans were distributed across different types of universities and degree programmes where students enrolled, and how the HESLB budget changed over time.

Method Used to Identify Needy Students for Loans

The identification of needy students for higher education loans in Tanzania has significantly evolved since the establishment of the Higher Education Students' Loans Board (HESLB) scheme. From 2004 to 2006, loan

allocations primarily relied on academic merit, requiring applicants to submit forms assessed based on their Form Six results. Students achieving first-division scores received full loan amounts, regardless of their socio-economic status or degree programme. This resulted in a tiered allocation system where loan percentages decreased based on academic performance, with grades categorised from A (100%), B (90%), and C (80%) to D (70%) and E (60%). However, this approach inadequately addressed equity in higher education access, as it focused solely on academic achievement and ignored the diverse socio-economic backgrounds of students. Consequently, this practice exacerbated existing inequalities, as students from disadvantaged families often struggled to perform at the same level as their more affluent peers. This underscores the necessity for a more equitable approach that incorporates a social justice framework in the loan allocation process.

From 2007 to 2010, the Higher Education Students' Loans Board (HESLB) adopted a method that combined academic merit with socio-economic assessments for loan eligibility. Applicants were evaluated based on criteria such as family income, asset ownership, orphan status, and parental disabilities, with government priority programmes also influencing loan amounts. However, this reliance on socio-economic status (SES) created opportunities for misrepresentation, allowing affluent individuals to unjustly secure resources intended for genuinely needy students. Consequently, this misallocation perpetuated inequalities, hindered equitable human capital development, and limited opportunities for lower-income students, thus undermining broader goals of equity and social mobility. In 2011, the Higher Education Students' Loans Board (HESLB) in Tanzania updated its criteria to better identify students in need of financial assistance. This revised approach assesses an applicant's financial need by examining their family's socio-economic status, particularly the parents' ability to pay for lower-level education costs, such as primary and secondary school fees. The evaluation compares these educational expenses to the total cost of the degree programme the student is applying for. If the assessment shows that parents cannot afford the higher education costs, the student is deemed eligible for a loan to cover the remaining balance. Conversely, if the parents can finance these costs, the student does not qualify for a loan. This method continues to guide HESLB's loan allocation process for needy students in Tanzania today.

The current method employed by the Higher Education Students' Loans Board (HESLB) to identify needy students for loan eligibility presents significant implementation challenges in Tanzania, particularly in

accurately assessing both official and informal income sources for citizens. While HESLB utilises this approach as a primary concern in the means testing of applicants, it is essential to note that means testing serves only as an analytical tool rather than a definitive decision-making instrument, as reported by an HESLB officer during an in-depth interview. The information derived from means testing is considered alongside other factors, such as the total government budget allocated for student loans in a given year and the government's priority programmes. This multi-faceted evaluation process can limit equitable access to higher education for disadvantaged populations. Consequently, the distribution of financial support may be influenced more by the available government budget and the prioritisation of specific degree programmes rather than the actual financial needs of applicants. As a result, many genuinely needy students, particularly those enrolled in non-prioritised programmes or facing severe financial hardship, may be excluded from receiving adequate support, thereby perpetuating inequalities in access to higher education. One of the HESLB officers encapsulated this perspective in the insights shared during the in-depth interview as follows:

> We consistently endeavour to ensure that all qualifying needy applicants receive loans based on their demonstrated financial need. However, a significant challenge we face is budgetary constraints. The government typically prepares the budget after students have already applied for loans, resulting in a disconnect that fails to accurately reflect actual demand. We recommend that the government allocate the HESLB loan budget in advance to effectively meet the requirements of the board. (Interview with key informant, 2023)

The above statement shows that big problems still exist, even though the Higher Education Students' Loans Board (HESLB) has tried to improve the way it finds students who need help and has pushed for more government money for student loans. Beneficiaries and stakeholders declared that many genuinely needy students receive inadequate support or no loans at all, while the revised approach inadvertently enables some students from affluent families to benefit. Furthermore, the method of evaluating a student's financial capacity based on a family's 'ability to pay pre-college education costs can yield misleading conclusions, as not all wealthy families opt for private schooling; many choose public schools instead. Consequently, HESLB's measurement criteria may lead to flawed outcomes, contributing to negative perceptions among beneficiaries.

The focus group discussion further highlighted significant dissatisfaction among students regarding the Higher Education Students' Loans Board's (HESLB) criteria for identifying needy students and allocating loans. Participants across sampled universities criticised the criteria for unfairly assessing applicants' financial capability based on pre-college educational expenses. It was indicated during FGDs that many Tanzanian households, especially in rural areas, face unrealistic income levels, compelling some students to engage in entrepreneurial activities for support, which they can no longer pursue when joining higher education. As a result, HESLB's means-testing formula inadequately addresses these circumstances, leading to insufficient loan allocations. Students' representatives expressed concerns about the unfairness and ineffectiveness of the means-testing process, arguing that genuinely needy students often receive lower allocations than those less in need, despite accurately completing their applications. Some compared applying for HESLB loans to a gamble, highlighting cases where orphans received minimal loans compared to peers in similar situations. This perception suggests that significant challenges persist, exacerbated by incomplete applications and a limited budget that hinder thorough identification of needy applicants. One of the representatives articulated these issues during the FGDs as follows:

> HESLB is not doing well in needy students' identification. This is due to the fact that many students who qualify for loans were not allocated adequately. Indeed, the amount of loans allocated does not sufficiently cover programme costs for many of the students. As a result, some of them fail to prosper well with their studies. (FGD participant, 2023).

Statistics show that as income poverty rises, many families in developing countries, including Tanzania, opt for public schools due to lower costs (UNESCO, 2016; World Bank Education Statistics, 2016). UNICEF's (2018) report on education in Tanzania also found that economic hardships have pushed more families toward public schooling. The study indicates that, as household income declines, the reliance on public education systems increases due to the unaffordable nature of private school fees. The Tanzania National Bureau of Statistics has further reported a significant increase in public school enrolment rates following the implementation of free primary and secondary education policies since 2016. The economic constraints faced by many families, particularly in rural areas where poverty levels are higher, significantly influenced this flow. Certainly, this trend has in turn increased the number of needy students seeking higher education due to increased graduates' rates. This study aims to investigate the extent to which the income of students' parents influences their access

to higher education. The results show a strong link: 48% to 75% of students from families making TZS 400,000 or less per month said that college was moderately to severely affordable, while 59% to 79% of students from families making more than this amount said it was moderately affordable, as shown in Table 2.

Table 2: Parents' Income Capacity to Afford Higher Education Costs for Their Children

Monthly Income of the Family	Affording Higher Education Costs				Spearman Coefficient
	Great Extent	Moderate	Low Extent	Total	
200,000 and below	1 (1)	43 (24)	133 (75)	177(100)	-0.4253***
200,001 - 300,000	0 (0)	28 (47)	31 (53)	59 (100)	
300,001 - 400,000	2 (3)	34 (48)	35 (49)	71 (100)	
400,001 - 500,000	3 (4)	40 (61)	23 (35)	66 (100)	
500,001 - 600,000	0 (0)	23 (59)	16 (41)	39 (100)	
600,001 - 700,000	1 (5)	15 (79)	3 (16)	19 (100)	
Above 700,000	7 (18)	28 (72)	4 (10)	39 (100)	
Total	**14(3)**	**211 (45)**	**245 (52)**	**470(100)**	

*** ($p < 0.001$) indicates a strong level of statistical significance of the independent variable's effect on the dependent variable.
Source: Field Survey (2023)

The findings in Table 2 indicate that parental income significantly influences the ability or inability of children to afford higher education costs. It was determined that families require a minimum monthly income of TZS 400,000 to achieve a moderate capacity for supporting their children's education under a cost-sharing arrangement. In comparison, the Tanzania Household Budget Survey of 2018/19 reported an average household income below TZS 500,000, yet those with incomes above this threshold often demonstrated a moderate ability to cover higher education expenses. These results suggest that a substantial portion of the Tanzanian population lacks the economic means to fully finance higher education for their children. Consequently, government interventions, such as loan and scholarship programmes, are essential for promoting equitable access to higher education. These findings align with Social Justice Theory, which emphasises the necessity of addressing systemic and structural barriers that perpetuate inequality in access to education based on socio-economic status and other adversities.

Loan Allocation Status by Degree Programme Clusters and University Type
The data presented in Table 3 illustrate the total loan amounts required to cover degree programme costs for students in public versus private higher learning institutions. In contrast, Table 4 highlights the discrepancies resulting from current HESLB allocation practices. The findings indicate that the actual financial requirements necessary to cover the total costs of the programme exceed the amounts presently allocated by the HESLB to the majority of students. This substantial disparity is primarily attributable to tuition fees and practical fieldwork expenses, as substantiated by the data presented in both tables.

Table 3: Loan Requirements for Covering Total Degree Programme Costs

University Type	Tuition Fee	Meals & Accommodation	Books & Stationaries	Field Practical	Special Faculty	Total Loan
Public	700,000-1,300,000	2,040,000	200,000	600,000	85,000	4,225,000
Private	1,700,000-3,000,000	2,040,000	200,000	600,000	85,000	6,925,000

Source: Field Survey (2023)

Table 4: Discrepancy in HESLB Loan Allocations for Degree Programme Costs

University Type	Tuition Fee	Meals & Accommodation	Books & Stationaries	Field Practical	Special Faculty	Total Loan
Public	400,000-600,000	2,040,000	200,000-160,000	200,000	85,000	2,925,000
Private	400,000-600,000	2,040,000	200,000-160,000	200,000	85,000	2,925,000

Source: Field Survey (2023)

The observations presented in Table 4 highlight a significant inadequacy in the loan amounts allocated to many students, as these sums fall short of the total programme costs necessary for their educational pursuits. Notably, the allocated funds appear to be uniformly distributed across various expenses, including tuition fees, meals and accommodation, as well as stationery and fieldwork costs, irrespective of whether the students are enrolled in public or private universities. This uniform distribution raises critical questions regarding the efficacy and relevance of the criteria employed for identifying and allocating financial assistance to those in need. The implications of these findings necessitate a thorough examination of the underlying processes

governing loan distribution, as they may not effectively address the diverse financial challenges faced by students across different educational contexts.

Comparing Loan Allocation Across Degree Programme Clusters
The present study further examines the variability of loan allocations across different degree programme clusters. An analysis of variance (ANOVA) was employed to evaluate differences in average loan allocations among these clusters. The primary objective was to determine whether, on average, the loan amounts allocated to one cluster differed significantly from those allocated to others. This comparative analysis encompassed all categories of loans, as well as the overall loan amounts. The results, as detailed in Table 5, offer critical insights into the disparities in loan allocations across various categories. The ANOVA F-statistics show that the average loan amounts for the different types of degree programmes are significantly different. This shows how important it is to have a deeper understanding of the factors that cause these differences.

Table 5: ANOVA Analysis of Loan Allocation Across Degree Programme Clusters

Loan Category	ANOVA F Statistic	Bonferroni Comparison		
		I - II	I - III	II - III
Total	19.63***	-128,373.0	-494,247.0***	-365,874.0***
Tuition fees	12.50***	24,634.1	-272,049.0***	-296,683.0***
Meals & Accommodation	5.18***	-115,519.0*	-103,762.0**	11,757.6
Practical training	15.58***	44,553.0***	-13,973.5	-58,526.0***
Stationeries	8.93***	72,232.5**	-50,949.0**	-123,182.0***

* = significant at 10%, ** = significant at 5%, *** = significant at 1%
Source: Field Survey (2023)

Also, the Bonferroni comparison showed big differences in the average loan amounts given to the degree programme clusters. For example, Cluster III consistently got less money than Clusters I and II. This trend was particularly evident across various categories, including the total loan amount, tuition fees, field practicals, and stationery. However, no significant differences were detected in the allocations for meals and accommodation. These findings raise critical concerns regarding the effectiveness of the current loan allocation criteria, suggesting that either these criteria are inadequate or that budgetary constraints are leading to uniformly low allocations. Such flat-rate distributions appear to prioritise increased enrolment rates

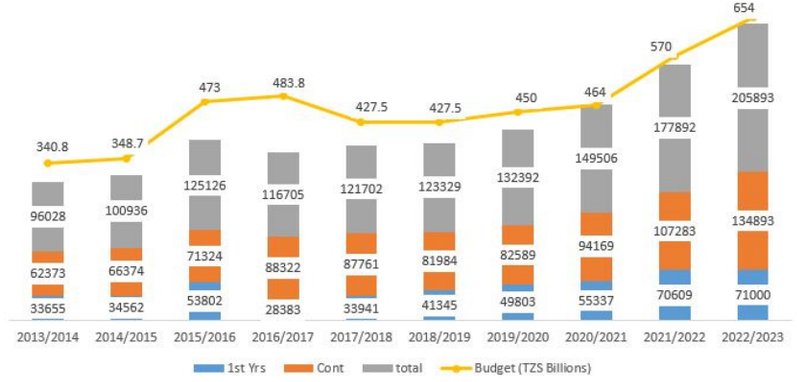
rather than ensuring equitable access for students, particularly those in need, thereby undermining their ability to survive and achieve qualitative outcomes in higher education as suggested by both human capital and social justice frameworks. From a social justice perspective, the inequitable distribution of loan funds raises fundamental concerns about fairness and access. The current allocation criteria seem to favour increased enrolment rates without adequately addressing the needs of disadvantaged students. This approach perpetuates systemic inequalities, as it fails to provide the necessary support for students who may already be at a disadvantage, thereby exacerbating social disparities.

Trends in the Flow of HESLB Budget Allocations

The secondary data analysis indicates that, despite the government's ongoing efforts to augment its budget for financing higher education, the escalating demand for loans driven by rising graduation rates in pre-college education has adversely affected loan allocations. Figure 1 illustrates the trends in the HESLB budget and allocations from the 2013/2014 to the 2022/2023 academic years. The data highlights a notable variation in the loan budget in relation to student enrolment numbers each year. Specifically, fluctuations in enrolment significantly impacted the loan budget. For instance, an increase in enrolment from 2015/2016 to 2016/2017 resulted in an infusion of approximately 10.8 billion TZS into the HESLB budget, coinciding with an enrolment surge to 116,705 students. Conversely, between the 2017/2018 and 2018/2019 academic years, the HESLB budget remained unchanged, despite a continued rise in enrolment rates. However, a subsequent increase in budget allocations was observed in the 2020/2021 and 2022/2023 academic years, with the budget rising from 464 to 654 billion TZS to accommodate the growing number of loan beneficiaries, which expanded from 149,506 to 205,893 students. This trend highlights the complexities inherent in aligning budgetary provisions with the demands of an increasing student population.

The findings illustrated in Figure 1 highlight a critical disparity between the escalating demand for loans among Tanzanian youths and the government's loan budget allocations.

Figure 1: Trends in the Flow of HESLB Budget from 2013/2014 to 2022/2023



Source: HESLB (2023)

This inconsistency poses significant challenges to equitable access to higher education, a concern that can be analysed through the lenses of human capital and social justice theoretical viewpoints. Human capital theory posits that investment in education is essential for enhancing individual capabilities and fostering economic growth. However, the inadequate loan allocations fail to support the educational aspirations of many students, particularly those from low-income backgrounds. When financial resources are insufficient, the potential for these individuals to acquire the skills and knowledge necessary to contribute effectively to the economy is diminished. Consequently, the gap between the rich and poor widens, as only those with sufficient financial means can afford the necessary educational investments. From a social justice perspective, the findings raise profound ethical concerns regarding fairness and equity in educational access. The persistent mismatch between demand for loans and the funds allocated suggests systemic inequities that disproportionately affect marginalised populations. Students from low-income families, who already face significant barriers to education, are further disadvantaged by inadequate financial support. This situation undermines the principles of social justice, which advocate for equal opportunities and the removal of barriers that prevent equitable access to education.

Thus, addressing these disparities requires a re-evaluation of the current loan allocation policies to ensure they are responsive to the actual needs of students. Implementing a more equitable framework would not only enhance individual human capital but also promote social justice by

providing all students, regardless of their socio-economic status, with the opportunity to succeed in higher education and, ultimately, in their professional lives. The alignment of educational funding with the principles of human capital and social justice is essential for fostering a more inclusive and productive society.

Conclusion and Recommendations

The HESLB in Tanzania has changed the loan allocation methods a lot since it was first set up. It used to only consider academic merit, but now it also considers socio-economic factors. While this dual approach aimed to enhance equity, it has revealed significant shortcomings, allowing affluent individuals to exploit the system and secure resources intended for genuinely needy students. This misallocation not only perpetuates existing inequalities but also limits opportunities for those from lower-income backgrounds, ultimately undermining the goals of social mobility and equitable human capital development. The study also shows that the current standards, which check parental income and financial ability mostly by looking at how much pre-college education costs, give wrong results, especially since the economy is getting worse. The data reveal a stark correlation between household income and the ability to afford higher education, with a substantial portion of families earning below TZS 400,000 per month struggling to finance educational expenses under the cost sharing approach. This situation underlines the urgent need for government interventions, including enhanced loan and scholarship programmes, to mitigate systemic barriers and ensure equitable access to higher education. Additionally, the introduction of flexible loan structures, including income-driven repayment options, will accommodate the varying financial capacities of students throughout their academic studies. Regular reviews of these criteria will ensure their continued relevance and effectiveness in addressing the evolving landscape of higher education financing. Ultimately, these reforms are vital for fostering a more equitable education system in Tanzania, thereby promoting equal opportunities for all students regardless of their socio-economic status.

References

Aina, C., Baici, E., Casalone, G., & Pastore, F. (2022). The determinants of university dropout: A review of the socio-economic literature. *Socio-Economic Planning Sciences*. 101102ps://doi.org/10.1016/j.seps.2021.101102

Alegre, M. A., & Ferrer, G. (2010). The study focused on the relationship between school regimes and education equity: Some insights based on PISA 2006. *British Educational Research Journal*, *36*(3), 433–462. https://doi.org/10.1080/01411920902989193

Barr, N. (2010). *Paying for higher education: What policies, in what order*. London School of Economics and Political Science.

Barrera-Osorio, F., Guaquet, J., & Patrinos, H. A. (2012). The role and impact of public-private partnerships in education. *New Actors and Modes of Governance in a Globalizing World*,*3*(C) 153–186). Becker, G. S. (1967). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, *70*(5), 9–49. https://doi.org/10.1086/258724

Blagg, K., & Blom, E. (2018). *Evaluating the return on investment in higher education: An assessment of individual- and state-level returns*. Urban Institute.

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946-967.

Cloete, N., Bailey, T., Pillay, P., Bunting, I., & Maassen, P. (2011). *Universities and economic development in Africa: Pact, academic core, and coordination*. Center for Higher Education Transformation.

De Gayardon, A., & Brajkovic, L. (2019). Student finance policies worldwide: Leveraging funding for attainment and equity in higher education. *ResearchGate*. https://www.researchgate.net/publication/338052419

Dente, B., & Piraino, N. (2011). Models for determining the efficiency of student loan policies. *Journal of Higher Education Policy and Management*, *33*(4), 375–386. https://doi.org/1360080X.2011.585737

Deutsch, M. (1975). Equity, equality, and need: What determines which value will be used as the basis for distributive justice? *Journal of Social Issues, 31*(3), 137-149. https://doi.org/10.1111/j.1540-4560.1975.tb01000

Duraisamy, P., & Duraisamy, M. (2016). The study focused on contemporary issues in Indian higher education. *Higher Education for the Future, 3*(2), 144–163. https://doi.org/10.1177/2347631116648437

European Council. (2010). The European Council has developed a strategy for the 2020 agenda. European Council.

Findler, F., Schönherr, N., Lozano, R., Reider, D., & Martinuzzi, A. (2019). The impacts of higher education institutions on sustainable development: A review and conceptualization. *International Journal of Sustainability in Higher Education, 20*(1), 23-38. https://doi.org/10.1108/IJSHE-07-2017-0114

Fraser, N. (1999). Social justice in the age of identity politics: Redistribution, recognition, and participation. In R. Ray & A. Sayer (Eds.), *Culture and economy after the cultural turn* (pp. 25-52). Sage Publications.

Goldrick-Rab, S. (2016). *Paying the price: College costs, financial aid, and the*

betrayal of the American dream. University of Chicago Press.

Greener, I. (2020). The changing governance of welfare: Revisiting Jessop's framework in the context of healthcare. *Social Theory & Health*. https://doi.org/10.1057/s41285-020-00147-3

Higher Education Students' Loans Board (HESLB). (2021). *Annual report 2020/2021*. Ministry of Education, Science and Technology. https://heslb.go.tzHigher Education Students' Loans Board. (2022). *Annual report*. https://www.heslb.go.tz

Ishengoma, J. M. (2004). Cost sharing and participation in higher education in Sub-Saharan Africa: The case of Tanzania. *UNESCO Forum on Higher Education, Research and Knowledge*. http://repository

James, R. (2014). Ensuring equal opportunity in higher education: The importance of institutional context. In C. R. McInnis & R. James (Eds.). *Access and equity in higher education: Comparative perspectives* (pp. 45–60). Melbourne University Press.

Johnstone, D. B. (1983). *Sharing the cost of higher education: Students' financial assistance in the United Kingdom, the Federal Republic of Germany, France, Sweden, and the United States*. College Entrance Examination Board.

Johnstone, D. B. (1993). The cost of higher education: Worldwide issues and trends for the 1990s. In B. R. Clark (Ed.), *The funding of higher education: International perspectives* (pp. 123-145). Garland Publishing.

Keddie, A. (2012). Schooling and social justice through the lenses of Nancy Fraser. *Critical Studies in Education, 53*(3), 263–279. https://doi.org/10.1080/17508487.2012.691420

Khan, K. (2018). An exploratory case study of public-private partnership in education: A case from Karachi, Pakistan (Unpublished master's thesis). Aga Khan University.

Knijn, T., & Akkan, B. (2020). Mechanisms that impede justice. *Justice and vulnerability in Europe: An interdisciplinary approach (pp. 214–232)*. *Edward Elgar Publishing*.

Kossey, M. M., & Ishengoma, J. M. (2017). Issues and challenges of student financing systems in Africa: The case of Tanzania. *International Journal of African Higher Education, 4*(1). https://doi.org/10.6017/ijahe.v4i1.9047

Kwiek, M. (2018). Private higher education in developed countries. In *Encyclopedia of International Higher Education Systems and Institutions* (pp. 1–9). Springer. https://doi.org/10.1007/978-94-017-9553

Laura, H., & Jeff, B. (2017). The introduction of human capital theory into education policy in the United States. *History of Political Economy, 49*(4), 537–574.

Makimu, P. A. (2017). Student demographics and perceptions of the cost-sharing program for financing higher education in Tanzania and their relationship to perceived likelihood of student loan repayment. *ProQuest Dissertations and Theses, 266*. https://vpn.utm. my/docview/1904513509?accountid=41678

Makulilo, A. B. (2014). Financing higher education in Tanzania: The role of cost-sharing policy. *International Journal of Education Economics and Development, 5*(2), 167–182. https://doi.org/10.1504/IJEED.2014.064174

Mapunda, M. A. (2019). Challenges facing the Higher Education Students' Loans Board in loan recovery: The case of selected universities in Tanzania. *Business Education Journal, 2*(1), 0–15.

Mazon, G., Pereira Ribeiro, J. M., Montenegro de Lima, C. R., Castro, B. C. G., & Guerra, J. B. S. O. D. A. (2020). The promotion of sustainable development in higher education institutions: Top-down, bottom-up, or neither? *International Journal of Sustainability in Higher Education, 21*(7), 1429–1450. https://doi.org/10.1108/IJSHE-02-2020-0061

Mgaiwa, S. J. (2016). The paradox of financing public higher education in Tanzania and the fate of quality education: The experience of selected universities. https://doi.org/10.1177/2158244018771729

Msigwa, F. M. (2016). Widening participation in higher education: A social justice analysis of student loans in Tanzania. *Higher Education, 72*(4), 541–556.

Mugenda, O. M., & Mugenda, A. G. (2021). *Research Methods: Quantitative and Qualitative Approaches*. African Centre for Technology Studies Press.

Nyahende, V. R. (2013). The success of students' loans in financing higher education in Tanzania. *Higher Education Studies, 3*(3), 47. https://doi.org/10.5539/hes.v3n3p47

Oketch, M. (2016). Financing higher education in sub-Saharan Africa: Some reflections and implications for sustainable development. *Higher Education, 72*(4), 525–539. https://doi.org/10.1007/s10734-016-0044-6

Perna, L. W. (2016). Advancing access and equity through cost-sharing policies in higher education. *International Journal of Educational Development, 49*, 1–10. https://doi.org/10.1016/j.ijedudev.2016.02.003

Rasmussen, C. J. (2006). Effective cost-sharing models in higher education: Insights from low-income students in Australian universities. *Higher Education, 51*(1), 1–25. https://doi.org/10.1007/s10734-004-6373

Robertson, S., & Verger, A. (2012). The emergence of public-private

partnerships in the global governance of education. *The Emergence of Public-Private Partnerships in the Global Governance of Education, 33*(121), 1133–1156. https://doi.org/10.1590/S0101-73302012000400012

Salmi, J. (2020). COVID's lessons for global higher education: Coping with the present while building a more equitable future. *Journal of International Higher Education, 102*, 4-6.

Schultz, T. W. (1971). *Investment in human capital: The role of education and of research*. The Free Press.

Sisto, A. (2019). Financing higher education in Tanzania through students' loans scheme and its impact on equitable access. *PubMed*. https://pubmed.ncbi.nlm.nih. gov/36895382

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations*. W. Strahan and T. Cadell.Stewart, W., & Walsh, K. (1992). The politics of public-private partnerships in education. *Journal of Education Policy, 7*(3), 199–212.

Tanzania Commission for Universities (TCU). (2018). Higher education students' admission, enrollment, and graduation statistics, 2012/13–2017/18. http://bit.ly/2Wbffe6

Therkildsen, O. (2009). Public sector reforms and the development of productive capacities in LCDs. On trade and development. United Nations Conference on Trade and Development.

Turner, J. A. (2019). Policy landscapes and practice arenas: A review of and reflection on ICT actors and applications in African higher education. *Annual Review of Comparative and International Education 37*, 133–156. https://doi.org/10.1108/S1479-367920190000037013

UNESCO. (2016). *Education for people and planet: Creating sustainable futures for all*. Global Education Monitoring Report. Paris.

UNICEF. (2018). *Education budget brief: Tanzania*. United Nations Children's Fund. https://www.unicef.org/tanzania/reports/education-budget

United Republic of Tanzania (URT). (1999). National higher education policy. Ministry of Science, Technology and Higher Education. https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/tanzania_national_higher_education_policy_1999.

United Republic of Tanzania (URT). (2018). *Education sector development plan (2016/17-2020/21)*. Ministry of Education, Science, and Technology. https://www.globalpartnership.org/sites/default/files/2019-04-gpe-tanzania

World Bank. (2010). Financing higher education in Africa: Addressing the challenges of expansion, equity, and quality. *Africa Human Development Series*. World Bank.

World Bank. (2016). *World Bank education statistics (EdStats)*. The World Bank.

Zamora, B. (2020). A new discussion of the human capital theory in the methodology of scientific research programs (WP-AD 2007-26). *University of Alicante, Department of Economic Analysis*.

E-Learning Adoption and Use in Higher Education: Evidence from Zimbabwe

Alexander Maune

Abstract

E-Learning adoption and use by university students have become prevalent worldwide, but developing nations still need to catch up. This study aims to establish critical paths amongst determinants of "behavioural Intention" and "use behaviour" in eLearning use and adoption in Higher Education in Zimbabwe using the modified Unified Theory of Acceptance and Use of Technology. The PLS-SEM method was used to evaluate the modified unified theory of acceptance and use of technology path model. A sample of 520 university students was used to collect data using an online survey created on Google Forms. The findings show that "Habit" had the most influence (0.804) on "Behavioural Intention," followed by "Performance Expectancy" (0.319) and "Effort Expectancy" (0.270). Behavioural Intention had a significant influence (0.831) on "Use Behaviour." The path model explains 88.8% of "Behavioural Intention" and 76.1% of "Use Behaviour" variances. Though limited, this study is significant to students in higher Education, policymakers and researchers, given the importance of technology in the education sector.

Key words: e-learning; online learning; e-learning platforms; ODeL; higher education

ABOUT THE AUTHOR: ALEXANDER MAUNE, email: alexandermaune6@gmail.com, Business Management, CEMS, UNISA, Pretoria, South Africa; Banking & Finance, FOC, BUSE, Zimbabwe.

Acknowledgement: The author would like to thank his *'Zaidy'*, the late Professor B. R. S. Chivore, for his encouragement, support and contribution towards this study.

Maune, A. (2025). E-Learning Adoption and Use in Higher Education: Evidence from Zimbabwe. *International Journal of African Higher Education, 11*(3), 22-48. https://doi.org/10.6017/ijahe.v11i3.18053

Résumé: L'adoption et l'utilisation de l'apprentissage en ligne par les étudiants sont devenues courantes dans le monde entier, mais les pays en développement doivent encore rattraper leur avance. Cette étude vise à établir des chemins critiques entre les déterminants de « l'intention comportementale » et du « comportement d'utilisation » dans l'utilisation et l'adoption de l'eLearning dans l'enseignement supérieur au Zimbabwe en utilisant la théorie unifiée modifiée de l'acceptation et de l'utilisation de la technologie. La méthode PLS-SEM a été utilisée pour évaluer la théorie unifiée modifiée de l'acceptation et de l'utilisation de la technologie. Un échantillon de 520 étudiants universitaires a été utilisé pour collecter des données à l'aide d'une enquête en ligne créée sur Google Forms. Les résultats montrent que l'« habitude » a la plus grande influence (0,804) sur l'« intention comportementale », suivie de l'« attente de performance » (0,319) et de l'« attente d'effort » (0,270). L'intention comportementale a une influence significative (0,831) sur le « comportement d'utilisation ». Le modèle de cheminement explique 88,8 % de la variance des « intentions comportementales » et 76,1 % de la variance des « comportements d'utilisation ». Bien que limitée, cette étude est importante pour les étudiants, les décideurs politiques et les chercheurs, étant donné l'importance de la technologie dans l'enseignement superieur.

Mots clés: e-learning ; apprentissage en ligne ; plateformes d'apprentissage en ligne ; ODeL ; enseignement supérieur

Introduction

Integrating e-learning in education has become a crucial focus point, with universities positioned as a significant ground globally after COVID-19. COVID-19 revolutionised the education sector through technology, though historical traces of technological use in education date back to the 1960s (Weizenbaum, 1966; Faqih & Jaradat, 2021; Cukurova et al., 2023; Williamson et al., 2023; Gill et al., 2024; Bashir & Lapshun, 2025; Sherif & Amudha, 2025). Technology adoption and use in education date back to chatbot development (Weizenbaum, 1966; Cukurova et al., 2023; Bashir & Lapshun, 2025; Sherif & Amudha, 2025). However, eLearning became prevalent during and after COVID-19, especially in developed countries, but developing countries still need to catch up due to financial and infrastructural challenges. Adopting and using technology in education has seriously improved human capital development and higher education learning (Maune, 2023). Maune (2016), Qazi et al. (2020), Williamson et al. (2023) and Bashir and Lapshun (2024) argue that technology has become a crucial element in human capital development due to a significant increase in demand for novel skills. Higher Education today has become a conduit

through which technologies are developed and unveiled. Universities must adapt and exploit these new technologies, impacting human capital development and meeting the demands of the 21st century. Artificial intelligence applications such as ChatGPT have significantly transformed educational landscapes, with educators and learners leveraging their capabilities to augment their learning experiences through dynamic feedback (Cukurova et al., 2023).

Adopting and using e-learning technologies in universities is challenging (Strzelecki, 2023). Such challenges, particularly in Africa, have been influenced by socioeconomic classes dating back to the colonial era (Maune, 2023). The colonial era left a divide that is prevalent up to today. Irrespective of these challenges, the following eLearning platforms are being used in universities in Zimbabwe: Microsoft Teams, Wiseup, Moodle, and ChatGPT. Although eLearning adoption and use have gained popularity in Zimbabwe recently, research into factors influencing behaviour intention and use behaviour among university students still needs to be explored. This gap is particularly significant as it aids in informed policy development and implementation. Moreover, understanding the factors influencing student behaviour in e-learning use and adoption in higher education is crucial and needed. In closing this research gap, a clear perspective of the factors influencing the adoption and use of eLearning helps the educational system through tailor-made approaches that address students' concerns.

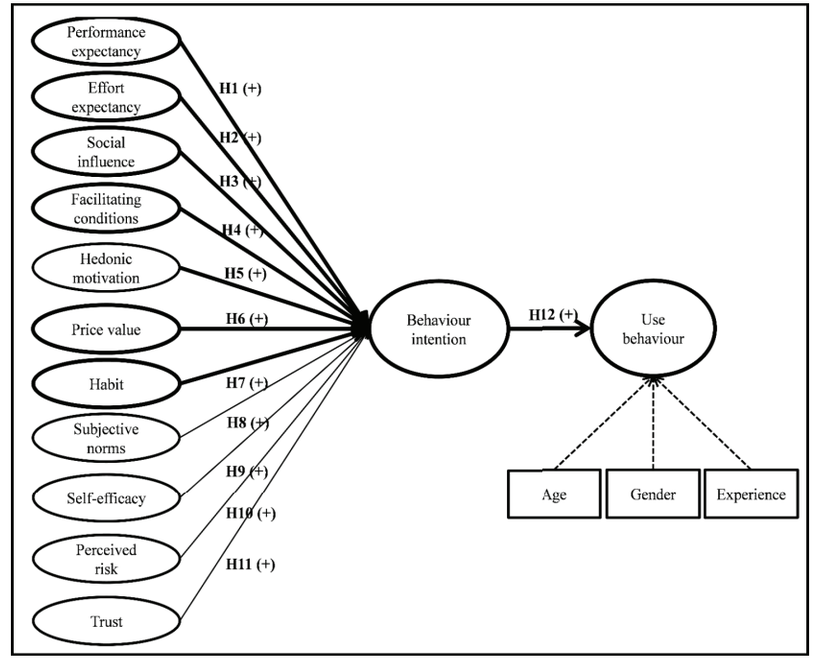
Since the construction of the UTAUT and its modification into UTAUT2, literature has shown an increasing interest in adopting and using technology in higher education (Venkatesh et al., 2003; Venkatesh et al., 2012). The impact of COVID-19 has also seen an increase in the use of e-learning technologies by university students worldwide. However, developing countries still need to catch up due to several financial and infrastructure constraints. Despite all these challenges, studies have shown a spike in university students' uptake of eLearning platforms (Akbari et al., 2022; Shams et al., 2022; Cojocariu et al., 2014; Wang et al.,, 2010; Maune, 2023; Ahmad et al. 2023). More research has also been conducted on the impact of AI applications on academic integrity (Cotton & Cotton, 2023; Tlili et al., 2023; Williamson et al., 2023).

Maune (2023) argues that several factors influence university students' behaviour intention and use of e-learning platforms. Kempson and Whyley (1999), Ellis et al. (2010) and Beck et al., (2009) argue that factors such as literacy, information, involuntary or voluntary, cost, trust, socioeconomic, eligibility, and documentation are among the top most influencers of eLearning technologies adoption and use in universities by students. These

factors must, however, precede behaviour intentions and use behaviour (Shneor & Munim, 2019).

Various theories such as Theory of Reasoned Action - TRA (Fishbein & Ajzen, 1975), Theory of Planned Behaviour - TPB (Ajzen, 1991), UTAUT (Venkatesh et al., 2003), and UTAUT2 (Venkatesh et al., 2012) and later modifications by various researchers, form the bases for this study. An extended model (Maune, 2021) developed in a prior study by the same author was examined using SEM to distinguish factors that impact eLearning technologies adoption and use by students in universities in Zimbabwe. Figure 1 provides the research model adopted for this study.

Figure 1: Path Analysis Model (Maune, 2021).



Hypothesis Development

The hypotheses below were formulated from a prior research model (Maune, 2021) developed by the same author, as shown in Figure 1. These hypotheses validated and tested the proposed path analysis model shown above. Table 1 shows the proposed research hypothesis.

Table 1: Proposed Research Hypothesis

Proposed Hypothesis
H_1 "Performance expectancy will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_2 "Effort expectancy will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_3 "Social influence will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_4 "Facilitating conditions will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_5 "Hedonic motivation will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_6 "Price value will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_7 "Habit will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_8 "Subjective norms will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_9 "Self-efficacy will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_{10} "Perceived risk will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H_{11} "Trust will have a direct positive influence on the behavioural intention to use eLearning platforms in universities by students."
H12 "Behavioural intention to use will have a direct positive influence on the eLearning platform use behaviour in universities by students."

This article seeks to close this research gap by examining the factors influencing e-learning technologies in higher education using the SmartPLS-SEM approach in Zimbabwe. An extended Unified Theory of Acceptance and Use of Technology (UTAUT2) by Venkatesh et al. (2012) and Maune (2021) informed the study by examining the factors influencing behaviour intention and use behaviour of e-learning technologies by university students in Zimbabwe.

The article first explains the extended model by Maune (2021) on eLearning adoption and use in Zimbabwe. A measurement scale tailor-made to suit this framework is also presented. After that, the results of the analysis using Smart PLS-SEM are shared. This is followed by a deep discussion of the research findings showcasing significant contributions of the study. The study will conclude with theoretical and practical implications, limitations, and future research direction.

Material and Methods

This study examined the use and adoption of eLearning in Zimbabwe's higher education. The role of behavioural intention was also examined. The study used a quantitative method to gain an in-depth appreciation of the relationships between the variables. We collected data from students in their second year (2.2) and fourth year (4.2) from two universities (one state-owned and one privately owned) using Google Forms online survey. A total number of 1680 commerce students were invited to participate in the survey from June to November 2023. Students were promised confidentiality, anonymity of responses, and voluntary participation to avoid biases. The survey was sent through a link generated from the Google Forms platform. At least ten minutes were needed to complete the survey. A pilot survey was distributed to 10 university students and lecturers to identify conspicuous characteristics and confusing, complex, and poorly worded questions. These adjustments were then incorporated into the primary survey that was distributed.

Limitations

This study uses a PLS-SEM algorithm to analyse the data to examine eLearning adoption and use by students in Zimbabwe universities. A path model in Figure 1 was evaluated to establish significant relationships between indicators. Sample size limited this study as a more significant sample could have improved the findings. This study could have used more universities, but only two were targeted. The study was also limited to students in the Faculty of Commerce and levels 2.2 and 4.2. Financial resources also limited the study as this study was self-funded. Given funding, the researcher could have improved the sample size by targeting students in different faculties and programs. The study was also limited to a single methodology.

Mixed methods will improve the research findings as studies have shown that mixed methods are better than mono-methods. Mixing qualitative and quantitative research methods is critical in dealing with biases associated with using one method. By using mixed methods, the researcher can answer a broader and more complete range of research questions because the researcher is not confined to a single method or approach. The researcher will be able to use the strengths of an additional method to overcome the weaknesses of another method by using both methods in a research study. Despite all this, the researcher forged ahead with the approach that worked for this study since truth is a 'normative concept.'

Respondents and Procedure

Completed surveys were automatically received from 525 respondents (31.25%). Observations with supposed unengaged respondents and missing data were deleted, and data from 520 respondents with complete data were utilised (30.95% response rate). Marcoulides and Saunders` (2006) investigation guided the sample size utilised in this article. The minimum sample size necessary must be determined by the maximum number of arrows pointing to the latent variable in the model (Marcoulides & Saunders, 2006). Prior scholars (Hoyle, 1995) also influenced the work, arguing that a modest sample size is usually an excellent place to start when performing path modelling. In this study, unengaged respondents reported the same response for all successive items (for example, a five across all observable variables). Descriptive demographic statistics are shown in Table 2.

Table 2: Demographic Statistics

Variable	Category	Occurrence	%age
Sex	Female	198	38%
	Male	322	62%
Age	<20	15	3%
	21 – 30	385	74%
	31 – 40	120	23%
Marital Status	Single	463	89%
	Married	52	10%
	Divorced	5	1%
Education	Level Two (2)	182	35%
	Level Four (4)	338	65%

Source: Compilation by author

Measurement

The students were invited to complete an online survey in Google Forms to measure the latent variables presented in the modified UTAUT model (Maune, 2021). These latent variables are self-efficacy, habit, hedonic motivation, performance expectancy, price value, effort expectancy, perceived risk, social influence, trust, facilitating conditions, subjective norms, behaviour intention, and use behaviour. The latent constructs scales in the model were adapted and modified from prior studies (Shneor & Munimb, 2019; Venkatesh et al., 2003; Groß, 2015; Venkatesh et al., 2012; and Abrahão et al., 2016). Wong (2013) explains that SEM has two measurement scales: reflective and formative. The indicators are firmly connected and interchangeable, implying that reliability and validity

tests were conducted in agreement with previous research (Shneor & Munimb, 2019; Petter et al., 2007; Hair et al., 2013). A 5-point Likert scale was utilised, with 1 indicating complete disagreement and 5 indicating complete agreement. Table 3 shows measurement items, factor loadings, and sources.

Table 3. Latent Variables, Measurement Items, Factor Loadings, and Sources

Latent variable	Measurement items	Factor loadings	Source
Performance Expectancy (PE)	1. "I find eLearning useful in my daily learning." 2. "Using eLearning increases my chances of achieving my learning goals." 3."Using eLearning helps me accomplish my studies/learning more quickly." 4. "Using eLearning increases my productivity."	0.933 Deleted 0.942 Deleted	'Venkatesh et al. (2003) & Venkatesh et al. (2012).'
Effort expectancy (EE)	1. "Learning how to use eLearning is easy for me." 2. "My interaction with eLearning is clear and understandable." 3. "I find eLearning easy to use." 4. "It is easy for me to become skillfull at using eLearning."	1.000 Deleted Deleted Deleted	'Venkatesh et al. (2003) & Venkatesh et al. (2012).'
Social influence (SI)	1. "People who are important to me think that I should use eLearning." 2. "People who influence my behaviour think that I should use eLearning." 3. "People whose opinions I value prefer that I use eLearning."	0.894 0.877 Deleted	'Venkatesh et al. (2012) & Venkatesh et al. (2003).'
Facilitating conditions (FC)	1. "I have the resources necessary to use eLearning." 2. "I have the knowledge necessary to use eLearning." 3. "ELearning platforms are compatible with other technologies I use." 4. "I can get help from others when I have difficulties using eLearning."	1.000 Deleted Deleted Deleted	'Venkatesh et al. (2003) & Venkatesh et al. (2012).'

Hedonic motivation (HM)	1. "Using eLearning is fun." 2. "Using eLearning is enjoyable." 3. "Using eLearning is very entertaining."	0.815 0.943 0.920	Venkatesh et al. (2012).
Price value (PV)	1. "ELearning is reasonably priced." 2. "ELearning is a good value for the money." 3. "At the current price, eLearning provide good value."	0.676 0.859 0.898	Venkatesh et al. (2012).
Habit (HT)	1. "The use of eLearning has become a habit for me." 2. "I am addicted to using eLearning." 3. "I must use eLearning." 4. "Using eLearning has become natural to me."	0.910 0.656 0.841 0.888	Venkatesh et al. (2012).
Perceived risk (PR)	1. "I would not feel completely safe to provide personal information through eLearning platforms." 2. "I am worried about the future use of eLearning platforms because other people might be able to access my data." 3. "I do not feel protected when sending confidential information via eLearning platforms." 4. "The likelihood that something wrong will happen with the use of eLearning platforms is high."	0.588 Deleted 0.943 0.710	Abrahao et al., 2016.
Trust (TT)	1. "I think they are honest." 2. "I think they are trustworthy." 3. "I think they provide good services to users." 4. "I think they care about their users and take their concerns seriously." 5. "I think they keep users' security and privacy in mind."	Deleted Deleted 0.956 Deleted 0.663	Groß (2015).

Subjective norms (SN)	1. "People who are important to me think that I should use eLearning platforms in learning." 2. "People who influence my behaviour encourage me to use eLearning platforms in learning." 3. "My colleagues think that I should use eLearning platforms in learning." 4. "My friends think that I should use eLearning platforms in learning."	0.876 0.637 0.867 Deleted	Shneor & Munimb (2019).
Self-efficacy (SE)	1. "I have confidence in my ability to use eLearning platforms in learning." 2. "I have the expertise needed to use eLearning platforms." 3. "I am confident in my ability to navigate and use eLearning platforms in learning." 4. "I am confident in my ability to use eLearning platforms in learning."	0.836 Deleted Deleted 0.999	Shneor & Munimb (2019).
Behavioural intention (BI)	1. "I intend to continue using eLearning platforms in learning in the future." 2. "I will always try to use eLearning platforms in learning." 3. "I plan to continue to use eLearning platforms in learning frequently."	0.924 Deleted 0.919	'Venkatesh et al. (2003) & Venkatesh et al. (2012).'
Use behaviour (UB)	1. "I frequently use eLearning platforms in learning." 2. "I spend much effort in using eLearning platforms in learning."	0.925 0.811	Shneor & Munimb (2019).

Source: Authors' compilation

Structural Equation Modelling Approach

This study utilised SmartPLS3 for data analysis, following previous methods in SEM (Maune et al., 2021). This approach was preferred due to predictive accuracy and its applicability in dealing with small sample sizes. Despite the limitations associated with the approach (Wong, 2013), it has become more prevalent in applied research projects. Moreover, Maune et al. (2021) argue that the approach has been applied in management information systems, marketing, organisation, business strategy, and behavioural

sciences, among other fields. Data was first cleaned before being uploaded into SmartPLS 3 software for analysis.

Analysis

Figure 3 shows the partial least square path model estimations for this study. The results of the path analysis model are as follows:

Reflective Measurement Scale

There are two types of measurement scales in SEM: formative and reflective. A reflective measurement scale was adopted in this study because the indicators were highly correlated and interchangeable (Haenlein & Kaplan, 2004; Petter et al., 2007; Hair et al., 2013). Therefore, the study thoroughly examined the reliability and validity of the indicators. Maune et al. (2021) argue that each reflective indicator is related to a specific latent variable or construct using a simple regression analysis.

During the evaluation of the measurement model, 17 items were removed because of low factor loadings (<0.600) and high cross-loading (Gefen & Straub, 2005). Cronbach's alpha and composite reliability (CR) tests were used to test the reliability of the constructs (Table 4). All the constructs in the study met the required CRs threshold (0.700) in accordance with Hair et al., (2017). The Cronbach's alpha was above the threshold of 0.700 for each construct. Convergent validity was acceptable since the AVE exceeded 0.500 (Bagozzi & Yi, 1988). Table 4 shows the reliability, validity and factor loadings output. The Fornell-Larcker criterion was used to assess discriminant validity, and the output is shown in Table 5. The results in Table 5 align with Fornell and Larcker (1981), showing a more significant square root of AVE than the inter-construct correlation for all the constructs. The Heterotrait-Monotrait ratio was also used to assess the discriminant validity of correlations (Henseler et al., 2015). The output shows all values below the 0.900 threshold, establishing discriminant validity (Table 6).

Table 4. Factor Loadings, VIF, Composite Reliability, Convergent Validity

Indicators	Loadings	VIF	Cronbach's Alpha	Composite Reliability	AVE
PE1	0.933	4.384	0.935	0.935	0.879
PE3	0.942	4.384			
EE1	1.000	1.000	1.000	1.000	1.000
SI1	0.894	2.596	0.879	0.879	0.784
SI2	0.877	2.596			
FC1	1.000	1.000	1.000	1.000	1.000
HM1	0.815	3.354	0.923	0.923	0.801
HM2	0.943	3.308			
HM3	0.920	3.763			
PV1	0.676	1.946	0.854	0.855	0.667
PV2	0.859	2.404			
PV3	0.898	2.122			
HT1	0.910	2.910	0.896	0.897	0.689
HT2	0.656	2.044			
HT3	0.841	2.566			
HT4	0.888	3.070			
PR1	0.588	1.741	0.794	0.799	0.580
PR3	0.943	1.872			
PR4	0.710	1.544			
TT3	0.956	1.673	0.776	0.802	0.677
TT5	0.663	1.673			
SN1	0.876	1.634	0.844	0.841	0.642
SN2	0.637	2.510			
SN3	0.867	2.668			
SE1	0.836	3.297	0.910	0.917	0.848
SE4	0.999	3.297			
BI1	0.924	3.576	0.918	0.918	0.849
BI3	0.919	3.576			
UB1	0.925	2.292	0.858	0.861	0.757
UB2	0.811	2.292			

Table 5. Fornell-Larcker Criterion

	BI	EE	FC	HM	HT	PE	PR	PV	SE	SI	SN	TT	UB
BI	0.921												
EE	0.832	1.000											
FC	0.788	0.811	1.000										
HM	0.859	0.829	0.772	0.895									
HT	0.897	0.781	0.741	0.889	0.830								
PE	0.872	0.847	0.837	0.898	0.862	0.937							
PR	-0.102	-0.043	-0.108	-0.107	-0.098	-0.068	0.761						
PV	0.699	0.718	0.649	0.731	0.835	0.781	-0.066	0.817					
SE	0.072	0.161	0.098	0.078	0.052	0.077	-0.230	0.146	0.921				
SI	0.847	0.810	0.803	0.858	0.887	0.871	0.102	0.714	0.012	0.886			
SN	0.020	0.120	0.071	0.061	-0.028	0.042	-0.417	0.051	0.691	-0.060	0.801		
TT	0.123	0.052	0.023	0.072	0.081	0.044	-0.387	0.013	0.154	0.041	0.444	0.823	
UB	0.869	0.715	0.716	0.796	0.846	0.833	-0.101	0.725	0.078	0.773	0.069	-0.029	0.870

Table 6. Heterotrait-Monotrait Ratio (HTMT)

	BI	EE	FC	HM	HT	PE	PR	PV	SE	SI	SN	TT	UB
BI	-												
EE	0.832												
FC	0.788	0.811											
HM	0.857	0.828	0.771										
HT	0.892	0.777	0.737	0.887									
PE	0.872	0.847	0.837	0.896	0.861								
PR	0.160	0.110	0.146	0.163	0.148	0.119							
PV	0.695	0.715	0.642	0.730	0.835	0.775	0.089						
SE	0.082	0.159	0.094	0.098	0.088	0.086	0.305	0.148					
SI	0.846	0.810	0.803	0.857	0.889	0.871	0.138	0.711	0.048				
SN	0.055	0.114	0.070	0.079	0.057	0.071	0.433	0.054	0.680	0.073			
TT	0.130	0.082	0.080	0.086	0.103	0.089	0.384	0.089	0.155	0.092	0.504		
UB	0.868	0.717	0.716	0.797	0.855	0.836	0.141	0.734	0.078	0.775	0.084	0.064	-

Structural Model

The path analysis model was evaluated once the reliability and validity of variables were established. The theoretical model below is evaluated to give empirical evidence of the path model using SmartPLS (Avkiran, 2018; Tenenhaus et al., 2005).

$$\xi_j = \beta_{jo} + \sum_i \beta_{ji} \xi_j + \nu_j$$

Where: ξ_j is the endogenous construct and ξ_i represents the exogenous constructs, while β_{jo} is the constant term in this (multiple) regression model, β_{ij} are the regression coefficients, and v_j is the error term; the predictor specification condition applies.

The PLS-SEM path analysis model output in Figure 2 shows the hypothesised results of the path analysis model in Figure 1. The path analysis model was evaluated using the significance of paths Q2 and R2. The strength of each structural path determined (R2 value for the dependent variable) the goodness fit of the model. Falk and Miller (1992) argue that the value for R2 should be equal to or over 0.1. The output in Table 7 shows all R2 values for the study, which were above 0.1. The study, therefore, established the predictive capability of the model. Wong (2013) argues that Q2 establishes the predictive relevance of endogenous variables. Therefore, the study established a Q2 above zero (0), denoting predictive relevance. The study output in Table 7 denotes the significance of the prediction by the constructs.

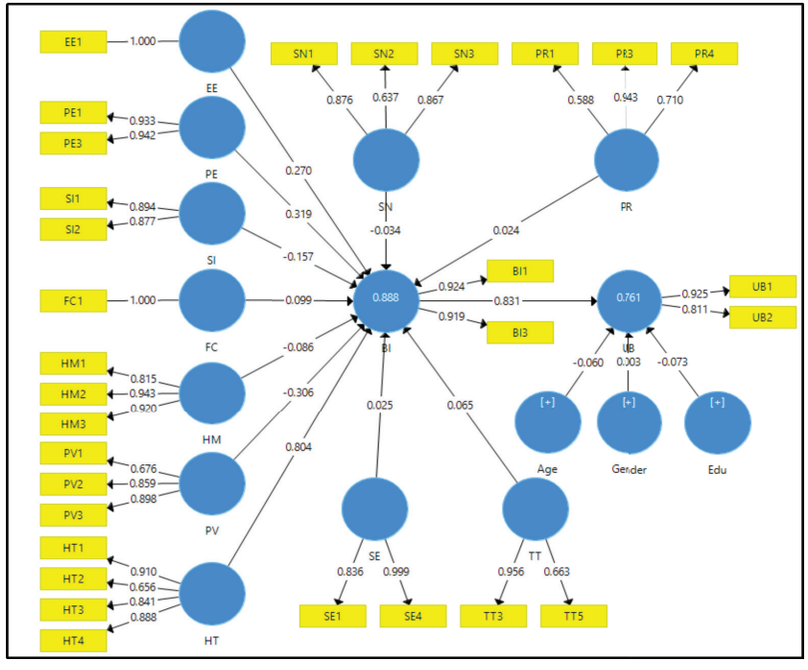
The collinearity of constructs was assessed by examining the outer VIF values of the model. Table 4 shows the output of VIF values for all exogenous and related endogenous variables groupings. The VIF output values were below the threshold of 5, denoting the non-existence of collinearity among indicators in the model. Hence, collinearity was not an issue in the model. Further examination of the output was carried out, and the results are shown in Table 7. The outputs verify the hypotheses and the significance testing for the path coefficients within the path analysis model.

Table 7. Path Coefficients, Confidence Intervals, R2, R2 Adjusted, and Q2

Hypothesis	Relationship	β	STDEV	T Statistics	P Values	2.50%	97.50%
H1	PE - > BI	0.319	0.172	1.074	0.283	-0.173	0.499
H2	EE - > BI	0.270	0.141	1.652	0.099	-0.025	0.528
H3	SI - > BI	-0.157	0.100	0.577	0.564	-0.116	0.288
H4	FC - > BI	0.099	0.094	1.005	0.315	-0.092	0.286
H5	HM - > BI	-0.086	0.114	0.537	0.592	-0.155	0.290
H6	PV - > BI	-0.306	0.070	1.299	0.194	-0.244	0.037
H7	HT - > BI	0.804	0.109	3.650	0.000	0.197	0.623
H8	SN - > BI	0.025	0.084	0.511	0.610	-0.064	0.278
H9	SE - > BI	-0.034	0.075	0.632	0.528	-0.253	0.066

H10	PR - > BI	0.024	0.071	0.647	0.517	-0.217	0.071
H11	TT - > BI	0.065	0.070	0.665	0.506	-0.111	0.175
H12	BI - > UB	0.831	0.074	9.604	0.000	0.546	0.838
		R2	R^2 Adjusted	Q2			
	BI	0.888	0.874	0.657			
	UB	0.761	0.751	0.515			

Figure 2: PLS-SEM Path Model Output



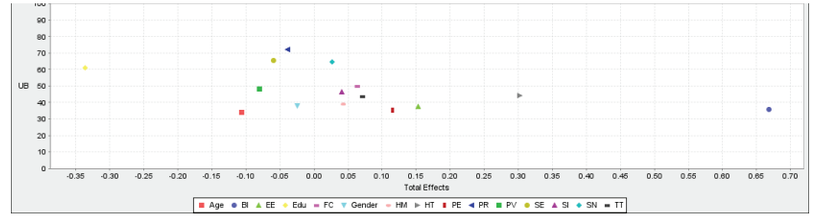
Goodness of fit: SRM, Saturated Model – 0.064, and estimated Model – 0.066.

Importance-Performance Map Analysis (IPMA)

IPMA was extracted to establish the importance and performance of model path variables. Performance shows the magnitude of each latent construct score, while importance shows the total effect on the targeted construct in the PLS-SEM path model. The output of the IPMA is critical in prioritising management action. As a matter of priority, management should focus more on addressing the performance of indicators that show immense

importance in explaining certain targeted constructs, nonetheless having low performance.

Figure 3: Importance-Performance Map Analysis



The study considered an indicator important when its total effect on "Use Behaviour" (UB) was high (Y-axis). Therefore, in this study, "Habit" (HT) (0.302) has greater absolute importance on UB outside BI (0.668) (Figure 3 and Table 8). Moreover, an indicator performs better when it has a higher score. This score reflects robust measurement of paths as shown by the X-axis. In this study, "Perceived Risk" (PR) (72.155) shows more excellent performance than any other indicators (Table 8 and Figure 3).

Discussion

This study examines eLearning adoption and use in higher Education in Zimbabwe. A PLS-SEM approach was used to analyse data collected through an online survey targeting students at two Zimbabwe universities. A modified UTAUT2 model (Figure 1) was examined. The study placed more emphasis on BI and UB's psychological reasoning. Behaviour intention and use of eLearning in higher education by students is considered planned behaviour. A path analysis framework modified from UTAUT2 in Figure 1 was examined using the PLS-SEM algorithm to establish significant model paths and associations. The output extracts are shown in Table 2 to Table 7.

Of importance, however, was the relationship between "Habit" and "Behaviour Intention" (HT -> BI), which is significant at a 95% confidence level with a p-value of < 0.05 (0.000) and a T-Statistic of 3.650. Another noteworthy relationship was BI -> UB, which was significant at a 95% confidence level with a p-value of <0.05 (0.000) and a T-Statistic of 9.604. The observation reveals that HT has the most noticeable influence (0.804) on BI, followed by PE (0.319), then EE (0.270) and FC (0.099). BI has a significant influence (0.831) on UB, accounting for 76.1% of the UD variance. All the latent variables account for 88.8% of the BI variance, as indicated by R2. The variances explained by previous researchers were higher than those of previous researchers (Strzelecki, 2023; Maican et al.,

2019; Hoi, 2020). The (HT -> BI) findings are consistent with previous studies (Strzelecki, 2023; Sitar-Taut & Mican, 2021; Alotumi, 2022; Jakkaew & Hemrungrote, 2017; Kumar & Bervell, 2019). However, some of the findings needed to be more consistent with other prior studies (Twum et al., 2022; Ain et al., 2016), which found no direct effect of HT on BI.

During the evaluation of the paths, 17 items (indicators) were omitted because of low-factor loadings or high-cross loadings, as supported by Gefen and Straub (2005). Data did not support these paths. Most of these omitted indicators were from EE and FC despite previous findings that showed their significant influence on the latent variables (Venkatesh et al., 2003; Venkatesh et al., 2012; Limayem et al., 2007). These findings were inconsistent with findings from other previous studies (Arain et al., 2019; Azizi et al., 2020; Nikolopoulou et al., 2020; Raman & Don, 2013; Raffaghelli et al., 2022; Mehta et al., 2019) who found a strong correlation between the variables.

All latent variables except HT were insignificant towards BI at a 95% confidence level, as shown by their p-values and t-statistics. This was so despite prior findings (Venkatesh et al., 2003; Groß, 2015; Shneor & Munimb, 2019; Venkatesh et al., 2012; Abrahão et al., 2016; Roy, 2017). The study results, however, confirm previous researchers` findings (Khurana & Jain, 2019; Barua et al., 2018; Chao, 2019; Liu & Tai, 2016; Tarhini et al., 2019; Gharaibeh et al., 2020). The following model paths were established: HT -> BI and BI -> UB with significant p-values and t-statistics.

Our findings showed that HM has an insignificant negative impact on BI. The finding is inconsistent with prior studies (Azizi et al., 2020; Hu et al., 2020; Faqih & Jaradat, 2021) while consistent with findings by Ain et al. (2016) and Raza et al. (2022). The findings on SI align with those by Alotumi (2022) and Kumar and Bervell (2019), who found the insignificant influence of SI on BI. PV has an insignificant negative influence on BI, consistent with prior findings (Strzelecki, 2023; Nikolopoulou et al., 2020; Osei et al., 2022). However, this was inconsistent with findings by Farooq et al. (2017) and Azizi et al. (2020). Furthermore, our findings regarding FC aligned with prior studies (Strzelecki, 2023; Alotumi, 2022; Kumar & Bervell, 2019; Dajani & Abu Hegleh, 2019). This was contrary to findings by Faqih & Jaradat (2021) and Yu et al. (2021).

The significance of paths Q2 and R2 were used to assess the path analysis model's goodness of fit, as denoted in Table 7. Predictive relevance was established for constructs in line with prior studies (Falk & Miller, 1992; Briones-Penalver et al., 2018).

The most important finding for students' eLearning adoption and use in higher education relates to the IPMA, which identifies significant focus areas. These are the areas of focus that generate targeted constructs within the PLS-SEM path analysis diagram. In this study, "Habit" (HT) (0.302) had the most significant absolute importance on UB outside BI (0.668) (Figure 3 and Table 8). The same was "Perceived Risk" (PR) (72.155), which showed the most outstanding performance of any other indicator in the study (Table 8 and Figure 3). Ceteris paribus, a unit rise in HT performance will result in a 0.302 rise in UB (Figure 3 and Table 8).

Table 8. Importance-Performance Analysis

Variable	Performance	Total effect
BI	35.763	0.668
EE	37.750	0.153
FC	49.750	0.064
HM	38.961	0.043
HT	44.244	0.302
PE	35.349	0.115
PR	72.155	-0.039
PV	48.170	-0.080
SE	65.341	-0.060
SI	46.613	0.041
SN	64.692	0.026
TT	43.345	0.071
UB	40.614	-

Conclusion and Implications

Conclusion

This study uses a PLS-SEM algorithm to analyse the data to examine eLearning adoption and use by students in Zimbabwe universities. A path model in Figure 1 was evaluated to establish significant relationships between indicators. This path model was a modification of the UTAUT2 that incorporated other latent variables selected from other theories of technology adoption and use (Maune, 2023). This study confirmed "Habit"'s significant influence on BI and eLearning use in Zimbabwe's higher education. The adoption and use of eLearning is still in its infancy

in Zimbabwe, with different universities at different levels of adoption and use. Therefore, there is a need for more research studies to be carried out in the field. This study can provide the basis or foundation for further future studies.

Implications for Research

This study uses a PLS-SEM algorithm to analyse the data to examine eLearning adoption and use by students in Zimbabwe universities. A path model in Figure 1 was evaluated to establish significant relationships between indicators. This path model was a modification of the UTAUT2 that incorporated other latent variables selected from other technology adoption and use theories. The application and replication of the path analysis model are critical for ODeL experts and other practitioners in higher education, given how technological developments are impacting higher education. The role of technology has become more critical than ever before, especially with the impact of AI. The findings of this study are critical to the development of higher education in developing countries, particularly Zimbabwe. The findings of this study will hopefully guide future research.

Although UTAUT2 is an essential theory in evaluating relationships between constructs in the use of technology, modifications and expansion of the theory have proved vital in different fields, with different results being realised. This is critical in research since there is no one solution to a given problem. Researchers should, therefore, forge ahead with what works since truth is a normative concept – the truth is what works.

The proposed path analysis model was evaluated empirically using PLS-SEM to establish critical relationships in eLearning adoption and use in higher education. This approach adopted a cognitive psychological human behaviour in decision making. The results of this study show an insignificant relationship among all the constructs except for HT and BI, which had significant paths, as shown by their p-values and t-statistics. Habit was identified as a critical determinant in adopting and using eLearning in higher education in Zimbabwe. This confirms the findings by Strzelecki (2023).

Overall, results showed that behavioural intention significantly influences use behaviour in eLearning use in universities in Zimbabwe. To further authenticate these findings, there is a need to analyse this data using different analytical software such as AMOS, R and Stata. A more significant sample might be considered in this endeavour. Further modifications may be required to this framework. This study was critical in addressing the

research gap exposed by prior research (Maune, 2023). The study (Maune, 2023) reviewed relevant literature in developing the extended path model that was evaluated by this study. This study provides the starting point for further future research in the field. Critical dimensions have been identified that will help in future research. The path model was informed by literature (Maune, 2023).

Furthermore, by expanding the path model, we hypothesised that social influence, habit, performance expectancy, facilitating conditions, effort expectancy, subjective norm, self-efficacy, hedonic motivation, price value, trust, and perceived risk were critical determinants in adopting and using online learning applications by university students in Zimbabwe. However, data needed to support more indicators for facilitating conditions and effort expectancy; hence, they were omitted in the final model. However, the results in this study align well with those from prior studies (Khurana & Jain, 2019; Shneor & Munimb, 2019; Chao, 2019; Tarhini et al., 2019; Gharaibeh et al., 2020).

Implications for Practice

Technology has proven a key factor in higher education, especially during and after the COVID-19 pandemic. Globally, technology has become prevalent in higher education, especially AI-related applications such as ChatGPT. Gill et al. (2024) argue that "AI applications are becoming crucial for colleges and universities, whether personalised learning, computerised assessment, smart educational systems, or supporting teaching staff. They offer support that results in reduced expenses and enhanced learning results." However, although the use of technology in higher education has become popular, it comes with its risks and difficulties. To this end, Gill et al. (2024) state that "there are concerns regarding the potential misuse of [technology], as it could be employed to generate academic tests and assignments for students and provide tailored responses to coursework questions and assessments. As a result, several institutions have forbidden students from using [certain technologies], including a ban within an entire country."

The path analysis model explained and predicted various relationships, as shown in the Figures and Tables above. This has practical implications in recommending factors driving 'Behavioural Intention' and 'Use Behaviour' in the use of online learning applications by university students. The path analysis model has essential inferences that are critical for higher education. The most essential discovery was that Habit (HT) plays a critical role in eLearning adoption and use in universities in Zimbabwe.

Furthermore, the IPMA has also proven to be critical in decision-making. In this case, "Habit" (HT) (0.302) had the most significant absolute importance on UB outside BI (0.668) (Figure 3 and Table 8). The same was "Perceived Risk" (PR) (72.155), which showed the most outstanding performance of any other indicator in the study (Table 8 and Figure 3). IPMA clearly shows critical areas for managerial focus and prioritisation. For example, management should focus on higher-importance and low-performance constructs. These constructs have higher chances for improvement. This is critical for management since it is illogical to focus on constructs of low importance, as this will have no impact on improving the targeted construct.

References

Abrahão, R. S., Moriguchi, S. N., & Andrade, D. F. (2016). Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology (UTAUT). *RAI Revista de Administração e Inovação*, 13, 221–230.

Ahmad, S., Mohd Noor, A. S., Alwan, A. A., Gulzar, Y., Khan, W. Z., & Reegu, F. A. (2023). E-learning acceptance and adoption challenges in higher education. *Sustainability, 6*, 1-16. https://doi. org/10.3390/su15076190

Ain, N., Kaur, K., & Waheed, M. (2016). The influence of learning value on learning management system use. *Information Development, 32*(5), 1306–1321. https://doi.org/10.1177/0266666915597546

Ajzen, I. (1991). The theory of planned behaviour. *Organisational Behavior and Human Decision Process, 50*(2), 179–211. https://doi.org/10.1080/08870446.2011.613995

Akbari, M., Danesh, M., Rezvani, A., Javadi, N., Banihashem, S. K., & Noroozi, O. (2022). The role of students' relational identity and autotelic experience for their innovative and continuous use of e-learning. *Education and Information Technologies*, 28, 1911 – 1934. https://doi.org/10.1007/s10639-022-11272-5

Alotumi, M. (2022). Factors influencing graduate students' behavioural intention to use Google Classroom: Case study-mixed methods research. *Education and Information Technologies, 27*(7), 10035–10063. https://doi.org/10.1007/s10639-022-11051-2

Arain, A. A., Hussain, Z., Rizvi, W. H., & Vighio, M. S. (2019). Extending UTAUT2 toward acceptance of mobile learning in the context of higher education. *Universal Access in the Information Society, 18*(3), 659–673. https://doi.org/10.1007/s10209-019-00685-8

Avkiran, N. K. (2018). Rise of the Partial Least Squares Structural Equation Modeling: An application in banking. In N. K. Avkiran and C. M. Ringle (Eds.), Partial Least Squares Structural Equation Modeling,

International Series in Operations Research & Management Science (pp. 1-29). https://doi.org/10.1007/978-3-319-71691-6_1

Azizi, S. M., Roozbahani, N., & Khatony, A. (2020). Factors affecting the acceptance of blended learning in medical education: Application of UTAUT2 model. *BMC Medical Education, 20*(1), 1-9. https://doi.org/10.1186/s12909-020-02302-2.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74–94.

Barua, Z., Alam, M. Z., & Hu, W. (2018). Using the UTAUT model to determine factors affecting acceptance and use of Mobile Health (mHealth) services in Bangladesh. *Journal of Studies in Social Sciences, 17*(2), 137-172.

Bashir, S., & Lapshun, A. L. (2025). E-learning future trends in highereducation in the 2020s and beyond. *Cogent Education, 12*(1), 1-15. DOI: 10.1080/2331186X.2024.2445331

Beck, T., Demirgüç-Kunt, A., & Honohan, P. (2009). Access to financial services: Measurement, impact, and policies. T*he World Bank Research Observer, 24*(1), 119-145.

Briones-Penalver, A. J., Bernal-Conesa, J. A., & Nieves-Nieto, C. (2018). Analysis of corporate social responsibility in Spanish agribusiness and its influence on innovation and performance. *Corporate Social Responsibility and Environmental Management, 25*(2), 182-193.

Chao, C.-M. (2019). Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model. *Frontiers in Psychology,* 10, 1-14. https://doi.org/10.3389/fpsyg.2019.01652

Cojocariu, V.-M., Lazar, I. Nedeff, V., & Lazar, G. (2014). SWOT analysis of e-learning educational services from the perspective of their beneficiaries. *Procedia - Social Behavioral Sciences,* 116, 1999–2003. https://doi:10.1016/j.sbspro.2014.01.510

Cotton, D. R. E., & Cotton, J. R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International, 61*(2), 228-239. https://doi.org/10.1080/14703297.2023.2190148

Cukurova, M., Miao, X., & Brooker, R. (2023). Adoption of artificial intelligence in schools: Unveiling factors influencing teachers' engagement. In N. Wang, G. Rebolledo-Mendez, N. Matsuda, O. C. Santos, V. Dimitrova (Eds.), *Artificial Intelligence in Education* (pp. 151–163). https://doi.org/10.1007/ 978-3- 031- 36272-9_13

Dajani, D., & Abu Hegleh, A. S. (2019). Behaviour intention of animation usage among university students, Heliyon. 5(10), 1-10. https://doi.org/10.1016/j.heliyon.2019.e02536

Ellis, K., Lemma, A., & Rud, J.-P. (2010). *Investigating the impact of access to*

financial services on household investment. Overseas Development Institute.

Falk, R. F., & Miller, N. B. (1992). A primer for soft modelling. Universityof Akron Press.

Faqih, K. M. S., & Jaradat, M.-I. R. M. (2021). Integrating TTF and UTAUT2 theories to investigate the adoption of augmented reality technology in education: Perspective from a developing country. *Technology in Society, 67*(2): 101787. https://doi.org/10.1016/j.techsoc.2021.101787

Farooq, M. S., Salam, M., Jaafar, N., Fayolle, A., Ayupp, K., Radovic-Markovic, M., & Sajid, A. (2017). Acceptance and use of lecture capture system (LCS) in executive business studies. *Interactive Technology and Smart Education, 14*(4), 329–348. https://doi.org/10.1108/ITSE-06-2016-0015

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention and behavior: an introduction to theory and research*. Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. J*ournal of Marketing Research, 18*(1), 39-50.

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems, 16*(1), 91-109.

Gharaibeh, N., Gharaibeh, M. K., Gharaibeh, O., & Bdour, W. (2020). Exploring intention to adopt mobile commerce: Integrating UTAUT2 with social media. *International Journal of Scientific and Technology Research, 9*(3), 3826-3833.

Gill, S. S., Xu, M., Patros, P., Wu, H., Kaur, R., Kaur, K., Fuller, S., Singh, M., Arora, P., Parlikad, A. K., Stankovski, V., Abraham, A., Ghosh, S. K., Lutfiyya, H., Kanhere, S. S., Bahsoon, R., Rana, O., Dustdar, S., Sakellariou, R., ... Buyya, R. (2024). Transformative effects of ChatGPT on modern education: Emerging Era of AI Chatbots. *Internet of Things and Cyber-Physical Systems*, 4, 19–23. https://doi.org/10.1016/j.iotcps.2023.06.002

Groß, M. (2015). Exploring the acceptance of technology for mobile shopping: An empirical investigation among smartphone users. *The International Review of Retail, Distribution and Consumer Research, 25*(3), 215–235.

Haenlein, M., & Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding Statistics, 3*(4), 283–297.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2013). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd Ed.). Sage.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science, 43* (1), 115–135.

Hoi, V. N. (2020). Understanding higher education learners' acceptance and use of mobile devices for language learning: A Rasch-based path modelling approach. *Computers & Education, 146*(1):103761. https://doi.org/10.1016/j.compedu.2019.103761.

Hoyle, R. H. (ed.). (1995). *Structural equation modeling*. SAGE Publications.

Hu, S., Laxman, K., & Lee, K. (2020). Exploring factors affecting academics' adoption of emerging mobile technologies: An extended UTAUT perspective. *Education and Information Technologies, 25*(5), 4615–4635. https://doi.org/10.1007/s10639-020-10171-x

Jakkaew, P., & Hemrungrote, S. (2017). The use of UTAUT2 model for understanding student perceptions using Google Classroom: A case study of introduction to information technology course. I*nternational Conference on Digital Arts, Media and Technology* (pp. 205–209). https://doi.org/10.1109/ICDAMT.2017.79049 62

Kempson, E., & Whyley, C. (1999). *Kept out or opted out: Understanding and combating financial inclusion*. Policy Press.

Khurana, S., & Jain, D. (2019). Applying and extending UTAUT2 model of adoption of new technology in the context of M-Shopping fashion apps. *International Journal of Innovative Technology and Exploring Engineering, 8*(9S), 752-759. https://doi.org/10.35940/ ijitee. I1122.0789S19

Kumar, J. A., & Bervell, B. (2019). Google Classroom for mobile learning in higher education: Modelling the initial perceptions of students. *Education and Information Technologies, 24*(2), 1793–1817. https://doi.org/10.1007/s10639-018-09858-z

Limayem, M., Hirt, S. G., & Cheung, C. M. K. (2007). How habit limits the predictive power of intention: The case of information systems continuance. *MIS Quarterly, 31*(4), 705–737.

Liu, G. -S., & Tai, P. T. (2016). A study of factors affecting the intention to use mobile payment services in Vietnam. *Economics World, 4*(6), 249-273. https://doi.org/10.17265/2328-7144/2016.06.001

Maican, C. I., Cazan, A. -M., Lixandroiu, R. C., & Dovleac, L. (2019). A study on academic staff personality and technology acceptance: The case of communication and collaboration applications. *Computers & Education, 128*(1), 113–131. https://doi.org/10.1016/j.compedu.2018.09.010.

Marcoulides, G. A., & Saunders, C. (2006). Editor's comments – PLS: A

silver bullet? *MIS Quarterly, 30*(2), iii-ix.
Maune, A. (2016). Human capital intelligence and economic development. *Journal of Problems and Perspectives Management, 14*(3), 120–130.
Maune, A. (2021). Intention to use mobile applications in competitive intelligence: An extended conceptual framework. *Journal of Intelligence Studies in Business, 11*(2), 6–29.
Maune, A. (2023). Adoption and use of eLearning platforms by universities in developing countries: Evidence from Zimbabwe. *Cogent Education, 10*(2), 1–13. https://doi.org/10.1080/233118 6X.2023.2287905
Maune, A., Matanda, E., & Mundonde, J. (2021). Financial inclusion as an intentional behaviour in Zimbabwe. *Acta Universitatis Danubius OEconomica, 17*(4), 177-211.
Mehta, A., Morris, N. P., Swinnerton, B., & Homer, M. (2019). The influence of values on e-learning adoption. *Computers & Education, 141*, 1-16. https://doi.org/10.1016/j.compedu.2019.103617
Nikolopoulou, K., Gialamas, V., & Lavidas, K. (2020). Acceptance of mobile phone by university students for their studies: An investigation applying UTAUT2 model. *Education and Information Technologies, 25*(5), 4139–4155. https://doi.org/10.1007/s10639-020-10157-9
Osei, H. V., Kwateng, K. O., & Boateng, K. A. (2022). Integration of personality trait, motivation and UTAUT 2 to understand e-learning adoption in the era of the COVID-19 pandemic. *Education and Information Technologies, 27*(8), 10705–10730. https://doi.org/10.1007/s10639-022-11047-y
Petter, S., Straub, D., & Rai, A. (2007). Specifying formative constructs in information systems research. *MIS Quarterly, 31*(4), 623-656.
Qazi, W., Raza, S. A., Khan, K. A., & Salam, J. (2020). Adoption of e-learning system in higher education environments: Evidence from modified UTAUT model. ASR: CMU Journal of Social *Sciences and Humanities, 7*(1), 1-19. https://doi.org/10.12982/CMUJASR.2020.003
Raffaghelli, J. E., Rodriguez, M. E., Guerrero-Roldan, A. -E., & Baneres, D. (2022). Applying the UTAUT model to explain the students' acceptance of an early warning system in higher education. *Computers & Education, 182*(5), 1-14. https://doi.org/10.1016/j.compedu.2022.104468
Raman, A., & Don, Y. (2013). Preservice teachers' acceptance of learning management software: An application of the UTAUT2 model. *International Education Studies, 6*(7), 157–164. https://doi.org/10.5539/ies.v6n7p157
Raza, S. A., Qazi, Z., Qazi, W., & Ahmed, M. (2022). E-learning in higher education during COVID-19: Evidence from blackboard learning system. *Journal of Applied Research in Higher Education, 14*(4),

1603–1622. https://doi.org/10.1108/JARHE-02-2021-0054
Roy, S. (2017). App adoption and switching behavior: Applying the extended tam in smartphone app usage. *Journal of Information Systems and Technology Management, 14*(2), 239–261. https://doi. org/10.4301/S1807-17752017000200006
Shams, M. S., Niazi, M. M., Gul, H., Mei, T. S., & Khan, K. U. (2022). E-learning adoption in higher education institutions during the COVID-19 pandemic: A multigroup analysis. *Front. Educ.*, 6, 1-16. https://doi:10.3389/feduc.2021.783087
Sherif, J. P. M. N., & Amudha, R. (2025). Effectiveness of e-learning among higher education students: A literature review. *International Journal of Research in Management, 7*(1), 129-135. https://doi.org/10.33545/26648792.2025.v7.i1b.274
Shneor, R., & Munimb, Z. H. (2019). Reward crowdfunding contribution as planned behaviour: An extended framework. *Journal of Business Research, 103*, 56–70.
Sitar-Taut, D. A., & Mican, D. (2021). Mobile learning acceptance and use in higher education during social distancing circumstances: An expansion and customisation of UTAUT2. *Online Information Review, 45*(5), 1000–1019. https://doi.org/10.1108/OIR-01-2021-0017
Strzelecki, A. (2023). Students' acceptance of ChatGPT in higher education: An extended unified theory of acceptance and use of technology. *Innovative Higher Education, 49*(2), 1-23. https://doi.org/10.1007/s10755-023-09686-1
Tarhini, A., Alalwan, A. A., Shammout, A. B., & Al-Badi, A. (2019). An analysis of the factors affecting mobile commerce adoption in developing countries: Towards an integrated model. *Review of International Business and Strategy, 29*(3), 157-179.
Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational Statistics and Data Analysis. 48*(1), 159–205.
Tlili, A., Shehata, B., Adarkwah, M. A., Bozkurt, A., Hickey, D. T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments, 10*(1), 15. https://doi.org/10.1186/ s40561-023-00237-x
Twum, K. K., Ofori, D., Keney, G., & Korang-Yeboah, B. (2022). Using the UTAUT, personal innovativeness and perceived financial cost to examine student's intention to use E-learning. *Journal of Science and Technology Policy Management, 13*(3), 713–737. https://doi.org/10.1108/JSTPM-12-2020-0168
Venkatesh, V., Thong, J., & Xu, X. (2012). Consumer acceptance and

use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157-178.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Wang, M., Ran, W., Liao, J., & Yang, S. J. H. (2010). A performance-oriented approach to E-Learning in the workplace. *Educational Technology & Society, 13*(4), 167–179. https://www.jstor.org/stable/jeductechsoci.13.4.167

Weizenbaum, J. (1966). ELIZA—a computer program for the study of natural language communication between man and machine. *Communications of the ACM, 9*(1), 36–45. https:// doi.org/10.1145/365153.365168

Williamson, B., Macgilchrist, F., & Potter, J. (2023). Re-examining AI, automation and datafication in Education. *Learning, Media and Technology, 48*(1), 1–5. https://doi.org/10. 1080/17439884.2023.2167830

Wong, K. K.-K. (2013). Partial Least Squares Structural Equation Modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin, 24*(1), 1–33. http://marketing-bulletin.massey.ac.nz

Yu, C.-W., Chao, C.-M., Chang, C.-F., Chen, R.-J., Chen, P.-C., & Liu, Y.-X. (2021). Exploring behavioral intention to use a mobile health education website: An extension of the UTAUT 2 model. SAGE Open, 11(4), 1–12. https://doi.org/10.1177/21582440211055721

Implementing Data-Driven Decision-Making to Improve the Quality of Education in Ethiopian Higher Learning Institutions

Zelalem Asfaw, Daniel Alemneh, Bekalu Ferede, Abu Santure, and Worku Jimma

Abstract

This paper investigates the barriers and facilitators to the adoption of data-driven decision-making (DDDM) in higher education institutions (HEIs) in Ethiopia. The study employed a three-round modified Delphi method involving a panel of experts comprising of faculty members and specialists in Information and Communication Technology (ICT). A total of 57 experts participated, and 39 barriers and 20 facilitators were identified. The top three barriers included the lack of a data-driven decision-making policy, organisational culture, and a data management policy. The availability of network infrastructure was identified as the most important facilitator. The results of the study indicate that organisational barriers are important factors in the effective implementation of data-driven decision-making to improve the quality of education in Ethiopian higher education institutions. The findings emphasise the significance of policy in overcoming obstacles and promoting a culture of data-driven decision-making in Ethiopian higher education institutions. Improved policy and effective implementation of practices can address the identified barriers.

ABOUT THE AUTHORS: ZELALEM ASFAW, email: zelalemasfaw428@gmail.com, BEKALU FEREDE, email: feredebekalu@gmail.com, ABU SANTURE, email: Abu.boru@ju.edu.et, and WORKU JIMMA, email: worku.jimma@ju.edu.et, Jimma University, Ethiopia; DANIEL ALEMNEH, email: Daniel.Alemneh@unt.edu, University of North Texas, USA

Acknowledgement: The authors gratefully acknowledge the financial support of Jimma University for conducting this study. They would also like to express their appreciation of the research participants for providing the necessary information for the study.

Asfaw, Z., Alemneh, D., Ferede, B., Santure, A., & Jimma, W. (2025). Implementing Data-Driven Decision-Making to Improve the Quality of Education in Ethiopian Higher Learning Institutions. *International Journal of African Higher Education, 11*(3), 49-79. https://doi.org/10.6017/ijahe.v11i3.17669

Key words: data-driven decision-making, barriers, facilitators, education quality, Ethiopia

Résumé: Cet article étudie les obstacles et les facteurs facilitant l'adoption de la prise de décision fondée sur les données DDDM dans les établissements d'enseignement supérieur (EES) en Éthiopie. L'étude a utilisé une méthode Delphi modifiée à trois tours, impliquant un panel d'experts composé de membres du corps enseignant et de spécialistes des technologies de l'information et de la communication (TIC). Au total, 57 experts ont participé à l'étude, et ont permis d'identifier 39 obstacles et 20 facteurs de facilitation. Les trois principaux obstacles sont l'absence de politique de prise de décision fondée sur les données, de culture organisationnelle et de politique de gestion des données. La disponibilité d'une infrastructure de réseau a été identifiée comme le facilitateur le plus important. Les résultats de l'étude indiquent que les barrières organisationnelles sont des facteurs importants dans la mise en œuvre efficace de décisions basées sur les données et visant l'amelioration de la qualité de l'éducation dans les établissements d'enseignement supérieur éthiopiens. Les résultats soulignent l'importance de la politique pour surmonter les obstacles et promouvoir une culture de prise de décision fondée sur les données dans les établissements d'enseignement supérieur éthiopiens. Une politique améliorée et une mise en œuvre efficace des pratiques peuvent permettre de lever les obstacles identifiés.

Mots clés: prise de décision fondée sur les données, obstacles, facilitateurs, qualité de l'éducation, Éthiopie

Introduction

Ensuring high-quality education is a critical concern, especially given the growing demand for proficient individuals in light of technological advancements and economic growth (Baitanayeva et al., 2020). According to Saidy (2020), ensuring the quality of higher education poses a critical challenge to the world at large, but even more so for Africa. Previous studies by Sultana et al. (2009) indicate that the key factors influencing the quality of higher education are the calibre of faculty, curriculum standards, technological resources, research atmosphere, accreditation procedures, administrative guidelines, funding, assessment, and effective governance.

Saidy's (2020) research indicates African higher education quality is influenced by institutional factors such as governmental control and the institutional set-up of higher education systems, limited resources and capacity building, limited research and limited publication, cultural and

contextual relevance, and faculty qualification, as well as individual factors such as faculty orientation towards student-centred approaches to learning, leadership, and good governance.

More specifically, Shabani et al. (2014) highlighted a decrease in per-unit expenses, a notable rise in student enrolments, substandard academic quality of admitted students, deficient academic and research facilities such as libraries and laboratories, insufficient training of teaching staff, inadequate governance, limited effectiveness of quality assurance systems, the lack of quality assurance bodies to establish and enforce quality standards, and the absence of mechanisms to uphold quality factors as key contributors to the deterioration of higher education standards in Africa. Similarly, the quality of higher education in Ethiopia is impacted by both internal and external factors that contribute to a decline in educational standards. Among them are lack of a positive learning environment, insufficient library facilities and low student attendance, student misbehaviour, and political interference (Ibido, 2020). According to Oliso (2023), the quality of higher education is impacted by the insufficient supply of educational resources like ICT, libraries, laboratories, and a shortage of experienced educators.

According to UNESCO (2023), education in developed countries is of higher quality and is aided by modern technologies. In developing nations, the standard of education is low and is impacted by different factors such as the socioeconomic circumstances of students and institutional elements (Fomba et al., 2022). In order to improve education quality in developing countries, there is a need for better quality teaching, and teaching tools are crucial (Heyneman, 1983). Additionally, Gray Group International (GGI) Insights (2024) proposed several tactics to enhance the quality of education. These include investing in teacher training and development, encouraging innovation and the integration of technology in classrooms, and boosting student engagement and motivation. In a more elaborated way, GGI Insights (2024, "Strategies") identified nine strategies for improving education quality. These are: "providing training to teachers and professional development; providing access to high-quality teaching materials and resources; creating a positive and inclusive learning environment; personalizing learning experiences to meet individual student needs; implementing technology in the classroom to enhance learning; encouraging parental involvement and engagement; incorporating project-based learning and hands-on activities; developing strong assessment and evaluation processes; and prioritizing mental health and well-being in education."

Among the many reasons identified for decline in education quality, failure to incorporate evidence-based decision-making, which ensures strong fundamentals, also has a detrimental impact on the quality of education (Bustillo & Patrinos, 2023). In order to enhance educational quality, the implementation of data-driven decision-making systems (data use) has been proposed (Schildkamp, 2019). To obtain advantages like personalised learning, effective management, resource allocation, and, in general, student and institutional improvement, the execution of DDDM, which is an advanced technology for the education system, is essential. In the realm of higher education institutions (HEIs), the utilisation of data-driven decision-making processes facilitated by data analytics tools has been shown to be instrumental in various aspects. These include the identification of students at risk of dropping out, as well as the reduction of dropout rates (Mukred et al., 2020). Furthermore, such tools have been employed to enhance feedback mechanisms (Star & Collette, 2010), pinpoint effective teaching methods (Sclater et al., 2016), monitor student engagement levels, and forecast student success (Sclater et al., 2016; Robinson et al., 2016). Additionally, the application of data analytics in HEIs has been linked to improvements in student success rates and graduation rates (West et al., 2018), as well as in the enhancement of HEI evaluation outcomes (Sclater, 2014). Moreover, by establishing realistic objectives to address inefficiencies and combat declining student enrolment figures, HEIs can strategically navigate challenges (Unifyed, 2016), ultimately leading to more informed decision-making processes, improved institutional performance, and heightened student accomplishments (Gaftandzhieva et al., 2023). Data-driven decision making (DDDM) involves the systematic gathering and scrutiny of various types of data by educators, school leaders, and administrators, encompassing input, process, outcome, and satisfaction data (Marsh et al., 2006). This information is utilized to inform a variety of decisions aimed at enhancing student and institutional success (Marsh et al., 2006). Scholars comprehensively describe DDDM as 'data use' (Schildkamp, 2019). In the DDDM educational system, various stakeholders, including teachers, institutional leaders, administrators, students, parents, and government entities, will play a crucial role in collecting, processing, and utilising the results of data analysis.

The use of DDDM in education has become increasingly popular for improving the quality, accessibility, and inequalities in the field. American Universities like Arizona State University and Concordia University Wisconsin, have successfully utilized analytics to enhance students' academic experience and achieve higher graduation rates. For instance, Tacoma in the USA implemented predictive analytics and saw a 27.6% increase in the high school graduation rate (New, 2016). In addition,

Arizona State University is also utilising analytics to enhance students' academic experience and has achieved a 20% increase in graduation rates. Concordia University Wisconsin (CUW) has also effectively implemented an analytics program to identify at-risk students, resulting in an 82% student retention rate, a 10% increase within one year (Attaran et al., 2018). Similarly, universities in Europe and South Africa have also embraced DDDM and witnessed positive outcomes in education quality (Lemmens & Henn, 2017) and Europe (Nouri et al., 2019). Studies indicate DDDM is used not only to enhance education quality but also to resolve education accessibility and equity issues in the education sector.

Despite the role of DDDM in improving educational practices, its implementation faces several challenges and barriers. These include issues like data literacy in education, in which educators need to have the expertise and ability to convert data into usable information that can be applied in the classroom (Terrill, 2018), inadequate tools, a lack of collaboration, insufficient leadership support and commitment, organisational culture (Bolhuis et al., 2016; Schildkamp et al., 2016), and associated costs and a lack of skilled human capacity around the issue of DDDM (Chui, 2016). The study by Schildkamp et al. (2016, p. 244) grouped factors promoting and hindering DDDM in educational institutions as: "organizational characteristics (i.e., vision and norms, leadership, support, and collaboration), data characteristics (i.e., accessibility of timely data, usability and quality of the data), and user characteristics (i.e., knowledge and skills, and dispositions to use data)". The implementation of data-driven decision making with the support of data analytics tools in HEIs faces various technological obstacles, including those related to privacy, as well as the ethical and conscientious utilisation of data (Webber & Zheng, 2019a). The effective establishment of a culture centred on data-driven decision-making within HEIs necessitates the presence of skilled personnel, technologies facilitating data integration, systems for data management, as well as tools for reporting, analysis, and data visualisation (Webber & Zheng, 2019b).

Overall, Webber and Zheng (2019a) suggest that in order to effectively utilise data analytics for DDDM, it is crucial to focus on developing the necessary components of people, processes, technology, and culture. Otherwise, insufficient or ineffective development of the above four technology development components negatively influence the implementation of DDDM in HEIs.

In Ethiopia, the government has prioritised the advancement of information and communication technology (ICT) and has made a significant investment in this area (Alemu, 2017). Furthermore, there is a programme promoting

digital innovation in Ethiopia (MinT, 2022). Nevertheless, the Ethiopian higher education system is facing continuous quality challenges (Tareke et al., 2024). Moreover, the ICT infrastructure that is expected to support the process of improving education quality is underutilised (Ergado, 2019; Yallew, 2020; Alemu, 2017 Waweru and Abate, 2013; Ferede et al., 2022). Studies indicate that faculty members in Ethiopian universities analyse student-related data manually than using the latest data analytics technologies (Akal et al., 2019). This shows that the significant volume of data produced on a daily basis in Ethiopian higher education institutions is not effectively utilised with modern data technologies to enhance the quality of education. The research conducted by Assefa (2019) revealed that software products are underutilised in Ethiopian universities, with many departments lacking the necessary software support to carry out tasks and offer standardised services. With the high rate of enrolment (Yallew, 2020), shortage of skilled academic staff, high work load on educators, insufficient support of students, and the presence of millions of invested underutilised ICT resources, it is reasonable to adopt DDDM in HEIs in Ethiopia to resolve some of the educational problems.

Research shows that schools that consistently and effectively utilise data have observed a significant improvement in student performance (Terrill, 2018). According to Denny (2020), data is utilized in decision-making processes such as aligning instruction with standards, setting objectives, monitoring progress, identifying underperforming students, and planning instruction. Additionally, Hughes (2016) cited in Denny (2020) highlighted the significance of data in shaping policies and educational resources. The systematic gathering and utilisation of data can help education leaders identify service gaps, address inequalities, and assess the effects of various interventions on learning outcomes (UNESCO IIEP, 2020). Given the broad impact of data-driven decision-making in education, it is crucial that it is carried out accurately and consistently (Denny, 2020). The current study by Gaftandzhieva et al., (2023) emphasised the importance of using DDDM tools to improve academic performance and support sustainable development. Furthermore, the utilisation of decision-making systems in higher education helps to minimise the resources required to identify issues, challenges, or barriers within higher education systems and arrive at optimal decisions (Fakeeh, 2015; Acevedo et al., 2018).

This study's focus is on DDDM to improve higher education quality. Specifically, the type of decision expected pertains to teaching and learning activities. The scope of decisions extends from individual students to faculty level. This means that decisions will be about individual student success and failure, decisions about the classroom, decisions about the department, and decisions about faculty will be done in terms of student success and failure. Thus, with the help of intelligent data analytics systems, respective stakeholders take necessary measurements to address risks about students, classrooms, departments, and faculty before it happens. This helps to provide effective support for those who need it. In addition, DDDM helps in forecasting student, departmental, and faculty success and failure. In this process, the progress of students and faculty staff will be evaluated, and resources will be allocated to increase educational quality. This proactive approach not only enhances the learning environment but also fosters a culture of continuous improvement within the institution. By leveraging data-driven insights, educational leaders can make informed decisions that ultimately lead to better educational outcomes for all stakeholders involved.

In this context, an authorised person will collect and use information on students' background, family, student achievement, attendance, demographics, behaviour, student feedback, student attitude, motivations, and additional information needed to support student accomplishment in order to make decisions. Similarly, data on instructors, department heads, department coordinators, faculty deans, and other supportive work process will be collected and analysed in order to increase student achievement.

According to Shacklock (2016), HEIs collect both static and fluid data. Static data is data that institutions gather, record, and store, and it typically includes student records, staff data, financial data, alumni data, admissions and application data, course data, facility data, and other additional data. Fluid data is generated by the increasingly digital method by which students interact with their university, such as swipe card data from access-controlled campus buildings, log-ins to the virtual learning environment (VLE), and E-books and online journal downloads. More specifically, website usage, emails, and social network usage data are collected to make decisions in HEIs. Static data has long been a valuable resource for institutions and governments, guiding operational and business decisions as well as providing insights into sector performance for both the government and the public, a situation that applies to Ethiopia as well. Fluid data, when effectively collected, linked, and analysed, can offer a real-time and precise assessment of a student's performance. In Ethiopia, higher education institutions gather static data as discussed above. However, data on student behaviour, attitudes, and feedback are not systematically collected, stored, or utilised to enhance student success. Most data related to registration and assessments are managed by the registrar, with limited access for instructors and students. Many higher education institutions in Ethiopia rely on various in-house developed and customised open-source software

and disconnected systems, yet their decision-making processes lack support from advanced data analytics systems. As noted in this study, faculty members at Ethiopian universities often analyse student data manually rather than employing modern data analytics technologies. For instance, the registrar uses static assessment data to determine whether students pass or fail to advance to the next academic level or graduate. In contrast, one participating university in our research utilised data analytics software in its library system to evaluate research publication output and provide insights for academic rank promotion decisions; however, this software was outdated and non-functional during our data collection. According to Akal et al. (2019), higher education staff frequently engage in the manual analysis of student performance data or utilize Microsoft Excel as a tool for decision-making purposes. True DDDM, however, goes beyond this; it involves integrating and analysing both static and fluid data to gain a comprehensive understanding of student performance, ultimately leading to improved outcomes for both students and institutions. Furthermore, educators around the globe commonly use student data as a crucial tool to enhance student learning and academic achievement (Kaspi & Venkatraman, 2023). Thus, in this context, DDDM is necessary for improving the standard of education in Ethiopian higher education.

While a wealth of research exists regarding barriers and facilitators in implementing DDDM in higher education in the developed countries, there remains a lack of comprehensive studies regarding barriers and facilitators for the implementation of DDDM in HEIs in resource constrained developing countries, including Ethiopia.

The adoption of DDDM in higher learning institutions in Ethiopia in the future may encounter various obstacles. Therefore, this research seeks to identify the potential barriers and facilitators of implementing DDDM methods in higher learning institutions in Ethiopia in the future. Gaining insight into potential barriers and facilitators will speed up the execution of data-driven decision-making (DDDM) in Ethiopia and provide guidance for its implementation in similar contexts in other developing countries. Consequently, this is anticipated to result in enhanced educational quality.

Methods

Study Design

This research employs the modified Delphi method to determine the barriers and facilitators for implementing data-driven decision making (DDDM) in higher education institutions (HEIs) in Ethiopia, as perceived by experts in Ethiopian HEIs. The Delphi method is frequently employed to combine the knowledge of experts in situations where existing information

is lacking or uncertain, and when other methods with stronger evidence cannot be applied (Niederberger & Spranger, 2020). In this study, the Delphi method was chosen because barriers and facilitators for implementing DDDM in Ethiopian HEIs cannot be easily investigated using conventional survey or experimental methods, as educational practices vary based on demographics, policies, and the nature of institutions in different contexts. Subjective expert judgment is necessary due to the complexity of DDDM. A modified Delphi method is appropriate because it allows researchers to tailor the process to specific research questions by adjusting the initial set of items or questions presented to the expert panel, leveraging existing knowledge from literature reviews or stakeholder input, while still maintaining the core principles of anonymity, iteration, and consensus building inherent in the Delphi technique. In a modified Delphi technique, a team of researchers selects crucial concepts from existing literature, which are then presented to a group of specialists for prioritisation (Oxley et al., 2024). Alternatively, the initial phase of the Delphi process may involve posing open-ended inquiries (Keil et al., 2002), enabling participants to highlight concepts of particular significance to them. The adaptation in this investigation entailed commencing with a meticulously curated initial compilation of obstacles and enablers sourced from literature that influence the implementation of DDDM in Ethiopian higher education. This was to lessen the workload on the expert panel. In addition, the panellists were given the power to identify additional barriers and facilitators.

Study Participants and Data Source

In order to collect data, we sought the assistance of two prominent first-generation universities with high student population and faculty demographics and better information and communication technology infrastructure in comparison to more recently established universities (Ferede et al., 2022). The university leaders identified 57 individuals with expertise in data-driven decision-making and educational technologies. The inclusion criteria required individuals to possess knowledge about DDDM, data systems, and educational technologies, as well as a minimum of 2 years of work experience. ICT specialists were expected to have knowledge of educational technologies and a deep understanding of data infrastructure. Recruitment took place on February 6, 2023.

A total of 63 participants were invited to join the Delphi expert panel, with 57 agreeing to participate. The 57 participants comprised nine ICT specialists, two directors from the Office of Education Program Relevance and Quality Enhancement, and 46 higher education instructors. The ICT specialists included team leaders, such as the Infrastructure and Service Team Leader, Teaching Learning Technologies Team Leader, Technical and

User Support Team Leader, Training and Consultancy Team Leader, and Application Development and Execution Team Leaders. The instructors included faculty deans, department heads, department coordinators, and instructors from the departments of information science, computer science, information technology, software engineering, and computer networking.

Table 1: Participants characteristics

No.	Departments	Gender		Academic Qualification			Work experience
		Male	Female	Bachelor Degree	Master's Degree	PhD	Above two years, and most of them have more than 12 years of experience.
1	Faculty members	38	8	-	35	11	
2	ICT specialists	9	-	1	7	1	
2	Education programme relevance and quality assurance	2	-	-	-	2	

This research was carried out over a period of six months, from February to July 2023, utilising the modified Delphi method across three iterative rounds. A web-based questionnaire was employed for the survey, with the exception of the second round, which utilised the Microsoft Word checkbox feature and was distributed via email. The survey instruments were developed using Google Forms, and invitations were subsequently dispatched to participants via email. Prior to conducting the survey, the instruments underwent pilot testing by six voluntary experts. The experts who participated in the pilot test were three PhD holder faculty members, two M.Sc.-holder ICT experts, and one PhD holder education programme relevance and quality enhancement officer. All six experts engaged in the pilot test have experience in educational technologies. Feedback on the clarity and ease of completing the survey was obtained and used to modify the questions accordingly. Prior to sending out the invitations, a member of the research team, Zelalem Asfaw, engaged in telephone communication with each participant. Throughout each round, invitations to the survey were extended to panel experts who had previously agreed to take part, irrespective of their involvement in the preceding round. As an adjustment of the Delphi method, a thorough examination and analysis of existing literature was undertaken to create a compilation of obstacles and enablers for the adoption of DDDM. This involved the meticulous design of key terms (i.e., data-driven decision-making, data analytics, data use, data-driven approach, educational technology, and higher education) and

a scoping review of databases to identify relevant literature. Prior to the actual literature search, the key terms were tested across multiple databases. Subsequently, the researcher (Zelalem Asfaw) identified the barriers and facilitators following a thorough comprehension of the literature. The extracted lists of barriers and facilitators were deliberated among the researchers, leading to the development of an initial list of barriers and facilitators.

In the initial phase, the panel was tasked with selecting the significant barriers and facilitators from a predetermined list of 20 barriers and 16 facilitators, and also identifying any additional barriers and facilitators through open-ended questions. After removing duplicates, the participants specified 19 barriers and 4 facilitators. The specific questions for each round are presented in Table 2.

Subsequently, in the second phase, the panel was required to assess a total of 39 predefined and added barriers, as well as 20 facilitators, employing a 5-point Likert scale. For barriers: 5 (extremely obstacle), 4 (fairly obstacle), 3 (obstacle), 2 (slightly obstacle), and
1 (not at all obstacle). The index numbers were utilised to show the ratings of the items based on how important they were perceived to be.

Table 2: Objectives and Questions in Every Cycle

Purpose	Specific Questions	Question Types
Round 1		
Choosing obstacles and enablers from the preliminary compilations.	What barriers prevent you from implementing data-driven decision-making in teaching and learning activities at your university? Please check if that applies to you.	Selecting questions (Checkbox)
	What enablers could help support the adoption of data-driven decision-making in teaching and learning practices at your university? Please check if that applies to you.	Selecting Questions (Checkbox)
	What, if any, barriers do you experience in implementing data-driven decision-making to improve the quality of education at your university?	Open ended

	What, if any, facilitators do you consider in implementing data-driven decision-making in order to improve education quality at your university?	Open ended
Round 2		
Assessment of obstacles chosen in the first round	Please evaluate the potential obstacles based on their importance to implementing DDDM in HEIs in Ethiopia.	5-point Likert scale: Not at all Obstacle Slightly Obstacle Obstacle Fairly Obstacle Extremely Obstacle
Evaluation of facilitators selected in round 1	Please evaluate the potential enablers based on their importance to implementing DDDM in HEIs in Ethiopia.	5-point Likert scale: Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
Round 3		
Priotrisation of barriers and facilitators selected in the second round	In this phase, we kindly request that you prioritise the following barriers: Please assign a number from 1 to 10, with 10 indicating the lowest priority.	
	In this phase, we kindly request that you prioritise the following facilitators: Please assign a number from 1 to 4, with 4 indicating the lowest priority.	Ranking

In the concluding stage, individuals were tasked with prioritising the primary obstacles and enablers that must be tackled to effectively introduce a data-driven decision-making approach within higher education establishments in Ethiopia moving forward. The participants were asked to assign a score of 1 for the highest priority and 10 for the lowest priority for barriers and facilitators. In a way, they were requested to prioritise the

items from most significant to least significant. The ten most frequently cited barriers and facilitators are shown in Tables 3 and 4.

Table 3: The top ten Barriers to Implementing DDDM in Ethiopian HEIs, Ranked by Their Level of Significance

No.	Barriers	Round 2 (n=51)		Round 3 (n=48)	
		%	n	Mean Rank	Rank
1	Lack of DDDM policy	84	43	4.50	1
2	Organisational culture	82	42	4.39	2
3	Lack of DDDM culture	80	41	4.33	3
4	Lack of clear ICT policy	76	39	4.31	4
5	Lack of awareness and commitment of management bodies	76	39	4.29	5
6	Lack of budget/ associated cost	76	39	4.26	6
7	Lack of data management policy	78	39	4.11	7
8	Accessibility of data	76	39	4.09	8
9	Lack of collaboration between different stakeholders	80	39	4.02	9
10	Lack of sustainable investment on DDDM	82	39	4.00	10

'n' is the number of panel experts

The result of the findings in Table 3 indicates the lack of DDDM policy is the most significant factor (84% of experts agreed on) that might inhibit the adoption of DDDM in higher learning institutions in Ethiopia. It indicates its important since strategies and plans originate from policy. The (82% of experts) also indicated organisational culture is the next influential barrier that inhibits the implementation of DDDM. It is well understood that any practice is executed within the context of an organization. Consequently, the inherent attributes of the organization—such as its norms, vision, collaborative efforts, and leadership—significantly impact the implementation of DDDM in HEIs in Ethiopia. As indicated in the Table, out of ten high barriers three of them are policy issues, whereas lack of sustainable investment on DDDM is identified as the least important factor. This in turn implies the practice of DDDM is not a one-time job but needs continuous investment and support. The result from the panel of experts indicates that except barriers related to accessibility of data, all the identified barriers are in the category of organisational characteristics. In a broad sense, the identified barriers indicate the need for managerial perspectives rather than purely technical viewpoints.

As indicated in Table 4, a group of experts also identified and prioritized facilitators for the successful implementation of DDDM. The panel of experts (96%) agreed on the presence of network infrastructure as the most important facilitator in Ethiopian HEIs. The availability of good bandwidth internet was agreed upon by 92% of the expert panels, followed by the availability of skilled ICT specialists, which was also identified as a third level facilitator. The availability of computer access to students at the university level was also agreed upon as the last facilitator. However, among the 20 facilitators identified in the literature and added by the expert panellist group, only four of them reached consensus on facilitators in HEIs in Ethiopia. This indicates that rather than focusing on facilitators, it is imperative to look at barriers to the successful implementation of DDDM in Ethiopia.

Table 4: Top four facilitators for implementation of DDDM in HLIs

No.	Facilitators	Round 2		Round 3 (n=48)	
		%	n	Mean Rank	Rank
1	Presence of network infrastructure	96	46	4.30	1
2	Availability of good bandwidth internet	92	44	4.24	2
3	Presence of skilled ICT specialists	90	43	4.06	3
4	Availability of computer access to students at the universities	85	41	4.00	4

In addition to barriers and facilitators identified through an extensive literature review conducted by the researchers, further barriers and facilitators were gathered from the initial round of expert input. The researcher (Zelalem Asfaw) then evaluated the resemblances and disparities of the barriers and facilitators identified by the first-round panel of experts and those pre-identified from the literature review. These discoveries were subsequently deliberated with the research team. Furthermore, all of our questionnaires for each round contained an open comment section, allowing the panel of experts to freely express their opinions. Throughout each round, the researchers sent three reminders (i.e., weekly) to all participants to complete the questionnaire by scheduled date.

In this investigation, consensus was defined as the point at which the combined proportion of ratings 4 and 5 reached 80% or more for enablers, and the combined proportion of ratings 3, 4, and 5 reached 80% or more for barriers. It is worth noting that the Delphi method conventionally employs a threshold of 70% or more for consensus (Vernon, 2009). The mean scores were computed to assess the significance of barriers and facilitators.

Limitations of the Study

The initial compilation of barriers and facilitators was formulated by a sole researcher and subsequently deliberated with members of the research team. This approach may introduce partiality. Nevertheless, the utilisation of the Delphi method affords the opportunity to eliminate and introduce new elements, thereby mitigating potential bias. Furthermore, the participants were drawn from two well-established universities in Ethiopia. It is imperative that we acknowledge that this sample may not be fully representative of all universities in Ethiopia. Nonetheless, endeavours were made to encompass a diverse array of potential stakeholders, which may bring to light context-specific concerns.

Results

Summary of Responses

In the initial round, 54 out of 57 respondents participated, resulting in a response rate of 94.73%. The second-round garnered participation from 51 out of 57 respondents, yielding an 89.47% response rate, whereas in the concluding phase, 48 out of 57 respondents took part, resulting in an 84.21% response rate.

Summary of the Three Rounds

In the initial round, the panel was presented with 20 obstacles and 16 enablers that helped facilitate the discussion, and experts also identified 19 additional barriers and 4 additional facilitators. In general, 39 barriers and 20 facilitators were identified as potential factors in the first round (see Tables 5 and 6). In the subsequent phase, a total of 39 obstacles and 20 enablers were identified, and consensus was reached on 21 barriers and 4 facilitators (see Table 7). In the concluding phase, the panel was requested to provide rankings of the 10 most important barriers and facilitators that need to be addressed for the implementation of DDDM in Ethiopian HEIs.

Table 5: All Identified Barriers in the First Round

No.	**Barriers Identified from Literature**	**No.**	**Barriers Identified by Panel of Experts**
1	Lack of DDDM policy	21	Lack of autonomous authority
2	Organisational culture	22	Lack of culture of recording data
3	Lack of DDDM culture	23	Lack of effective standards
4	Privacy and security issues	24	Political issues
5	Lack of awareness and commitment of management bodies	25	Lack of effective tools
6	Lack of budget/ associated cost	26	Lack of clear ICT policy

7	Lack of data management policy	27	Quality of data
8	Accessibility of data	28	Lack of good bandwidth of internet
9	Lack of collaboration between different stakeholders	29	Timeliness of data
10	Lack of sustainable investment on DDDM	30	Challenge of integrating different databases from different sources
11	Data literacy in education	31	Institutional resistance (change resistance)
12	Stability of government policy	32	Lack of motivation to use data
13	Lack of linkage to external data intensive technology	33	Lack of availability of data
14	Lack of leadership support	34	Extra work load
15	Lack of training on data usage/DDDM	35	Lack of time for implementing DDDM
16	Lack of data infrastructure	36	Complexity of organizational structure
17	Lack of Network infrastructure	37	Lack of government incentives
18	Staff Capacity and support	38	Knowledge of students
19	Curriculum pacing pressure	39	Ministers of Education and Finance: Regulation related obstacles
20	Lack of data analyst and scientist/Lack of expertise staff/		

Table 6: All identified Facilitators in the First Round

No.	Facilitators Identified from Literature	No.	Facilitators Identified from Literature
1	Availability of policy regarding implementing data-driven decision-making	11	Good culture of data-driven decision-making
2	Availability of data management policy	12	Accessibility of data
3	Sustainable investment on data-driven decision-making	13	Timeliness of data
4	Presence of leadership support	14	Availability of adequate time to practice data-driven decision-making
5	Availability of training	15	Presence of institutional researcher
6	Presence of robust data infrastructure	16	Presence of data analyst and/ or scientist
			Facilitators Identified by Panel of Experts
7	Presence of Network infrastructure	17	Presence of skilled Information Technology experts
8	Availability of good bandwidth internet	18	Flexible organisational structure
9	Presence of linkage to data intensive industry	19	Availability of computer access to students at universities
10	Presence of privacy and security management systems	20	University Autonomy /Self-governance

Table 7: Consensus Reached 21 Barriers and Four Facilitators in the Second Round

No.	Barriers	No.	Barriers
1	Lack of DDDM policy	12	Lack of training on data usage/ DDDM
2	Organizational culture	13	Lack of leadership support
3	Lack of DDDM culture	14	Lack of effective standards
4	Lack of clear ICT policy	15	Lack of government incentives
5	Instability of government policy	16	Lack of linkage to external data intensive technology organisations
6	Lack of budget/ associated cost	17	Accessibility of data
7	Lack of data management policy	18	Timeliness/ up-to-date data
8	Lack of data analytics tools	19	Challenge of data integration from different data sources
9	Lack of collaboration between different stakeholders	20	Data literacy in education
10	Lack of sustainable investment on DDDM	21	Lack of culture of data recording
11	Lack of awareness and commitment of management bodies		
No.	**Facilitators**		
1	Presence of network infrastructure		
2	availability of good bandwidth internet		
3	presence of skilled ICT specialists		
4	availability of computer access to students at the universities		

Barriers

Among the 21 barriers identified in Table 7, the 10 barriers deemed to be of most importance for resolution include: absence of a DDDM policy (rated at 4.50 points), organisational culture (4.39), lack of DDDM culture (4.33), absence of a clear ICT policy (4.31), lack of awareness and commitment from management bodies (4.29), insufficient budget and associated costs

(4.26), absence of a data management policy (4.11), data accessibility (4.09), lack of collaboration among various stakeholders (4.02), and inadequate sustainable investment in DDDM (4.00). These barriers may have adverse effects on the successful implementation of DDDM in Ethiopian universities.

Facilitators

The four facilitators listed in Table 7 were determined to be of high importance for the implementation of DDDM. These facilitators include the presence of network infrastructure (4.30), the availability of good bandwidth internet (4.24), the presence of skilled ICT specialists (4.06), and the availability of computer access to students at the universities (4.00). In the truly data-driven decision-making system, data from all stakeholders is collected and analysed to make decisions. Thus, the availability of computer access to students at the university level enables students to communicate with the respective stakeholder, which aids in decision-making. In general, the above factors might facilitate the execution of data-driven decision-making in universities in Ethiopia.

Discussions

This research investigated the factors that hinder or support the adoption of data-driven decision making (DDDM) in universities in Ethiopia. The study utilised a modified Delphi method to establish expert consensus. The findings highlighted the significance of several barriers, including the absence of a DDDM policy, organisational culture, and ICT policy, as well as lack of awareness and commitment from management bodies, budget constraints, and lack of data management policies. Additionally, limited collaboration among stakeholders and insufficient sustainable investment in DDDM were identified as impediments. Conversely, the presence of network infrastructure at universities was recognised as a facilitator. The study also emphasised the importance of good-bandwidth internet, computer access for students, and skilled information technology experts as essential facilitators for the successful execution of DDDM in universities in Ethiopia.

Barriers

The study identified critical barriers, such as a lack of data-driven decision-making policy, a lack of data management policy, and a lack of ICT policy. Policy is the main driver as it provides principles and plans as a foundation for action, decision-making, and problem-solving initiatives aimed at facilitating the adoption of data-driven decision-making practices within Ethiopian HEIs. Policy plays a crucial role in setting a clear vision and goals that are necessary for effective utilisation of data, as emphasised by Wohlstetter et al. (2008) and Wayman et al. (2007). These are the most important barriers that should be addressed before the implementation of DDDM in HEIs in Ethiopia.

Previous studies in other countries have indicated that to execute DDDM in the educational sector, it is important to address critical issues related to policies. To effectively incorporate and achieve the goal of improving education quality through the utilisation of DDDM in higher learning institutions, it is crucial to establish policies that support data collection, access, utilisation, and data analytics. The research conducted by Webber and Zheng (2019) centred on the advancement of data-informed decision-making and analytics maturity within the realm of higher education states the importance of policy. It highlighted policies as a critical element among the six key components essential for enhancing analytics maturity in the context of implementing data-informed decision-making in higher education. In a similar way, the study by Dahlstrom (2016) focused on identifying data analytics maturity models for implementing DDDM in higher education, identified policies related to data collection, management, access, and sharing as crucial dimensions. In a similar fashion, Gill et al. (2014), in their study with the objective of developing a conceptual framework for DDDM in education, indicate that the implementation of DDDM is contingent upon the presence of supportive infrastructure, policies, and practices. Thus, our findings regarding the significance of policies for the execution of DDDM in higher education complement those of Webber and Zheng (2019), Dahlstrom (2016), and Gill et al. (2014). Research indicates that not only the availability of data-related policies but also specific policies implemented by different countries can impact the availability and accessibility of data for educational institutions. These policies have the dual effect of influencing and assisting educational institutions in their utilization of data (Schildkamp et al., 2013).

The results of this study also suggest that organisational culture within Ethiopian higher education institutions (HEIs) has an impact on the execution of DDDM. Moreover, the lack of DDDM culture, lack of awareness and commitment from management bodies, and insufficient collaboration among stakeholders were identified as factors that negatively affect the effective implementation of DDDM in HEIs in Ethiopia. The study by Schildkamp et al. (2016), which focuses on conditions for data use, identified that organisational characteristics influence data usage in educational institutions, which also aligns with our findings. To foster a culture of DDDM in the education system, it is crucial to have dedicated leadership and accountability systems in place. The study by Tabesh et al. (2019), focusing on the managerial perspectives of big data

implementation, indicates that the attitudes of top managers towards DDDM can significantly influence decision-making patterns throughout the organisation. Furthermore, Rasmussen and Ulrich (2015) found that important organisational decision-makers have a significant impact on the achievement or failure of data use initiatives. This underscores the importance of leaders in establishing a vision, norms, and goals for data utilisation within an organisation. The findings of Tabesh et al. (2019) suggested that managerial commitment and support can effectively address cultural and technological barriers to data use, which complements our findings. Data use is inherently a collaborative activity, and collaboration around data usage has been emphasised in various studies (Datnow & Park, 2013; Schildkamp et al., 2016). The utilisation of data to inform decision-making is a collaborative endeavour, and therefore, the establishment of an analytics programme aimed at enhancing decision-making across an organisation requires a collaborative approach both internally and externally (Dahlstrom, 2016; Webber & Zheng, 2019). Our finding regarding collaboration in DDDM also complements the previous studies.

The research findings also suggested that the absence of adequate funding and sustainable investment could have a detrimental impact on the integration of DDDM in higher educations in Ethiopia. Given that DDDM is a sophisticated technology, it necessitates investment in professional development, tools, and technologies that enable educational institutions to fulfil their objectives of enhancing the quality of education. Prior research has highlighted the necessity of transitioning towards a data-driven education system and has recommended investing in human resources, technology, and tools (Webber & Zheng, 2019). As Chui (2016) has observed, cost has been a significant barrier to the adoption of intelligent decision-making in educational institutions.

Furthermore, our study has identified that the lack of accessibility of data hinders the adoption of DDDM in Ethiopian HEIs. Previous studies have also emphasised the importance of ensuring that faculty members and other stakeholders have access to necessary data for decision-making, as the lack of access could pose a significant obstacle to data utilisation (Schildkamp et al., 2013; Marsh et al., 2006). In a broad sense, except for issues related to data accessibility that might happen due to technological or managerial limitations, our panel of experts agreed more than 90% of barriers (such as policy issues, leadership, organisational culture and cost related issues) for the implementation of DDDM in HEIs in Ethiopia may face obstacles related to organisational or managerial perspectives. In agreement with Tabesh et al. (2019), as well as Rasmussen and Ulrich (2015), the study

results indicate that the success or failure of data use depends organisational or managerial commitments to technological requirements.

Facilitators

Among the four facilitators identified in Ethiopian HEIs for the implementation of DDDM systems, except for the availability of skilled ICT specialists, three of them are subgroups of infrastructure. Specifically, the presence of network infrastructure, the availability of high-bandwidth internet, and access to computers for students at universities. This indicates that Ethiopian higher education institutions (HEIs) have a foundation in network infrastructure for implementing DDDM. A study by Schildkamp et al. (2013) focusing on DDDM indicates the importance of data and data systems for the adoption of DDDM in educational institutions. In a similar way, the study by Bolhuis et al. (2016) focused on identifying obstacles and facilitators for DDDM in teams, which indicates the necessity of data and data systems. Furthermore, the study by Chui (2016) focused on transforming educational institution management and decision making through DDDM, which indicates the necessity of data and data systems for the implementation of DDDM. Thus, our result regarding the availability of data (the network) complements the previous studies. In line with the availability of data systems, the HEIs have been using some educational software products for their daily teaching and learning activities, including student information systems for registration and grading and other research management applications. This will help in the fast implementation of DDDM in HEIs in Ethiopia.

However, the study by New (2016) focusing on creating a data-driven education system in the USA indicated that a data-driven education system would rely on various educational technologies specifically designed to improve every facet of the educational process. These technologies include the student information system, the learning management system, and the data warehouse. Through the lens of New (2016), our findings indicate the Ethiopian HEIs have in house-designed student registration systems for registration and grading purposes. In addition, the findings indicate that there was a practice of using LMS like Moodle during COVID-19 but it is not in use now. The data warehouse is unavailable. In general, the Ethiopian HEIs have limited facilitators for the implementation of DDDM.

The study by Webber and Zheng (2019) indicates that to successfully implement DDDM in higher education, it needs four essential components: technology, people, process, and culture. However, our findings indicate that there are limited facilitators for the execution of DDDM in higher

education institutions in Ethiopia, calling for forward thinking and workable solutions.

Conclusions and Recommendations

The objective of this investigation was to determine the barriers that hinder and enablers that facilitate the execution of DDDM in universities in Ethiopia. We have identified 10 key barriers and four facilitators. The top three barriers are lack of DDDM policy, organisational culture, and lack of DDDM culture. The availability of network infrastructure, access to good bandwidth internet, and the presence of skilled ICT specialists were identified as the top three facilitators. The results of the study indicate Ethiopian HEIs may encounter organisational or managerial barriers more than technological ones. Despite the unique contexts of universities in developing countries, the result of this study might be extended to other HEIs in other developing countries. In this study, policy appears to be the key and essential factor for the implementation of DDDM in HEIs in Ethiopia and in developing countries.

This research illustrated the significance of implementing a policy that serves as the cornerstone for fostering a culture of DDDM within HEIs in Ethiopia. The policy is designed to facilitate the collection, access, sharing, scrutiny, and interpretation of data to enhance the quality of education. Additionally, the policy is instrumental in promoting the commitment and accountability of managers and stakeholders, as well as in facilitating the efficient allocation of budget and resource management. Moreover, the policy plays a crucial role in establishing structured collaboration between internal and external stakeholders to ensure the effective implementation and execution of DDDM in HEIs in Ethiopia. Further insight gained from this research is that higher education institutions, such as Ethiopia, need to resolve or give equal opportunity to organisational barriers as well as technological barriers in order to successfully implement DDDM.

Future research should be conducted on identifying strategies for eliminating barriers and advancing facilitators in HEIs for the implementation of DDDM to improve the quality of education.

References

Acevedo, Y., Marin, C., Gaona-Garcia, P., & Crespo, R. (2018). A proposal to a decision support system with learning analytics. 2018 IEEE Global Engineering Education Conference, Tenerife (pp. 161–168). DOI: 10.1109/EDUCON.2018.8363223

Akal, T. D., Beshah, T., & Sackmann, S. (2019.). *Challenges of identifying and utilizing big data analytics in a resource-constrained environment:*

In the case of Ethiopia (Vol. 1). Springer International Publishing. https://doi.org/10.1007/978-3-030-20671-0

Alemu, B. M. (2017). Transforming educational practices of Ethiopia into development and the knowledge society through information and communication technology. *African Educational Research Journal*, *5*(1): 1-14

Assefa, M. (2019). Challenges and prospects of using software products in Ethiopian higher educational institutions. *International Journal of System and Software Engineering*, *7*(1), 01-12.

Attaran, M., Stark, J., & Stotler, D. (2018). Opportunities and challenges for big data analytics in American higher education: A conceptual model for implementation. *Journal of Industry and Higher Education*, pp. 1-14. https://doi.org/10.1177/0950422218770937

Baitanayeva, B., Aubakirova, Z., Aitbembetova, A., & Sansyzbayeva, A. (2020). *Problems of improving the quality of education*. E3S Web Conf. 159 09002 (2020). DOI: 10.1051/e3sconf/202015909002

Bolhuis, E., Schildkamp, K., & Voogt, J. (2016). Data-based decision making in teams: Enablers and barriers. *Educational Research and Evaluation*, *22* (3-4), 213-233. DOI: 10.1080/13803611.2016.1247728

Bustillo, V.E., & Patrinos, H. A. (2023). Four of the biggest problems facing education—and four trends that could make a difference. World Bank. https://blogs.worldbank.org/en/education/four-biggest-problems-facing-education-and- four-trends-could-make-difference

Chui, M. M. (2016). The promise of data driven decision making in transforming school management and decision making. *International Journal of Scientific and Research Publications, 6*(10), 158–161.

Dahlstrom, E. (2016). Moving the red queen forward: Maturing data analytics capabilities in higher education. *Educause Review*. https://er.educause.edu/articles/2016/8/movingthe-red-queen-forward-maturing-analytics-capabilities-in-highereducation.

Datnow, A., & Park, V. (2013). Affordances and constraints in the context of teacher collaboration for the purpose of data use. *Journal of Educational Administration, 51*(3), 341 – 362. http://dx.doi.org/10.1108/09578231311311500

Denny, M. (2020). Data-driven decision making: Improving student achievement. [Master's thesis], Northwestern College, Iowa.

Ergado, A. A. (2019). Exploring the role of information and communication technology for pedagogical practices in higher education: Case of Ethiopia. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT*), *15*(2), 171-181.

Fakeeh, K. (2015). Decision support system (DSS) in higher education system. *International Journal of Applied Information System (IJAIS)*, *9*(2), 32-40. DOI=10.5120/ijais15-451366

Ferede, B., Elen, J., Hunde, A. B., & Goeman, K. (2022). Determinants of instructors' educational ICT use in Ethiopian higher education. *Education and Information Technologies, 27*(1), 917–936.

Fomba K, B., Talla F.D, & Ningaye, P. (2022). Institutional quality and education quality in developing countries: Effects and transmission channels. *Journal of the Knowledge Economy*. 14. 86-115. DOI:10.1007/s13132-021-00869-9.

Gaftandzhieva, S., Hussain, S., Hilčenko, S., Doneva, R., and Boykova, K. (2023). Data-driven decision making in higher education institutions: State-of-play. I*nternational Journal of Advanced Computer Science and Applications*, *14*(6), 397-405.

Gill, B., Borden, B. C, & Hallgren, K. (2014). A conceptual framework for data-driven decision making. Research Report. Mathematica Policy Research.

Gray Group International. (2024). How to improve education quality: Proven methods for tangible results. https://www.graygroupintl.com/blog/how-to-improve-education-quality.

Heyneman, S. (1983). Improving the quality of education in developing countries: Better instruction and teaching tools are need. *Finance & Development*. 20(001). https://doi.org/10.5089/9781616353520.022

Ibido, M. (2020). Factors affecting quality of education in Ethiopian higher educational institutions: The case of Dilla University. *IOSR Journal of Research & Method in Education (IOSR-JRME), 10*(4), 55-58.

Kaspi, S., & Venkatraman, S. (2023). Data-driven decision-making (DDDM) for higher education assessments*:* A case study. *Systems, 11*(6), 1-13. https://doi.org/10.3390/sstems11060306

Keil, M., Tiwana, A., and Bush, A., (2002). Reconciling user and project manager perceptions of IT project risk: A Delphi study. *Information Systems Journal, 12*(2), 103–119. doi:10.1046/j.1365-2575.2002.00121.x

Lemmens, J., & Henn, M., (2017). *Learning analytics: A South African higher education perspective*. SUN PRESS. https://doi.org/10.18820/9781928357186/12

Marsh, J. A., Pane, J. F., & Hamilton, L. S. (2006). Making sense of data-driven decision making in education: Evidence from recent RAND research. Santa Monica, CA: RAND Corporation. http://www.rand.org/pubs/occasional_papers/OP170/

Ministry of Innovation and Technology (MInT). (2022). Digital Ethiopia 2025 Summary. https://mint.gov.et/wpcontent/uploads/2022/01/Summary_of_Digital_Strategy_Final_English1.pdf

Mukred, M., Yusof, Z., Mokhtar, U., Sadiq, A., Hawash, B., and Ahmed, W. (2021). Improving the decision-making process in the higher learning institutions via electronic records management system adoption. *KSII Transactions on Internet and Information Systems*, *15*(1), 90–113.

New, J. (2016). *Building a data-driven education system in the United States*. Center for Data Innovation. http://www2.datainnovation.org/2016-data-driven-education.pdf

Niederberger M., & Spranger, J. (2020). Delphi technique in health sciences: A map. *Front Public Health*, *8*, 1-10. DOI: 10.3389/fpubh.2020.00457. PMID: 33072683; PMCID: PMC7536299.

Nouri, J., Ebner, M., Ifenthaler, D., Saqr, M., Malmberg, J., Khalil, M., Bruun, J., Viberg, O., Conde-González, M., Papamitsiou, Z., Berthelsen, U. (2019). Efforts in Europe for Data-Driven Improvement of Education – A Review of Learning Analytics Research in Seven Countries. DOI: 10.3991/ijai.v11i.11053

Oliso, Z. Z. (2023). Ethiopian Higher Education Expansion and Persisting Challenges: A Systematic Review. *International Journal of Educational Review*, *5*(1), 11–20. https://doi.org/10.33369/ijer.v5i1.26544.

Oxley, E., Nash, M. H, & Weighall, A. R. (2024). Consensus building using the Delphi method in educational research: A case study with educational professionals. *International Journal of Research & Method in Education, 48(1),* 29-43. DOI: 10.1080/1743727X.2024.2317851

Rasmussen, T., & Ulrich, D. (2015). Learning from practice: How HR analytics avoids being a management fad. *Organizational Dynamics*, *44*(3), 236—242.

Robinson, C., Yeomans, M., Reich, J., Hulleman, C., and Gehlbach, H. (2016). Forecasting student achievement in MOOCs with natural language processing. The 6th International Conference on Learning Analytics & Knowledge – LAK, 16, (pp. 383–387). ACM Digital Library. https://doi.org/10.1145/2883851.2883932

Saidy, A. (2020). *Factors Influencing the Quality of Higher Education in Africa: An Explanatory Sequential Mixed Methods Study*. [Doctoral dissertation, University of Minnesota]. University Digital Conservancy. https://hdl.handle.net/11299/252359.

Schildkamp, K. (2019). Data-based decision-making for school improvement: Research insights and gaps. *Educational Research*, *61*(3), 257–273. https://doi.org/10.1080/00131881.2019.1625716

Schildkamp, K., Lai, M., & Earl, L. (2013). Data-based decision making in education: Challenges and opportunities. DOI:10.1007/978-94-007-4816-3.

Schildkamp, K., Poortman, C. L., & Adam, H. (2016). Data teams for school improvement. *School Effectiveness and School Improvement, 27*(2), 228-254. DOI: 10.1080/09243453.2015.1056192

Schildkamp, K., Poortman, C., Luyten, H., & Ebbeler, J. (2016). Factors promoting and hindering data-based decision making in schools. *School Effectiveness and School Improvement, 28*(2), 242–258. https://doi.org/10.1080/09243453.2016.1256901

Sclater, N. (2014). Learning analytics: The current state of play in UK higher and further education. Jisc. http://repository.jisc.ac.uk/5657/1/Learning_analytics_report.pdf

Sclater, N., Peasgood, A., & Mulla, J. (2016). Learning analytics in higher education: A review of UK and international practice. Full report. JISC, https://www.jisc.ac.uk/reports/learning-analytics-in-higher-education.

Shabani, J., & Okebukola, P. (2014). Quality assurance in Africa: Towards a continental higher education and research space. *International Journal of African Higher Education. 1*(1). https://doi.org/10.6017/ijahe.v1i1.5646.

Shacklock, X. (2016). The potential of data and analytics in higher education. Higher Education Commission. https://www.policyconnect.org.uk/research/report-bricks-clicks-potential-data-and-analytics-higher-education#1

Star, M., & Collette, L. (2010). GPS: shaping student success one conversation at a time, EDUCAUSE. http://er.educause.edu/articles/2010/12/gps-shaping-student-successoneconversation-at-a-time

Sultana, N., Yousuf, M. I., Naseer, M., and Rehman, S. (2009). The higher the quality of teaching the higher the quality of education. *Contemporary Issues in Education Research, 2*(3), 59-64 .

Tabesh, P., Mousavidin, E., & Hasani, S. (2019). Implementing big data strategies: A managerial perspective. *Business Horizons, 62*(3), 347–358. https://doi.org/https://doi.org/10.1016/j.bushor.2019.02.001

Tareke, T. G., Woreta, G. T., Zewude, G. T., Amukune, S., Oo, T. Z., & Józsa, K. (2024). Overview of Ethiopian public higher education: Trends, system, challenges, and quality issues. *Education Sciences, 14*(10), 1-20. https://doi.org/10.3390/educsci14101065

Terrill, T. A. (2018. *Data-driven instruction from the perspective of administrators and teachers* [PhD Dissertation, Published], Ball State University. https://cardinalscholar.bsu.edu/server/api/core/bitstreams/32480970-821e-4c7e-b667-a4ffd609397c/content

UNESCO. (2023). *Global Education Monitoring Report 2023: Technology in education – A tool on whose terms?* https://www.unesco.org/gem-report/en/technology.

UNESCO IIEP. (2020). Using data to improve the quality of education. https://learningportal.iiep.unesco.org/en/issue-briefs/monitor-learning/using-data-to-improve-the-quality-of-education

Unifyed. (2016). Data analytics & student recruitment: Boosting student enrollment in higher education, https://unifyed.com/blog/data-analytics-outlining-student-enrollment-strategies-in-higher-ed/,.

Vernon, W. (2009). A Delphi technique: A review. *International Journal of Therapy and Rehabilitation. 16*(2), 69-7.

Waweru, K. M. & Abate, S. (2013). Revenue diversification and resource utilization in Ethiopian universities. In D. Teferra (Ed.), *Funding higher education in Sub-Saharan Africa* (pp. 71-97). Palgrave Macmillan.

Wayman, J. C., Cho, V., & Johnston, M. T. (2007). *The data-informed district: A district-wide evaluation of data use in the Natrona County school district*. The University of Texas.

Webber, K. L., & Zheng, H. (2019a). Data analytics and the imperatives for data-informed decision-making in higher education. *Institute of Higher Education Research Projects Series, 2019-004*). https://ihe.uga.edu/rps/2019_004

Webber, K. L. & Zheng H. (2019b). Data-informed decision making and the pursuit of analytics maturity in higher education. IHE Research Projects Series 2019-010. https://ihe.uga.edu/rps/2019_010

West, D., Luzeckyj, A., Searle, B., Toohey, D., & Price, R. (2018). *The use of learning analytics to support improvements in teaching practice. innovative research universitie*s. Melbourne, Australia.

Wohlstetter, P., Datnow, A., & Park, V. (2008). Creating a system for data-driven decision-making: Applying the principal-agent framework. *School Effectiveness and School Improvement, 19*(3), 239–259. doi:10.1080/ 09243450802246376

Yallew, A. (2020). Higher education in Ethiopia: Recent developments and challenges. AfricAriv Preprints. DOI: 10.14293/111.000/000009.v1

Unpacking the Understanding of Social Justice in Higher Education From the Perspectives of Educators in Law, Health and Social Work

Ulene Schiller, Yvette Nkondo Hlophe, Arthur van Coller, Shenuka Singh, and Esmey Baratwa Esther Moema

Abstract

Social justice-informed pedagogy remains the bedrock for ensuring that educational programmes in higher education in South Africa are responsive to unmet learning needs and are contextualised within students' lived experiences. This paper documents the reflections of five senior academics (the authors) on how social justice can be applied to Law, Health Science, and Social Work, respectively. These academics were part of the Teaching Advancement at Universities (TAU) fellowship programme. Using Kim's Critical Reflective Inquiry Model and Nancy Fraser's concept of participatory parity, the authors interrogated the structural barriers to equitable education and the role of discipline-specific pedagogical practices in advancing or inhibiting social justice.

ABOUT THE AUTHORS: ULENE SCHILLER, email: uschiller@ufh.ac.za, University of Fort Hare; YVETTE NKONDO HLOPHE, email:Yvette.hlope@up.ac.za, University of Pretoria, South Africa; ARTHUR VAN COLLER, email: avancoller@ufh.ac.za, University of Fort Hare, South Africa; SHENUKA SINGH, email: singhshen@ukzn.ac.za, University of KwaZulu-Natal, South Africa; and ESMEY BARATWA ESTHER MOEMA, email: Esmey.moema@smu.ac.za, Sefako Makgatho Health Sciences University, South Africa

Schiller, U., Hlope, Y. N., Van Coller, A., Singh, S., & Moema, E. B. E. (2025). Unpacking the Understanding of Social Justice in Higher Education From the Perspectives of Educators in Law, Health and Social Work. *International Journal of African Higher Education*, *11*(3), 76-107. https://doi.org/10.6017/ijahe.v11i3.18183

Findings reveal that while social justice is a guiding principle across the identified disciplines, its implementation is inconsistent and often constrained by entrenched institutional norms and economic disparities. Legal education struggles to move beyond doctrinal teaching to cultivate critical consciousness; health sciences education largely embeds social justice in patient-centred care but overlooks the lived experiences of students; and social work education emphasises equity yet still faces structural barriers in practice-based learning.

The study highlights the necessity of embedding participatory parity in higher education and fostering an emancipatory pedagogy that moves beyond content delivery to active student engagement. The paper concludes with recommendations for higher education institutions to institutionalise social justice principles through curriculum reform, inclusive teaching strategies, and structural changes that promote equal access and participation.

Keywords: social justice, higher education, health sciences, law, social work

Résumé: La pédagogie fondée sur la justice sociale permet de garantir que les programmes éducatifs de l'enseignement supérieur en Afrique du Sud répondent aux besoins d'apprentissage non satisfaits et soient contextualisés dans les expériences des étudiants. Cet article documente les réflexions de cinq universitaires chevronnés (les auteurs) sur la manière dont la justice sociale peut être appliquée au droit, à la médecine, à l'odontologie et au travail social, respectivement. Ces universitaires faisaient partie du programme de bourses Teaching Advancement at Universities (TAU). En s'appuyant sur le modèle d'enquête critique et réfléchie de Kim et sur le concept de parité participative de Nancy Fraser, les auteurs se sont interrogés sur les obstacles structurels à une éducation équitable et sur le rôle des pratiques pédagogiques propres à chaque discipline dans la promotion ou l'inhibition de la justice sociale.

Les résultats révèlent que si la justice sociale est un principe directeur dans toutes les disciplines identifiées, sa mise en œuvre est incohérente et souvent limitée par des normes institutionnelles enracinées et des disparités économiques. L'enseignement juridique peine à dépasser l'enseignement doctrinal pour cultiver une conscience critique; l'enseignement des sciences de la santé intègre largement la justice sociale dans les soins centrés sur le patient mais néglige les expériences vécues par les étudiants; et l'enseignement du travail social met l'accent sur l'équité mais se heurte encore à des barrières structurelles dans l'apprentissage basé sur la pratique.

L'étude souligne la nécessité d'intégrer la parité participative dans l'enseignement supérieur et d'encourager une pédagogie émancipatrice qui aille au-delà de la transmission de contenus pour favoriser l'engagement actif des étudiants. Le document se termine par des recommandations à l'intention des établissements d'enseignement supérieur pour qu'ils institutionnalisent les principes de justice sociale par le biais d'une réforme des programmes, de stratégies d'enseignement inclusives et de changements structurels qui favorisent l'égalité d'accès et de participation.

Mots-clés: justice sociale, enseignement supérieur, sciences de la santé, droit, travail social

Introduction

South African social-political changes in the post-apartheid era introduced a distinct mandate for the State to develop and realise a reasonable, transparent, and effective plan to provide immediate universal and quality basic and adult education with reasonable and continuous access to higher education (HE). This plan had to consider the spatial, demographic, economic and budgetary imperatives of South Africa in light of the ever-growing demand for HE (CHE, 2007). The massification of HE may have produced the required diversification and increased student enrolment. However, contrary to expectations, this plan has arguably failed to ensure that students are treated as individuals, as required by the concept of 'dignity,'and to empower people through access to HE. (Sehoole & Adeyemo, 2016). Students' subsequent upward social mobility has thus not been fully realised.

HE institutions, in turn, were required to develop a social justice-informed pedagogy for all offered programmes. Social justice in HE was accordingly introduced as an emerging equity-minded teaching and learning approach that creates environments for students who have been historically marginalised due to their race, ethnicity, gender identity, religion, or differing abilities (Achieving the Dream (ATD), 2023). However, HE institutions across South Africa inherited historical uneven student populations, staff and resource availability. Thus, the social-political environment became imperative, and the need to invest in professional training of educators in HE to emphasise a social approach to pedagogy was unavoidable.

Due to numerous challenges, it was difficult for educators to ensure a pedagogy for social justice or a socially just pedagogy (De Kadt, 2020). This challenge arose as educators, due to their disciplinary backgrounds and personal beliefs, expressed varied understandings of how to underpin a social justice framework in their pedagogy. Some educators, as a result,

focused on systemic social equality, while others emphasised the role of social justice in challenging access and equity in HE, thereby creating 'participatory parity' (Bozalek & Zembylas, 2019). This interpretation of social justice by the authors aligns with previous research findings where educators, in relation to social justice in HE, referenced social equality/inequality, discrimination, power relations, social inclusion/exclusion, a fair distribution of resources, opportunities and privileges in society; maximising students' ability to flourish; responsiveness to the particularity of students' needs and the freedom of students to pursue significant priorities (Bozalek & Zembylas, 2019). These varied perspectives on social justice influence how educators integrate social justice into their teaching and the complexity of implementing uniform pedagogical practices. A need was thus identified to illuminate the nuanced intersections between social justice and educational praxis, focusing on fostering participation and parity in the teaching and learning domains.

Social justice is an aspirational ideal wherein everyone, notwithstanding any differences and diversity based on factors such as race, gender, religion, culture, and other aspects of their identities, is treated in a dignified, equal, and fair manner. Madonsela and Lourens (2021) and Mollenkamp (2022) define social justice as just and fair access to equitable opportunities, resources, and privileges. In the context of HE, social justice means treating individuals (students) fairly and equitably, regardless of their backgrounds, and dismantling policies and practices that perpetuate inequities (McPhail, 2021). Socially just pedagogies in education have also been defined as those efforts of educators to transform policies and introduce teaching methods that advance the learning experiences and other opportunities of marginalised students and encourage and empower all students to respond to societal injustices (Bozalek & Zembylas, 2019). Davis and Steyn argue that social justice education is ultimately aimed at developing a value system wherein notions of justice, democratic values, freedom, and the suffering of others are a central concern (Davis & Steyn, 2012).

This paper evaluates the understanding and application of social justice within HE through the viewpoints of five educators (co-authors of this paper) from Law, Health, and Social Work disciplines, emphasising the importance of incorporating social justice principles in pedagogy. The educator's reflections were mainly aimed at examining and understanding the various challenges, such as access for disadvantaged students, funding, sustainability, and many more, faced by and within HE institutions. These co-authors, were part of the Teaching Advancement at Universities (TAU) Fellowship programme (cohort four) offered by Universities South Africa (USAf). This programme aimed at equipping the delegates with skills to

incorporate social justice in their pedagogy and is described in more detail later in the paper.

Contextualising Challenges in Higher Education in South Africa

The fundamental traits of the HE landscape pre-1994 included segregation and, thus, limited access to education based on race. The transition to a constitutional democracy introduced various changes in HE. Some of these changes included restructuring HE institutions to allow enrolment in HE institutions (HEI) that served all racial groups based on inclusivity, access, and representation (CHE, 2007). The Council for Higher Education (CHE) in South Africa aimed to create a system aligned with constitutional values and addressing social justice. Despite efforts to increase access to HE, disparities persist, particularly along racial and economic lines. Historically disadvantaged groups face barriers to accessing HE due to financial constraints, inadequate secondary-level preparation, and limited availability of institutions in rural areas (Zungu, 2022; Sivanath, 2020). These barriers often lead to student activism, characterised by protests and demonstrations, reflecting underlying grievances related to tuition fees, accommodation, and campus safety. These protests often disrupt academic activities and draw attention to systemic governance, representation, and student welfare challenges (Cloete & Maassen, 2015).

At various levels, HE institutions were impacted by insufficient funding, leading to compromised infrastructure, limited resources for research and development, and challenges in recruiting and retaining qualified academic staff members. The funding model often fails to adequately support the growing demand for tertiary education, exacerbating inequalities and hindering the sector's growth (Cloete & Maassen, 2015). These financial constraints are not only limited to the appointment of academic staff members but also to supporting them, influencing the administration and quality elements of the academic project. Luckett and Naicker (2019) refer to the HE system as still being dominated by the 'structural reproduction of social inequalities'.

Addressing these challenges requires holistic approaches prioritising equity, inclusivity, and quality in HE. De Kadt (2020) notes the importance of creating conditions that encourage equitable participation. It necessitates collaboration among government entities, HE institutions, civil society organisations, and other stakeholders to enact sustainable reforms and realise education's transformative potential (DHET, 2017). Ensuring and maintaining academic standards and quality assurance mechanisms are also essential. Issues such as outdated curricula, inadequate teaching and learning resources, and the need for continuous professional development

for academic staff affect the quality of education provided (Geldenhuys & Oosthuizen, 2015). Achieving meaningful transformation requires navigating complex power dynamics and entrenched structures of privilege.

HE is a dynamic and constantly evolving environment that has undergone significant changes. These ongoing shifts create challenges for academics, who must balance multiple responsibilities. To maintain quality education, academics must continually reassess their teaching and research practices, adopting creative and innovative approaches to effectively teach large classes (; Essop, 2021; Lepp et al., 2021). However, initiatives to promote inclusivity, diversity, and the recognition of indigenous knowledge systems have encountered institutional inertia, ideological tensions, and practical challenges in implementation. The efforts to transform HE and decolonise the curriculum add to the complexity of maintaining high-standard curricula. These efforts are sometimes faced with resistance and obstacles.

Teaching Advancement at Universities Fellowship Programme

The Department of Higher Education and Training (DHET), aware of the challenges academics face, introduced the TAU fellowship aimed at academic scholarship to enhance teaching and learning in HE across institutions and disciplines (De Kadt, 2020). As a component of the DHET National Framework for advancing academics as university educators, the TAU fellowship programme was first introduced in 2016. The programme is funded through the University Capacity Development Programme (UCDP) as a collaborative project, and the participants are academics nominated from all public institutions of HE across South Africa.

The purpose of TAU is to contribute to transforming teaching and learning in South Africa's HE sector. It aims to improve academic skills and create a cadre of experienced senior academics to advance teaching excellence. The programme incorporates social justice as a central theme to unravel intricacies associated with the HE environment. As De Kadt (2020) outlined, the TAU programme aims to contribute to the 'positioning of upper-level academic staff, across institutions and disciplines, for more prominent leadership and change roles focused on teaching and learning in their institutional context'.

The programme participants are drawn from a range of disciplines and institutions. Nominations for participation in this programme are done competitively at the individual's institutional level. Successful nominees are expected to work collaboratively on several activities and tasks as part of the TAU fellowship, with the primary objective of solidifying the teaching and learning environment for educators and learners by challenging the

legacies of inequality from the past and advancing social justice. As part of the fellowship, enquiry groups were formed by the coordinators of the programme prior to the first meeting of the TAU residential contact sessions.

The programme was arranged with three week-long contact sessions over a period of eighteen months. During these contact sessions, keynote addresses, debates and discussions were held with the purpose of getting a deeper understanding of teaching and management in the HE sector. The formal sessions were followed up with continuous informal sessions during lunch and dinner conversations. Contact sessions allowed for the development of deeper relationships where issues within the HE context could be followed up with stimulating intellectual interactions.

The first session provided an overview of the challenges facing academics in South African HE. The second session allowed participants to continue engaging in high-level academic discussions and refining their collaborative projects. The third and final session featured key presentations on high-level conversations in the teaching and learning space, as well as discussions on learning and teaching in social justice. These sessions played a crucial role in shaping participants' perspectives on the broader HE landscape and fostering their roles as transformative leaders in academia.

The co-authors of this paper were grouped together as an enquiry group and came from different disciplines and institutions (law, health sciences and social work). One of the key objectives of the TAU programme was for delegates to reflect on social justice in and at HE institutions. The outcomes of the numerous interactions between the authors resulted in various reflections and conclusions on the issue of social justice in their teaching practices. While these reflections were intended to be part of the TAU programme, the co-authors used this opportunity to develop this paper with the purpose of sharing such experiences with the larger academic community.

Building upon De Kadt's (2020) work, this paper aims to enrich the dialogue surrounding the understanding of social justice from different disciplinary perspectives and the role of professional development in nurturing and supporting academics to become effective change agents in higher learning institutions. Quinn (2012) emphasised this outcome, indicating the need for a more theoretical approach to professional development. This emphasis stimulates intellectual curiosity and encourages a deeper exploration of the topic. Through this interdisciplinary lens, the transformative potential

is inherent in collaborative endeavours to advance equitable educational practices and promote social justice within the identified disciplines.

Theoretical Framework

In this paper, Nancy Fraser's analytical framework was used as a theoretical lens for critical theory to understand aspects of social justice that guided the authors' reflections and understanding of social justice. The three core dimensions of this framework were used, namely the economic dimension of distribution, the cultural dimension of recognition, and the added third political dimension of representation or framing (Fraser, 2007). Fraser (2007) argues that social justice is realised when individuals achieve participatory parity, meaning they can interact as peers in all spheres of social life without being hindered by economic, cultural, or political disadvantages. In the context of HE, participatory parity demands equitable access to education, recognition of diverse student identities, and inclusive institutional policies. These dimensions are central to understanding how disciplines engage with social justice and how teaching practices either foster or impede parity in participation.

Applying Fraser's (2007) concept of participatory parity to curriculum design requires not only addressing economic and structural barriers to access but also ensuring that pedagogy itself fosters active engagement and critical participation. Teaching practices must move beyond traditional content delivery to create inclusive spaces where all students, regardless of background, can participate as equals. Without structural shifts in curriculum development, such as integrating more contextually relevant material and diverse knowledge systems, social justice efforts risk remaining superficial.

While Fraser's (2007) concept of participatory parity offers a structural lens for analysing social justice in HE, additional perspectives from critical pedagogy further illuminate the role of education as a site of transformation. Freire (1970) argues that education must cultivate critical consciousness (conscientização), enabling students to recognise and challenge systems of oppression rather than passively absorbing knowledge. Freire's critique of the 'banking model' of education - where students are treated as empty vessels to be filled with information—resonates with contemporary critiques of traditional curriculum design in HE, which often fails to foster student agency and active participation.

Hooks (1994) extends this discussion through her concept of 'engaged pedagogy,' emphasising that teaching should be an interactive, student-centred process that acknowledges learners' lived experiences. Hooks

argues that intersectionality, recognising how race, gender, and class shape access to education, must be central to any justice-oriented pedagogy. By integrating Freirean and Hooksian perspectives, social justice in HE must move beyond policy rhetoric and structural adjustments to cultivate classrooms that empower students as co-creators of knowledge.

These three interwoven dimensions of Fraser steered many discussions and reflections during the TAU programme to understand true participation parity that extends the understanding of social justice. The economic dimension is viewed as an impediment to full participation, which is limited due to the lack of financial resources. This, along with the cultural dimension that focused on the inability to interact or engage in institutional practices based on inequality or misrecognition, and thirdly, the political dimension of representation or framing that 'furnishes the stage on which struggles over distribution and recognition played out' (Fraser, 2007). Using this understanding, the authors reflected on the extent to which their knowledge of implementing social justice in these identified disciplines was developed after participating in the TAU fellowship programme. These reflections and understandings of social justice could be described as cyclical and continuously developing through the joint discussions among the authors.

Freire (1970) asserts that true education is an act of liberation, where learners move from a position of passive reception to one of active transformation. In an emancipatory HE model, students are not merely taught about social justice but are empowered to interrogate, critique, and reshape the structures that perpetuate inequality. This requires disrupting traditional teaching hierarchies and creating spaces for dialogue, reflexivity, and activism.

However, the findings suggest that while social justice is embedded in various disciplinary discourses, many pedagogical approaches still reflect banking education principles—particularly in fields where professional training is seen as value-neutral (e.g., medicine and law). As Hooks (1994) argues, 'education as the practice of freedom' necessitates that both students and educators actively participate in creating transformative knowledge spaces. Without this commitment, social justice risks being treated as a theoretical ideal rather than a lived practice.

Research Question

How did the authors' perspectives and understanding of social justice evolve during and after the TAU fellowship programme?

Methodological Approach

The authors used critical reflective practice as a research design to explore the nature and understanding of social justice from their discipline-specific perspectives. As illustrated earlier, these educators were part of an allocated enquiry group within the TAU programme. The TAU programme had ten enquiry groups, and these allocations were done by the TAU coordinators. Potential biases in participant selection were thus minimised as this author group was formed by the TAU programme coordinators. While the TAU programme was structured with set deliverables for each delegate, participation in this reflective study was voluntary. The source material was obtained from the authors' individual reflective journaling during the TAU programme; whereafter, the reflections were collectively analysed to identify patterns and themes. These reflections were not limited to their current employment within a specific institution but rather encompassed their total teaching and learning experience. This approach includes intentional reflection, which is described as a means to understand a specific work situation and to explore the underlying assumptions and beliefs that facilitate or hinder service delivery, as well as identify strategies for improving the delivery of such services (Miller et al., 2020), in this case teaching and learning in HE within a social justice context. Reflection is described as an integral part of social justice teacher education (Nieto, 2006). Connors and Seifer (2008) refer to critical structured reflection as essential to high-quality learning. On the other hand, Gorski and Dalton (2020) describe reflection as the vital aspect of academic knowledge that modifies students' worldviews and understanding of themselves.

Kim's Critical Reflective Inquiry Model was used to guide the process of critical reflection on the primary research question of how academic educators' perceptions evolved during and after the TAU programme. The model comprises three phases, namely: "Descriptive," "Reflective," and "Critical/Emancipatory" (Kim, 1999). The *descriptive phase* included depicting the individual author's thoughts, feelings, and prior understanding and engagement with social justice theory in their respective settings (before enrolment into the TAU programme). Each author documented their initial knowledge of social justice within their disciplines, supported by literature, the extent to which it was explicitly covered in their disciplines/fields of teaching, and how this was expressed in the identified curricula.

For the *reflective phase*, reflective analysis was guided by the authors' understanding of social justice prior to their participation in the TAU programme and how these thoughts and perspectives evolved through a nuanced understanding of social justice at both the individual and group levels. These reflections were shaped by the existing social structures,

historical imbalances in health and social care, and how the current context of HE impacts the individual's understanding of diversity in student learning and teaching. This outward exploration can activate an inward exploration in the individual, potentially enhancing identity development and identity-based agency (through the life course, interactions with others and development of one's personality) (Kawai, 2021). Thus, the reflective phase included reflecting on the situation and analysing the intentions.

The *Critical/Emancipatory phase* focused on a critique of existing practices at an individual level and across the identified disciplines, thus allowing for comparisons in discipline-based assumptions, beliefs, and personal and professional values. Here, the authors looked at how underlying assumptions, beliefs and personal and professional values impact current practices within the discipline and among the identified disciplines. This exercise further allowed the authors to engage in an 'emancipatory and change process' (Kim, 1999), meaning there were opportunities for the authors to make recommendations for improved learning and learning within HE with a stronger focus on social justice. Such recommendations included a focus on the context of learning, awareness of the barriers to change, the deeply held personal beliefs and values, and the strategies for implementing change.

Positionality Statement

As authors, the diverse academic and professional backgrounds are acknowledged, which have shaped these perspectives on social justice in HE. The interdisciplinary team consists of five senior academics from the disciplines of Medicine, Dentistry, Law, and Social Work, ranging in rank from Senior Lecturer to Professor. Coming from different cultural, ethnic, and gender identities, varied lived experiences and disciplinary insights were brought into this work. While recognising the positionality of the authors within the structures of HE, it is acknowledged that there was the commitment to critically reflecting on and challenging systemic inequities in teaching and learning. The collective engagement in the TAU programme provided an opportunity to interrogate social justice principles within the respective disciplines, fostering a deeper understanding of their role in shaping equitable and inclusive educational environments.

Drafting this article was a complex process due to the diverse viewpoints and disciplinary backgrounds of the authors. The authors approached teaching and learning through the lenses of their respective fields, shaped by their beliefs, pedagogical philosophies, and experiences. It became clear that academics from Law, Social Work, and Health Sciences approach research, writing, and teaching in fundamentally different ways. Law scholars tend

to focus on doctrinal analysis and legal reasoning, social work academics prioritise reflexivity and practice-based inquiry, while health sciences scholars often adopt empirical and evidence-based methods.

These differences inspired extensive deliberations on the conceptualisation and application of social justice within HE. The actual drafting of the article was, as a result, equally complicated due to the varied approaches to academic research and writing of each author. This process, although challenging, ultimately enriched the paper by offering a multidimensional exploration of social justice in pedagogy.

Findings

The author's reflections are presented according to Kim's Critical Reflection Inquiry Model's three phases, which are included in the different disciplines (Law, Health and Social Work). The first phase was the *descriptive* aspect of the authors' disciplinary understanding of social justice, their perspectives, and observations.

Descriptive Phase

Social Justice Perspective from Law

Within the discipline of law, unravelling different aspects of social justice with the discipline starts with the Constitution of the Republic of South Africa ("the Constitution"), which recognises inherent and individual dignity as an intrinsic feature of all humans (Constitution of the Republic of South Africa, 1996, section 9). The dignity of every natural person is universally equal, and it demands that everyone, on a reciprocal basis, be treated and recognised as humans with unique traits and attributes (S v *Makwanyane* 1995 (6) BCLR 665 para 224). Dignity is a moral justification for and a basic normative foundation of other fundamental rights. It generates, identifies, informs, animates, directs, underwrites and interprets specific fundamental rights (Dawood v Minister of Home Affairs 2000 (3) SA 936, para 35). This directly intersects with the understanding of McPhail (2021), who outlines that social justice in the context of HE requires that individuals should be treated with dignity.

The Bill of Rights (Chapter 2 of the Constitution of the Republic of South Africa, 1996) included founding values of human dignity, equality and freedom aimed in part at advancing social justice. Dignity must be interpreted to reference the concept of 'social justice'. The South African Constitutional Court (CC) has defined social justice concerning the South African concept of ubuntu, which emphasises the communal nature of society and 'carries in it the ideas of humaneness, social justice, and fairness'. It further envelopes 'the key values of group solidarity, compassion, respect,

human dignity, conformity to basic norms and collective unity' (*Everfresh Market Virginia (Pty) Ltd* v *Shoprite Checkers* (Pty) Ltd 2012 (1) SA 256 (CC), para 71).

Social justice, therefore, demands the participation of everyone, including the most disadvantaged members of society, in all aspects of society. The government must be held to account if it fails to comply with its fundamental rights obligations. Social justice can, accordingly, be interpreted as a guiding principle, urging academics, policymakers and legal practitioners to create a more just and equitable society within the HE sector. The implication is that social justice must be incorporated into legal education. Students must be empowered to become legal practitioners committed to acting on behalf of the vulnerable, dismantling discriminatory laws and advocating for marginalised communities. Social justice perspectives must be incorporated into every aspect of teaching and research so that students can understand how legal systems may perpetuate inequality (Jabyn, 2020).

In legal education, the principle of participatory parity is crucial but often overlooked. Many students enter law school from vastly different educational backgrounds, yet legal education assumes a level playing field. This disparity affects students' ability to engage as peers in learning spaces, particularly when access to mentorship, funding, and academic resources remains uneven. True social justice in legal education would require proactive measures to ensure that marginalised students can participate on an equal footing, not just in curriculum content but also in access to professional opportunities.

Social Justice Perspective from Health Care

From a healthcare perspective, the concept of social justice, as an interdisciplinary approach that bridges various domains to equip healthcare students with the necessary social consciousness, is crucial. Social justice promotes equal access to quality healthcare for all individuals, regardless of socioeconomic status, background or race (Mailloux, 2011; Davis et al., 2020). Here, the focus is on the student's understanding of how social justice is applicable in healthcare. The student needs to recognise the different approaches the health system uses to promote justice in healthcare delivery. One example of the approach used by the public health system is the primary health care (PHC) model, which provides a vehicle for delivering health care services that are appropriate, relevant and contextualised to local unmet health needs (Behera et al., 2022).

Such an approach aims to eliminate health disparities across all racial and socio-demographic groups. At the same time, health promotion activities

are driven by the need to ensure the creation of an enabling environment for individuals and communities to make healthier choices (Caron et al., 2023; Nutbeam et al., 2021). Both PHC and health promotion approaches strive to empower individuals and communities to take control of their health. Thus, the learning environment focuses on building learners' knowledge and skills that would enable the graduate to meet the demands of the health system. Thus, the application of social justice in curricula, in this case, is limited to the actual subject content.

Another author understood the cultivation of professional values, including social justice, as an ongoing and extended journey that begins in healthcare education and continues throughout years of healthcare practice (Habibzadeh et al., 2021). This journey involves both students and educators, who play crucial roles in learning and developing professional values. Schiff et al. (2012) and Rukadikar et al. (2022) describe social justice education as an interdisciplinary approach that fosters collaboration across social, political, and biomedical domains, equipping healthcare students with the social consciousness necessary to provide competent healthcare to all community members. This collaborative effort involving all healthcare stakeholders empowers them to provide competent care while advocating for social justice within their communities.

Interdisciplinary teaching of public health principles, such as (socio-economic, cultural and political principles, global burden of disease, and environmental determinants) in basic science modules, such as physiology, needs to be established (Jacobsen et al., 2022). This approach will help students understand the significance of social health determinants and their impact on molecular physiological changes (Chamany et al., 2008). It is important to note that health inequalities significantly affect life expectancy, mortality, and morbidity statistics and, therefore, social epidemiologists have noted that social factors manifest in the physiology of a population, indicating that socio-economic challenges are reflected in an individual's physiology (Krieger 2005 and 2011; Maurizio, 2015). Understanding the epidemiology of social determinants and linking it to molecular physiology effectively introduces social justice aspects to basic sciences and fosters empathy for vulnerable members of our society (Venkatapuram & Marmot, 2009).

Transforming health professional education to equip future practitioners with the ability to consider patients' unique risk factors—within the context of socioeconomic status, social environment, and physical surroundings—requires a fundamental restructuring of curricula. This shift demands that subject experts not only rethink their content but also adopt innovative

approaches to integrating the social determinants of health into their teaching. By embedding these critical perspectives, health programmes can encourage interdisciplinary collaboration, fostering richer, more holistic learning experiences. Ultimately, this transformation will better prepare students with the knowledge, skills, and attitudes necessary to address health disparities effectively and promote equitable healthcare outcomes (Lewis et al., 2020).

Social justice ensures that people and clients accessing healthcare services are treated equally and with dignity. However, distributive justice, especially in the public healthcare sector, increases equitable access to healthcare. Ending the dilemma of unmet health needs within the healthcare services, and ensuring resources are re-distributed based on the needs of the affected population. Social justice, in this context, emphasises a patient- or client-centred approach that prioritises individual needs while addressing historical disparities in healthcare access. In healthcare education, systemic inequalities in prior education and resource availability disrupt participatory parity.

Social Justice Perspective from Social Work

Social workers are imperative in promoting social justice, as they advocate for vulnerable populations, fight against discrimination, and empower individuals to access resources and services (Braveman et al., 2011). In addition, social work education emphasises understanding systemic injustices and engages in policy analysis, community organising, and direct practice to address inequality and promote social change (Bhagwan, 2017).

In social work, social justice is not just a theoretical framework but a guiding principle that informs practice at every level (Department of Social Development (DSD), 2013). Embedded in the Framework for Social Services (2013), one of the elements of the developmental approach is a rights-based approach. This element emphasises social justice, a minimum standard of living, equitable access and equal opportunity to services and benefits, and a commitment to meeting the needs of all South Africans, particularly the most disadvantaged (DSD, 2013).

A central part of the social work curriculum is to educate social workers to recognise and challenge the structural inequalities contributing to social injustices. This is done in all the different modules in the curricula that deal with social work methods. They work with individuals, groups and communities to address poverty, discrimination, oppression, and access to resources (SACSSP, n.d). Whether they are providing direct services, advocating for policy changes, or conducting research, social workers are committed to promoting social justice and empowering those who are marginalised or disadvantaged.

One of the key ways social justice is prevalent in social work is through a commitment to anti-oppressive and anti-discriminatory practices (Dominelli, 2017). Social workers are trained to examine their own biases and privileges critically and to challenge discrimination and oppression in all its forms actively. This may involve advocating for the rights of specific marginalised groups, such as racial minorities, LGBTQ+ individuals, immigrants, or people with disabilities, and working to create inclusive and equitable systems and policies.

Furthermore, social workers often engage in community organising and activism to address systemic issues and promote social change. They collaborate with other professionals, community organisations, and grassroots movements to advocate for policies and practices that advance social justice and human rights (SACSSP, n.d). Social workers play a crucial role in building more just and equitable societies by working at the micro and macro levels. Ultimately, social justice is a goal to be achieved and a guiding principle that shapes the social work profession's values, ethics, and practices.

Social work education is inherently aligned with principles of social justice, yet challenges to participatory parity persist. While the curriculum emphasises equity, students from historically marginalised backgrounds may still face institutional barriers that limit their full participation. For instance, financial constraints often prevent students from engaging in unpaid internships, which are integral to social work training. Ensuring participatory parity in social work education requires restructuring these institutional norms to guarantee equal access to experiential learning opportunities.

Assessment in social work education is a crucial mechanism to evaluate students' ability to critically engage with social justice principles. A key method is the use of case studies that require students to analyse real-world scenarios where systemic inequalities affect service users. Through structured case analysis, students demonstrate their capacity to apply social justice theories in decision-making and intervention planning.

Furthermore, reflective journaling and portfolios are integrated into coursework to encourage students to critically engage with their own biases, positionality, and ethical responsibilities in advocating for marginalised communities. Fieldwork assessments, including supervision

reports and structured evaluations, assess students' application of social justice in direct practice settings. Additionally, policy analysis assignments require students to critique existing social policies and propose reforms that enhance equity and inclusion. These assessment strategies ensure that social work graduates do not merely understand social justice in theory but are equipped to operationalise it in practice, making them effective advocates for systemic change.

During the descriptive phase, the authors individually describe their understanding of social justice embedded in their disciplines. During the next phase, joint discussions were held among the authors to reflect on a deeper understanding of social justice within each disciplinary pedagogical approach to teaching and learning. Reflections are presented according to the different disciplinary reflections. Reflective accounts are inherently subjective and may be influenced by personal biases, prior experiences and even elements of social desirability bias that may have been created during the TAU programme. Nonetheless, the authors were encouraged to review, clarify and refine their reflections to reduce potential bias.

Reflective Phase

Across disciplines, the challenges of embedding social justice in HE reflect deeper tensions identified by Freire (1970) and Hooks (1994). Traditional educational models often prioritise knowledge transmission over critical engagement, reinforcing hierarchical learning structures where students are passive recipients rather than active participants. This is particularly evident in legal education, where doctrinal approaches overshadow discussions of legal activism; in health sciences, where technical proficiency is emphasised over critical consciousness about health inequities; and in social work, where systemic barriers still undermine true emancipatory learning. By examining these disciplines through the lens of critical pedagogy, we explore how teaching can shift toward a more engaged, participatory, and justice-driven mode.

The authors' varied responses reflect a diverse understanding and nuances of social justice that is very much context-based. While each discipline engages with social justice in distinct ways, common themes emerge, particularly around the challenges of integrating participatory parity into pedagogy. The following reflections explore how these nuances shape students' learning experiences across disciplines.

Reflections From Law

The author from law maintained a more abstract and theoretical perspective, as opposed to the more contextual or philosophical understanding of social

justice articulated by other authors. The author's understanding may be explained with reference to the traditional emphasis on doctrinal learning in legal education. This outcome was also evident in the study by Davis and Steyn where academics from disciplines such as Engineering and Anthropology expressed similar views (Davis & Steyn, 2012). Social justice was initially understood as an approach to eliminating institutionalised domination and oppression and possibly referring to society's morally appropriate distribution of social benefits (and obligations). At the very least, social justice initiatives attempt to eliminate legal and otherwise conditions that produce structural inequality and exclusion. However, the imprecise nature of social justice and the lack of focus on its function during legal education complicates effective and meaningful interventions to use it as a vehicle for providing access to socially just legal education, addressing inequities, and promoting the interests of marginalised and vulnerable students. Teaching, therefore, primarily focused on the substantive law. Social justice issues were present in the learning and teaching, but their reach and impact were limited and incidental to the matters being taught. This approach was helpful as it ensured that students could find, interpret and apply the law in practice and thus navigate their future studies and professional careers. Nonetheless, legal education also incorporates several pedagogical strategies beyond pure theory to integrate social justice into legal education. These strategies include clinical legal education where students are exposed to the socio-political contexts in which laws operate through pro bono legal services under supervision, case-based interpretations of judgments that incorporate social justice issues and mock trials and moot courts, where students are required to engage with social justice arguments in a controlled, practice-based environment. Students are encouraged during moot court arguments to, apart from their doctrinal and critical analysis, also critically assess how court decisions impact marginalised groups. Social justice issues are also integrated into subjects such as constitutional law, human rights law and socio-economic rights law.

Compared to health sciences and social work, legal education presents a unique challenge: while it fundamentally deals with justice, its pedagogy often focuses on doctrine rather than fostering a critical, action-oriented approach to social justice. Unlike social work, where social justice is an explicit core principle, or health sciences, where patient equity is emphasised, law students may engage with social justice more abstractly unless exposed to clinical legal education or human rights-based courses.

Reflections From Health Care

Current reflections highlight that teaching social justice theory and practice in health science programmes is primarily content-driven. The emphasis is on helping students understand the context of applying the primary healthcare approach, the importance of patient- or client-centred care, and the responsibility to recognise and uphold the rights and dignity of those they serve. The assumption was that curricula with primary healthcare ideologies were adequate to drive a social justice agenda, given that the notion of social justice was already embedded in such approaches. Hence, the need to actively engage with elements of social justice outside of the known parameters for health care delivery was not seen as critical for teaching and learning, specifically in the basic sciences. Such engagement did not also consider the impact of learning on students' prior knowledge, preparedness, social exposure, upbringing, and innate beliefs and values. Likewise, the pre-set learning outcomes focus on the students' knowledge acquisition as the measurement scale to determine whether the student has met these learning standards. No emphasis is placed on positioning the learner within this context of person-centred healthcare delivery, nor is there any focus on how social justice should be applied to the learning context. However, a student-centred learning approach highlights the need for academics to recognise the impact of diverse socio-economic and cultural influences on learning and how this could result in students feeling marginalised or excluded from discussions that do not consider their lived experiences.

One of the authors identified social equity as one of the pillars of the primary healthcare approach, namely, inter-sectoral coordination, appropriate technology, and support mechanisms. Social equity focuses on fairness in providing health services. In contrast, social justice focuses on individual and communities' unmet health needs rather than using a utility-based approach (reaching the most significant number of people). It was clear that social justice has numerous and sometimes contradictory views. As a result, various perspectives emerged during the discussion between the authors. These divergent definitions reflect the value judgment of the person who proposes a specific interpretation. It was noted that social justice could include dimensions of culture, social inclusion, equality, and socio-economic rights. Social justice was thus a familiar concept for some of the authors. At the same time, there was also considerable discomfort about how social justice aspects could be incorporated into their teaching and curriculum ideologies.

In HE, access may appear equal, but institutions do not always effectively address underlying societal inequalities. Social justice is seen as a

principle that should be recognised and embedded across all aspects of HE institutions, with tangible evidence of social change.

Another author thought that lectures were merely an opportunity or space for teaching and learning needed for that specific subject. The author's prior view was to give information to students without necessarily letting students create change within that classroom setting. This view was inspired and adapted from how this author was taught, i.e., being fed with information and regurgitating the same information during assessments. It was noted that this practice does not allow students to apply critical thinking to the subject matter.

Social justice, in legal education and social work, has become an inherent professional obligation. In health sciences, social justice considerations are primarily patient-centred care (Cloninger et al., 2014). Social work students are explicitly taught advocacy strategies. However, medical and dental students may not always receive training on how to challenge systemic health inequalities, highlighting a gap in professional education.

Reflections From Social Work

The incorporation of a social justice pedagogy within social work is continuously emphasised to ensure that the students understand the integral elements of the Developmental Social Welfare Approach (DSWA). Otherwise, there would be a disjuncture in how theory is taught and how it should be implemented. It was, however, emphasised that this is very often an individual approach from an educator, but that there should be a stronger emphasis in the broader academy to ensure that concepts such as social justice do not get lost in theory. Embedding social justice in education would possibly ensure that it can be better integrated when graduates enter the workforce and ensure that all service users are treated in the same way that they experienced within the HE context.

Integrating social justice pedagogy in social work education is vital, especially in the South African context, where historical and structural inequalities continue to shape society. Ensuring that students deeply understand the core principles of the DSWA is crucial. Without this integration, there can be a significant gap between how social work theory is taught and how it is practically applied, potentially undermining the profession's goals. However, it is concerning that incorporating social justice in education often depends on the individual educator's commitment rather than being a consistent and intentional approach across the entire academic curriculum. This inconsistency risks marginalising critical concepts like social justice,

reducing them to theoretical discussions rather than actionable principles guiding practice.

To address this, there must be a broader, institution-wide emphasis on embedding social justice within the curriculum. When social justice is consistently and comprehensively integrated into social work education, it fosters a generation of graduates who are theoretically informed and practically equipped to apply these principles in the workforce. Such an approach ensures that service users are treated with the same dignity, equity, and respect that students experience in their HE context.

Social work education offers the most structured approach to social justice, embedding it directly into professional competencies. However, challenges persist, particularly around unpaid internships that disadvantage students from lower-income backgrounds. While law and health sciences face different barriers to integrating social justice, all three disciplines struggle with fully operationalising participatory parity in both education and professional practice.

Critical Emancipatory Phase

In pedagogic work, emancipation is often framed through the lens of Freire's critical pedagogy, where education serves as a transformative tool for both learners and educators. Freire (1970) argued that education must cultivate critical consciousness (conscientização), enabling individuals to recognise and challenge oppressive structures. This requires a shift from 'banking education' - where knowledge is deposited into passive students—to a participatory, co-constructive model of learning. Within the context of HE, an emancipatory approach would thus necessitate that both curriculum and teaching methodologies foster active engagement, critique, and social change. The reflections in this study reveal both successes and challenges in achieving this goal.

It was jointly agreed that social justice in HE should focus both on the content of learning and the context of learning. This realisation means that social justice should be infused into curriculum content. It was noted and questioned how these social justice concepts could be relevant for the student's overall growth and development. The inclusion of social justice should also address how educators ensure that the learning content considers the different social perspectives, worldviews, socio-cultural practices, and beliefs. This inclusion must reflect the voices of people and communities previously silenced through discriminatory practices. Additionally, it was noted that the student's context of learning must be considered, that is,

the extent to which the real world and lived experiences of students and communities are brought back into the learning environment.

Emancipatory Phase From a Law Perspective

A commitment to social justice in legal education must start with equitable access. Social justice further requires a profound understanding and appreciation of society's inequities and students' experiences. This insight demands legal education that fosters inclusion and an appreciation of the student's motivation to make a significant and continuing impact on marginalised, subordinated, and underrepresented persons in the future. Social justice issues must thus be incorporated into the curriculum so that students can understand and give effect to the proper function of social justice as a tool of justice.

Students must be encouraged to differentiate between law and justice and between what the law is and what the law could be. They must know and understand the substantive law, but should also be able to critique current law, especially where it is unjust or inadequate. They must also, despite the focus on knowledge of the law, appreciate the circumstances their potential clients will find themselves in, the impact of their decisions, and the accompanying potential ethical challenges. Legal educators, thus, should not completely separate the legal education process from the cultural and social narratives it creates. The law faculty must further ensure that the knowledge and skills taught and the research produced are accessible and valuable to the community that it serves. Legal education must thus incorporate elements that seek to address the unfair distribution of legal services and the inequitable access to legal representation by the most vulnerable. This aim can, in part, be achieved through the provision of effective pro bono legal services by the faculty and its graduates in the future. Ultimately, including social justice will enhance the learning opportunities for law students as they will be able to experience the application and benefits that the law offers from their personal experiences. Students aware of social justice issues can further appreciate the role and impact of law in society and how the law and legal institutions could be reformed to serve society better. These issues simultaneously address the community's needs by producing competent and ethically aware future legal practitioners (Ashford & McKeown, 2018).

While legal education introduces students to the concept of justice, it often falls short of fostering the critical consciousness that Freirean pedagogy envisions. Law students are trained in case law and legal reasoning, yet the curriculum does not always encourage them to interrogate how legal systems uphold structural inequities. For true emancipation, legal education

must move beyond knowledge transfer and cultivate a sense of social responsibility, equipping students to challenge unjust legal structures. Clinical legal education programmes, pro bono work, and interdisciplinary approaches may serve as avenues to promote a more transformative legal pedagogy.

Emancipatory Phase From a Health Care Perspective

Embedding social justice principles within the curriculum and translating them into transformative pedagogy practices requires a fundamental paradigm shift.

Expanding on the concept of "transformative pedagogy" in medical education from a healthcare perspective, the most effective teaching strategies for integrating social justice principles include:

- engaging students in community clinics, mobile health units, and underserved areas to expose them to health disparities first-hand;
- encouraging long-term partnerships with local communities to ensure sustainable, equity-focused interventions;
- requiring structured reflection to connect community experiences with systemic healthcare injustices;
- using real-world case studies that emphasise social determinants of health (e.g., housing instability, food insecurity, racial bias in treatment);
- presenting ethical dilemmas related to health equity, forcing students to critically engage with justice-oriented solutions;
- encouraging interdisciplinary collaboration (public health, social work, policy) to develop holistic, patient-centred care models;
- adopting Freirean methods that challenge students to question power dynamics in healthcare;
- using decolonial and intersectional approaches to examine how race, gender, disability, and socioeconomic status intersect in health outcomes;
- training faculty in anti-racist and inclusive teaching practices to ensure the curriculum actively dismantles bias rather than perpetuates it;
- teaching students to recognise how policies, institutions, and systemic forces shape health inequities; and
- integrating policy advocacy skills into the curriculum so students can engage in legislative and institutional reforms.

For one of the authors, this realisation marked a turning point: education should not merely impart knowledge but actively dismantle structural inequities. Teaching students about social justice while fostering community-driven initiatives—supported by academic institutions—ensures that education becomes a catalyst for systemic change rather than a passive transfer of information.

A commitment to equity in health sciences education is essential to equip future scientists and medical and health professionals with the skills to conduct research that directly addresses the needs of marginalised and underserved communities. One of the authors reflected on the imperative for medical students not only to develop clinical expertise but also to adopt a justice-oriented, holistic approach to patient care—one that acknowledges and addresses the broader social determinants of health. This framework moves beyond conventional medical and health sciences training, fostering a deep understanding of how systemic injustices shape patient experiences and health outcomes. By embedding this perspective into medical and health sciences education, students are empowered to advocate for and implement healthcare interventions that are inclusive, contextually relevant, and transformative.

Future healthcare professionals must critically engage with issues of social injustice, collaborate on problem-solving strategies, and integrate this awareness into their clinical practice. This approach extends beyond individual patient care to encompass structural advocacy, health equity, and meaningful community engagement. Medical and health sciences education must therefore prioritise continuous learning, reflective practice, and sustained mentorship to cultivate a generation of practitioners committed to dismantling healthcare disparities and championing social justice in all aspects of their work.

Historically, health sciences education has prioritised technical competence over the ethical imperative to address social injustices. A Freirean model of emancipation calls for a radical reimagining of this paradigm, one in which medical and dental students critically examine the societal and systemic factors that perpetuate health inequities. Only by centring participatory parity and structural transformation can health education produce professionals who are not only competent but also committed to equity, advocacy, and justice-driven healthcare for all.

Embedding social justice principles in the curriculum and bringing them to life in the classroom through well-thought-out pedagogy was a mind shift for one of the authors. The idea that students who are taught principles of

social justice and motivated to conduct student initiatives that improve the community and are supported by the academic institution makes sense. Adapting to a more equitable approach will provide the skills for basic scientists to conduct research that meets the community's needs. One of the authors reflected on the idea that medical students should not only develop the skills to assist patients facing social challenges but also adopt a holistic perspective on patient care. This approach encourages a broader educational framework that ultimately enables future healthcare professionals to consider individuals within the context of their communities, leading to more comprehensive and effective healthcare interventions. It was thus noted that this transformative approach to teaching with social justice principles will lead to a transformative practice that promotes good medical service that is inclusive to members of society from all walks of life.

Medical and health sciences students need to be more cognisant of social justice aspects in their profession, discuss collaborative problem-solving, and use the knowledge to provide quality health care for all members of society and promote health advocacy and community-based services. This should lead to the practice of social justice in clinical applications. There should be long-term, continuous learning, reflection on social awareness and a level of mentorship.

Health sciences education frequently focuses on technical competence rather than the social determinants of health and the ethical responsibility of healthcare practitioners to advocate for justice. A Freirean model of emancipation would require that medical and dental students critically engage with the societal factors influencing patient health outcomes. However, the structure of health education often prioritises clinical proficiency over critical consciousness. To achieve participatory parity and true emancipation, health sciences curricula must integrate service-learning and community-based approaches that encourage students to challenge inequities within healthcare systems and find pragmatic solutions collectively, for holistic healthcare delivery.

Emancipatory Phase From a Social Work Perspective

Likewise, social work focuses much on social justice and ensuring that all people, especially people from disadvantaged backgrounds, can have equal opportunities. Social justice is a core element in social work, but should be consciously included in the teaching and learning environment. Social justice is a key concept that forms part of the DSWA and is core to social work teaching. It is equally important to note what social justice means in the context of this teaching. When teaching at a university where students mostly come from disadvantaged communities, one needs to understand

the students' positionality, especially regarding access to resources. As an educator, one needs to continuously reflect on their own position and perception in relation to what the students bring' to the classroom. The biggest challenge is creating an environment in the class where the students can feel free to share their ideas and opinions. Thus, a social justice perspective creates a platform where students can participate equally regardless of background or origin.

Social justice in HE must consider supportive learning environments, relevant curricula, and student and educator preparedness for changes in the learning context. A supportive environment should encompass learning resources, different learning modes, infrastructure, and rapid response to sudden changes. Much has already been documented on the relevant curricula for learning, but this must also consider the need to re-examine the foundational blocks for learning. More emphasis should be placed on theory-driven learning that, in most cases, remains far removed from people's lived experiences. Hence, the theoretical underpinnings of learning must have the potential to translate into meaningful activities and tasks that enrich the learning experience.

Incorporating social justice into social work education is not merely an academic exercise but a necessary step to bridge the gap between theory and practice. It empowers future social workers to challenge and transform the systemic inequities they encounter, fostering a more just and equitable society. This holistic educational approach is essential in ensuring that social work professionals in South Africa are prepared to address the complex social issues they will face in their careers with a strong, unwavering commitment to social justice.

Social work education inherently aligns with emancipatory pedagogy, as it seeks to develop practitioners who challenge oppression and promote equity. However, institutional constraints, such as the requirement for students to complete unpaid internships, limit the extent to which social work students can fully engage in transformative practice. From a Freirean perspective, this creates a paradox: while students are trained to advocate for social justice, they may themselves be experiencing systemic exclusion due to financial barriers. Ensuring that social work education remains truly emancipatory requires structural changes that address these contradictions and enable all students to fully participate in their professional training.

Conclusions

This paper has demonstrated that while social justice principles are relevant across disciplines, their implementation in HE remains uneven and often

superficial. Drawing on Fraser's (2007) framework of participatory parity, our reflections reveal that economic barriers, cultural misrecognition, and institutionalised norms continue to hinder students from engaging as full and equal participants in their education. At the same time, Freirean perspectives on emancipation highlight the need for educators to go beyond content delivery and actively cultivate critical consciousness among students. This requires pedagogical approaches that disrupt traditional power hierarchies and encourage co-constructive learning experiences.

The broader significance of this study lies in its implications for educational transformation. If HE institutions in South Africa and beyond are to become truly inclusive, they must move beyond rhetorical commitments to social justice and embed these principles into curriculum design, assessment practices, and institutional policies. This includes rethinking funding models, ensuring equitable access to academic resources, and fostering interdisciplinary collaborations that dismantle silos between professional fields. The authors appreciate that these demands associated with social justice may be misinterpreted as creating the potential for forceful disruptive action by students, resulting in damage to property and the temporary termination of educational activities at HE institutions. The occurrences of such disruptive events are regarded as a consequence of the failure of HE institutions and students to critically engage with social justice issues in a participatory manner. The study also highlights the need for ongoing critical reflection among educators themselves. As academics, we must interrogate our positionality and the ways in which our disciplines either reinforce or challenge systemic inequities. Future research should explore how participatory parity can be practically implemented in various institutional contexts, as well as the structural changes needed to create truly emancipatory learning environments. Ultimately, achieving social justice in HE is not a finite goal but an ongoing process of engagement, resistance, and transformation. It is not enough to acknowledge disparities—there should be active efforts towards dismantling this. In doing so, the education system can progress and prepare students not only for professional success but also empower them as agents of social change.

Recommendations

From this critical reflective inquiry, the authors would like to make the following recommendations to other academics:

1) examine your assumptions, beliefs and values about social justice and human rights and how they influence your teaching;
2) explore the economic, historical, political and cultural contexts that shape the health and social issues and challenges faced by diverse groups of students, especially those who are marginalised and vulnerable;
3) recognise and address the power dynamics, biases and prejudices that exist within and outside a classroom and how they affect the access, participation and outcomes of students from diverse backgrounds and needs;
4) seek feedback and input from students on how to improve the quality, relevance and impact of one's teaching about social justice in health sciences;
5) engage in continuous learning, dialogue and action to enhance one's knowledge, skills and attitudes in social justice in health sciences and contribute to advancing social justice in HE.

References

Achieving the Dream (ATD) in partnership with Every Learner Everywhere. (2023). 'Abilities'. *https://www.everylearnereverywhere.org/resources/putting-equity-into-practice-social-justice-education/*

Ashford, C., & McKeown, P. (eds.). (2018). *Social justice and legal education*. Cambridge Scholars Publishing.

Bhagwan, R. (2017). Towards a conceptual understanding of community engagement in higher education in South Africa. *Perspectives in Education, 35*(1), 171-185.

Behera, B. K., Prasad, R., & Shyambhavee, B. (2022). Primary health-care goal and principles. In *Healthcare strategies and planning for social inclusion and development* (pp. 221–239). Elsevier. doi:10.1016/B978-0-323-90446-9.00008-3

Bozalek, V., & Zembylas, M. (2019). Perceptions of socially just pedagogies in higher education. In G. Maré (ed.). *Race in education. https://www.researchgate.net/publication/339957280*

Braveman, P. A., Kumanyika, S., Fielding, J., LaVeist, T., Borrell, L. N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: The issue is justice. *American Journal of Public Health, 101*(S1), 149–155.

Caron, R. M., Noel, K., Reed, R. N., Sibel, J., & Smith, H. J. (2023). Health promotion, health protection, and disease prevention: Challenges and opportunities in a dynamic landscape. *AJPM Focus, 3*(1), 1. doi:10.1016/j.focus.2023.100167

Chamany, K., Allen, D., & Tanner, K. (2008). Making biology learning relevant to students: Integrating people, history, and context into college biology teaching. *CBE—Life Sciences Education, 7*(3), 267–278.

Cloete, N., & Maassen, P. (eds.). (2015). *Governance and the South African higher education sector: Towards a research agenda*. African Minds.

Cloninger, C. R., Salvador-Carulla, L., Kirmayer, L. J., Schwartz, M. A., Appleyard, J., Goodwin, N., Groves, J., Hermans, M. H., Mezzich, J. E., Van Staden, C. W., & Rawaf, S. (2014). A time for action on health inequities: Foundations of the 2014 Geneva Declaration on person-and people-centered integrated health care for all. *International Journal of Person Centered Medicine, 4*(2), 69.

Connors, K., & Seifer, S. D. (2008). *Reflection in Higher Education Service-Learning. https://www.usf.edu/engagement/documents/reflection-in-he-sl-fs-short-sept08.pdf*

Council for Higher Education (CHE). (2007). *Review of Higher Education in South Africa. http://www.che.ac.za*

Davis, R. K., Grobbel, C., Mallette, C., & Poly-Droulard, L. (2020). Social justice as an expression of caring through holistic admissions in a nursing program: A proposed conceptual model., *Nursing Forum, 55*(4), 723–729. doi:10.1111/nuf.12489

Davis, D., & Steyn, M. (2012). Teaching social justice: Reframing some common pedagogical assumptions. *Perspectives in Education, 30*(4), 29–38.

De Kadt, E. (2020). Promoting social justice in teaching and learning in higher education through professional development. *Teaching in Higher Education, 25*(7), 872–887. doi:10.1080/13562517.2019.1617685

Department of Higher Education and Training (DHET). (2017). *White Paper for post-school education and training*. Government of South Africa.

Department of Social Development (DSD). (2013). *Framework for social service delivery*. Government of South Africa.

Dominelli, L. (2017). *Anti-oppressive social work theory and practice*. Bloomsbury Publishing.

Essop, A. (2021). COVID-19: The "new normal" and the future of higher education. *https://www.uj.ac.za/wp-content/uploads/2021/09/covid-19-and-the-future-of-higher-education.pdf*

Fraser, N. (2007). Identity, exclusion, and critique: A response to four critics. *European Journal of Political Theory, 6*(3), 305–338.

Freire, P. (1970). Cultural action and conscientization. *Harvard Educational Review, 40*(3), 452-477.

Geldenhuys, J. L., & Oosthuizen, L. C. (2015). Challenges influencing teachers' involvement in continuous professional development: A South African perspective. *Teaching and Teacher Education, 51*, 203–212. doi:10.1016/j.tate.2015.06.010

Gorski, P. C., & Dalton, K. (2019). Striving for critical reflection in multicultural and social justice teacher education: Introducing a typology of reflection approaches. *Journal of Teacher Education, 71*(3), 357-368. https://doi.org/10.1177/0022487119883545 (Original work published 2020)

Habibzadeh, H., Jasemi, M., & Hosseinzadegan, F. (2021). Social justice in health system; a neglected component of academic nursing education: A qualitative study. *BMC Nursing, 20*, 1–9.

Hooks, B. (1994). *Teaching to transgress: Education as the practice of freedom*. Routledge.

Jabyn, M. (2020). Advancing justice interests and human rights of vulnerable groups through clinical legal education. *Jindal Global Law Review, 11*, 271–288. doi:10.1007/s41020-020-00127-0

Jacobsen, K. H., & Waggett, C. E. (2022). Global health education for the post-pandemic years: Parity, people, planet, priorities, and practices. *Global Health Research and Policy, 7*(1), 1.

Kawai, T. (2021). A theoretical framework on reflection in service learning: Deepening reflection through identity development. *Frontiers in Education*. doi:10.3389/feduc.2020.604997

Kim, H. S. (1999). Critical reflective inquiry for knowledge development in nursing practice. *Journal of Advanced Nursing, 29*(5), 1205–1212. doi:10.1046/j.1365-2648.1999.01005.x

Krieger, N. (2005). Embodiment: A conceptual glossary for epidemiology. *Journal of Epidemiology & Community Health, 59*, 350–355.

Krieger, N. (2011). *Epidemiology and people's health: Theory and context*. Oxford University Press.

Lepp, L., Aaviku, T., Leijen, Ä., Pedaste, M., & Saks, K. (2021). Teaching during COVID-19: The decisions made in teaching. *Education Sciences, 11*(2), 47. https://doi.org/10.3390/educsci11020047

Lewis J. H., Lage, O. G., Grant, B. K., Rajasekaran, S. K., Gemeda, M., Like, R. C., Santen, S., & Dekhtyar, M. (2020). Addressing the social determinants of health in undergraduate medical education curricula: A survey report. *Advances in Medical Education and Practice,* pp. 369-77. May 22.

Luckett, K., & Naicker, V. (2019). Responding to misrecognition from a (post)/colonial university. *Critical Studies in Education, 60*(2), 187-204.

Madonsela, T., & Lourens, M. (2021). *Social Justice in South Africa. Leverage the Sustainable Development Goals and the Global Human Rights Agenda to advance Social Justice*. Cape Town. Stellenbosch University.

Mailloux, C. G. (2011). Using the essentials of baccalaureate education for professional nursing practice (2008) as a framework for curriculum revision. *Journal of Professional Nursing, 27*(6), 385-389.

Maurizio, M. (2015). Epigenetics for the social sciences: Justice, embodiment, and inheritance in the postgenomic age. *New Genetics*

and Society, 34(2), 125-151, DOI: 10.1080/14636778.2015.1034850.
McPhail, C. J. (2021). Fostering social justice in higher education. https://www.diverseeducation.com/institutions/community-colleges/article/15108962/fostering-social-justice-in-higher-education
Miller, J. M., Ford, S. F., & Yang, A. (2020). Elevation through reflection: Closing the circle to improve librarianship. *Journal of the Medical Library Association: JMLA*, *108*(3), 353–363. https://doi.org/10.5195/jmla.2020.938.
Mollenkamp, D. T. (2022). Social justice meaning and main principles explained. https://www.investopedia.com/terms/s/social-justice.asp.
Nieto, J. (2006). The cultural plunge: Cultural immersion as a means of self-awareness and cultural sensitivity among student teachers. *Teacher Education Quarterly*, *33*(1), 75-85.
Nutbeam, D., Corbin, J. H., & Lin, V. (2021). The continuing evolution of health promotion. *Health Promotion International, 36*(Supplement1), i1– i3. https://doi.org/10.1093/heapro/daab150
Rukadikar, C., Mali, S., Bajpai, R., Rukadikar, A., & Singh, A. K. (2022). A review on cultural competency in medical education. *Journal of family medicine and primary care*, *11*(8), 4319–4329. https://doi.org/10.4103/jfmpc.jfmpc_2503_21.
Schiff, T., & Rieth, K. (2012). Projects in medical education: "Social Justice in Medicine" - a rationale for an elective program as part of the medical education curriculum at John A. Burns School of Medicine. *Hawai'i Journal of Medicine & Public Health: A Journal of Asia Pacific Medicine & Public Health*, *71*(4 Suppl 1), 64–67.
Sehoole, C., & Adeyemo, K. S. (2016). Access to, and success in, higher education in Postapartheid South Africa: Social justice analysis. *Journal of Higher Education in Africa/Revue de l'enseignement Supérieur En Afrique*, *14*(1), 1–18.
http:// www.jstor.org/stable/90016098
Sivanath, A., 2020. Teaching and learning challenges of disadvantaged students in the context of access and equity in South African higher education: A case study of the Durban University of Technology (Doctoral dissertation).
South African Council for Social Service Professions (SACSSP). (n.d). *Policy guidelines for course of conduct, code of ethics and rules for social workers*. https://www.sacssp.co.za/
Venkatapuram, S., & Marmot, M. (2009). Epidemiology and social justice in light of social determinants of health research. *Bioethics*, *23*(2), 79–89.
Quinn, L. (2012). Introduction. In L. Quinn (ed., pp. 1-13), *Reimagining academic staff development*. Sun Press.

Zungu, B. P. (2022). *Socio-economic and academic challenges faced by black undergraduate students from disadvantaged backgrounds at the Wits School of Education*. University of the Witwatersrand.

Constitution

Constitution of the Republic of South Africa, 1996

Jurisprudence

Dawood v Minister of Home Affairs 2000 (3) SA 936
Everfresh Market Virginia (Pty) Ltd v Shoprite Checkers (Pty) Ltd 2012 (1) SA 256 (CC)
S v Makwanyane 1995 (6) BCLR 665

Students Speak: Do College Exit Exams Unleash Motivation or Fuel Stress?

Feyisa Mulisa and Mekonnen Kejela

Abstract

College exit exams serve as indicators of students' academic achievement and career readiness. However, a significant concern is the stress these exams may impose on students. Some students may also question the usefulness of these exams, which can negatively affect their performance. The purpose of this article is to assess students' perceptions of the relevance, validity, motivation, the ability to promote self-awareness, and the stress associated with exit exams. To gather data, we administered questionnaires and conducted interviews with 113 students who had taken an exit exam at Ambo University. The findings indicate that students generally have moderately positive perceptions regarding the relevance and validity of the exit exams. Additionally, the exams were found to be highly motivating and effective tools for identifying individual strengths and weaknesses. While this positive perception is an opportunity to increase the effectiveness of the exam, the paradox is that it is stressful for female students. Therefore, it is essential to pay special attention to the experiences of female students. The implication is that by considering students' experiences, we can create a supportive and inclusive environment that promotes academic achievement and overall well-being.

Key words: exit exam, students' perceptions, relevance, motivations, stress

ABOUT THE AUTHORS:: FEYISA MULISA, email: fayisamu@gmail.com, and MEKONNEN KEJELA, Email: kejelamekonnen@yahoo.com, Ambo University, Ethiopia

Mulisa, F., & Kejela, M. (2025). Students Speak: Do College Exit Exams Unleash Motivation or fuel stress?. *International Journal of African Higher Education, 11*(3), 108-127. https://doi.org/10.6017/ijahe.v11i3.17271

Résumé: Les examens de fin d'études servent d'indicateurs de la réussite scolaire et de la préparation à la carrière des étudiants. Cependant, le stress que ces examens peuvent imposer aux étudiants est une préoccupation importante. Certains étudiants peuvent également remettre en question l'utilité de ces examens, ce qui peut avoir un impact négatif sur leurs performances. L'objectif de cet article est d'évaluer les perceptions des étudiants quant à la pertinence, la validité, la motivation, la capacité à promouvoir la conscience de soi et le stress associé aux examens de fin d'études. Pour recueillir les données, nous avons administré un questionnaire et mené des entretiens avec 113 étudiants ayant passé un examen de fin d'études à l'université d'Ambo. Les résultats indiquent que les étudiants ont généralement une perception modérément positive de la pertinence et de la validité des examens de fin d'études. En outre, les examens se sont révélés être des outils très motivants et efficaces pour identifier les forces et les faiblesses individuelles. Si cette perception positive permet d'accroître l'efficacité de l'examen, le paradoxe est qu'il est stressant pour les étudiantes. Il est donc essentiel d'accorder une attention particulière aux expériences des étudiantes. La conséquence est qu'en prenant en compte les expériences des étudiants, nous pouvons créer un environnement favorable et inclusif qui favorise la réussite scolaire et le bien-être général.

Mots clés: examen de fin d'études, perceptions des étudiants, pertinence, motivations, stress

Introduction

An exit exam is a type of assessment that students must complete to graduate from a specific level of education, such as high school or college (El-Hassan et al., 2021). These exams are primarily designed to evaluate students' mastery of the curriculum and their readiness to advance to the next stage of their academic or professional careers (Ayenew & Gebre Yohannes, 2022; Holme et al., 2010; Schumacker et al., 2021). However, exit exams are also controversial, as they can negatively affect students' performance and well-being (Hall et al., 2020; Holme et al., 2010; Machin et al., 2020). For instance, some authors, such as El-Hassan et al. (2021) and Maag Merki & Holmeier (2015), argue that these exams are essential to ensure that students possess the knowledge and skills necessary for success in university and beyond. Conversely, other authors contend that exit exams provide minimal benefits, do not contribute to students' academic goals, or may even hinder their performance (Hall et al., 2020). Overall, exit exams are a prevalent yet contentious practice within educational systems. Therefore, it is crucial to assess their advantages and disadvantages from

the perspectives of various stakeholders. The purpose of this study is to explore the pros and cons of exit exams from the students' viewpoint by examining their usefulness, including relevance, validity, motivation, and the stress they impose on students. By offering insights into how students perceive exit exams, this study will serve the interests of a diverse range of stakeholders, including administrators and policymakers.

While the usefulness of the exit exam is represented by four factors, the first factor is the relevance of the exam. Relevance is defined as the degree to which the exam content aligns with the learning objectives, industry standards, and the practical application of the study in the field (Holme et al., 2010; Palmer et al., 2010). It is contingent upon the overall usefulness of the exams in measuring essential educational goals as well as societal needs and expectations (Al Ahmad et al., 2014; Hall et al., 2020). For instance, a relevant exit exam in a computer science programme would evaluate a student's ability to write code, design algorithms, and troubleshoot software applications. The rationale is that students' perceptions of the relevance of exams can significantly influence their preparation and final performance (Reardon et al., 2010; Schlemer & Waldorf, 2010). Understanding the relevance of exit exams is crucial for developing accurate and comprehensive exams that measure students' proficiency in the subject matter and prepare them for success in their future careers (El-Hassan et al., 2021; Langford & Young, 2013).

The validity of the exit exam, on the other hand, pertains to how accurately the exam questions measure the knowledge, skills, and attitudes that students have acquired from their curriculum (Al Ahmad et al., 2014; El-Hassan et al., 2021; Holme et al., 2010). It is about the proper alignment of exam questions with curriculum objectives, such as knowledge, attitudes, and skills. The focus of the exam's validity is on its psychometric robustness (Palmer et al., 2010). This involves ensuring that each item on the exam effectively measures the intended knowledge, skills, and attitudes of the students and that the questions are representative of the learning objectives of the subject (Langford & Young, 2013). For instance, a valid nursing exit exam includes specific and detailed questions that assess the student's clinical skills, knowledge of medical terminology, and ability to communicate effectively with patients and colleagues. Although relevance and validity are related terms, they are operationally defined differently in this study. While relevance refers to the overall practicality and applicability of the exam in real-world practice, validity denotes the degree of accuracy and appropriateness of each question in measuring various dimensions of the learning objectives.

There is also evidence indicating that exit exams affect students' motivation in their academic pursuits (Al Ahmad et al., 2014; Brodersen & Lorenz, 2020; Hall et al., 2020). Motivation refers to the way exit exams drive students to be diligent in their studies by establishing clear expectations, holding them accountable for their learning, and preparing them for the future. Furthermore, exit exams can serve as a tool to help students identify their strengths and weaknesses by facilitating comparative analysis and promoting self-reflection (Holme et al., 2010; Jürges et al., 2012; Reardon et al., 2010). It is also noteworthy that the stress associated with exit exams is recognised as one of their side effects (Brodersen & Lorenz, 2020), which has been considered together with the four factors of the usefulness of exit exams. For instance, a recent study found that students with higher test anxiety scored significantly lower on the exit exam (Moore et al., 2021).

Review of Literature

The implementation of exit exams has been a contentious issue among educators, policymakers, and researchers for many years (French et al., 2024). Evidence suggests that exit exams are essential for achieving the objectives of institutions, programmes, and courses worldwide (Aniley, 2022). However, critics argue that these exams often disproportionately affect certain students, particularly minority and low-income students, who may lack access to high-quality educational resources (Al Ahmad et al., 2014; Brodersen & Lorenz, 2020; Marsidi, 2021). As a result, exit tests have been criticised for perpetuating existing educational inequalities and limiting opportunities for some students.

Despite these criticisms, proponents of exit exams argue that they ensure students are adequately prepared for the demands of post-secondary education or the labor market, providing a crucial level of accountability (Crave & Balestra, 2018). Greene and Winters (2005) assert that exit exams enhance students' performance, particularly in reading and mathematics. However, other scholars have raised concerns about the potential of teaching for the test and the emphasis on standardised test scores, which can result in the neglect of other essential learning outcomes, such as creativity and critical thinking (Kohn, 2000). Furthermore, students may experience significant stress and anxiety due to high-stakes exit tests, which can adversely affect their academic performance and overall well-being (Nichols & Berliner, 2007).

One of the primary concerns among scholars regarding exit exams is their validity and reliability. According to Boroumandfar et al. (2016), exit exams often lack content validity, which refers to the ability to accurately measure

the knowledge, skills, and attitudes relevant to post-secondary education or the labor market. Additionally, various factors, including socioeconomic, environmental, and cultural aspects, can influence the accuracy of these exams (Carmen, 2011). As a result, scholars have advocated for the inclusion of more comprehensive and nuanced assessments of student learning, such as performance tasks and portfolio assessments, alongside exit exams (Wiggins, 1998).

Another area of interest for researchers is the impact of exit exams on student motivation and commitment. A study by Brodersen and Lorenz (2020) found that exit exams can undermine motivation and interest in learning. The high-stakes nature of these exams may create a sense of pressure that detracts from students' performance, leading to a focus on exam preparation rather than genuine learning and understanding (Demir and Keles, 2021). Furthermore, exit exams can contribute to labeling, where students who fail the test are branded as 'failures,' which may discourage them and lead to withdrawal from the educational process (Valencia, 2010). In contrast to these ideas, Hagos (2019) questions whether graduates of Ethiopian higher education possess the essential skills and proposes to introduce exit exams as evidence of students' competencies and to improve the quality of higher education.

In general, the literature on exit exams indicates that, while these assessments can offer certain advantages, such as enhancing accountability and ensuring that students are adequately prepared for higher education or the workforce—they also present several limitations. These limitations include the potential for teaching of the exam, the limited relevance of standardised test scores to real-world applications, and the detrimental effects on student motivation and engagement. Therefore, educational stakeholders should exercise caution when implementing exit exams and consider alternative assessment methods, such as performance-based and competency-based assessments, which emphasise in-depth learning and understanding over rote memorisation and testing (Demir and Keles, 2021). This approach would foster a fairer and more effective education system that equips students for success in the twenty-first century.

Research Questions

Given that exit exams can have both positive and negative impacts on students, this research aims to address the following specific questions: (a) How do students who took the exit exam perceive its usefulness, including aspects such as relevance, validity, motivating power, and self-awareness? (b) Is there a statistically significant difference in perception of exit exams based on sex? (c) Can the stress caused by exit exams be predicted based on students' perceptions of the exam's relevance, validity, motivation, and self-awareness?

Methods

This study aimed to assess the usefulness of the exit exam from the students' perspectives. It employed a mixed-methods research approach utilising an explanatory sequential design (Creswell & Creswell, 2018). The study population comprised regular undergraduate students who took the exit exam at Ambo University in July 2023. Participants for quantitative data collection were selected using a stratified random sampling method, while a convenience sampling method was employed to select participants for the interviews.

We initially planned to administer 280 copies of a questionnaire using CheckMarket's sample size calculator (https://www.checkmarket.com/sample-size-calculator/). The calculation was performed with a 5% margin of error and a 95% confidence level. To achieve the desired number of participants, we distributed 300 copies of the questionnaire. However, we were only able to collect 208 completed questionnaires. Upon screening the returned copies, we found that 106 were defective or invalid. Given the limited number of initial respondents, we aimed to enhance our understanding of the phenomenon by gathering more nuanced and detailed data. Following the questionnaire data collection, we conducted in-depth interviews with eleven participants to gain a more comprehensive understanding of the relevant factors. In total, 113 participants contributed to this study. Participants included students from five academic streams and fourteen departments. In terms of gender composition, 62 males and 40 females participated in the quantitative portion of the study. Among the 11 interviewees, seven were female and four were male, representing students from eight different departments.

The researchers designed the questionnaire, which underwent rigorous validation through a combination of pilot testing and peer review. A pilot study was conducted with a sample of 33 participants, and the results were evaluated and refined by three expert reviewers. This pilot phase enabled us to validate the questionnaire and make necessary adjustments before proceeding with the main study. The original questionnaire consisted of 32 items, which were subsequently refined through pilot tests to eliminate items that did not significantly contribute to the study. Ultimately, 7 items were removed, resulting in a final questionnaire comprising 25 items.

After the pilot study, we conducted a Kaiser-Meyer-Olkin (KMO) test to evaluate the adequacy of the sample and confirmed that the data were suitable for factor analysis (KMO = 0.64). Subsequently, as part of the pilot study, we performed an exploratory factor analysis to identify the primary factors of the questionnaire. The objective was to group similar items to create meaningful factors that could effectively capture the essence of respondents' perceptions. We employed Varimax rotation for the retained factors to simplify the structure of the coefficients and facilitate the interpretation of the results. The factor loadings were examined to determine the patterns of item correlations. Items with a loading of 0.4 or higher on a specific factor were considered part of that factor.

After analysis, five distinct factors emerged: the relevance of the exam, the validity of the exam, motivation, self-evaluation, and the stress it induces. Relevance: This factor encompassed items related to the perceived usefulness, importance, and applicability of the exam to the respondents' lives or careers. Validity: This factor included items that assessed respondents' perceptions of the exam's ability to measure various domains of learning objectives, the accuracy of the exam questions, and the fairness of the content covered in the curriculum. Motivation: This factor comprised items related to respondents' enthusiasm for preparing for and performing well on the exam, including goal-oriented behaviors. Self-awareness: This factor consisted of items that measured respondents' perceptions of whether the exam helped them understand their strengths and weaknesses during their time in college. Stress: This factor included items measuring respondents' anxiety, tension, and emotional distress regarding the test.

Finally, a questionnaire consisting of 25 items was employed, utilising a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) to assess the various factors. Each of the five variables in the study was evaluated using four to five items. We also assessed the reliability of the instruments using Cronbach's alpha formula, yielding the following results: Relevance = 0.903, Validity = 0.862, Motivation = 0.868, Stress = 0.901, and Self-awareness = 0.853. Given that the study design followed an explanatory sequential method, an interview protocol was developed and implemented to explore students' perceptions and experiences regarding the exit exam. This protocol was informed by themes derived from the literature review and the questionnaire results. The interviews were unstructured and lasted approximately 15 to 25 minutes per participant. Each interview was recorded and transcribed for subsequent analysis.

Quantitative data analysis was conducted using SPSS version 23. Descriptive statistics were employed to assess the ratings of questionnaire items related to relevance, validity, motivation, self-awareness, and stress. Additionally, a t-test was performed to compare the mean values of the variables measured by the questionnaire items, specifically examining gender differences between male and female students. Furthermore, correlation and regression were utilised to evaluate the relationships among the five variables addressed in this study. The interview data were analysed through thematic analysis, with transcripts coded and organised into themes and subthemes.

Based on the work of Oldenmenger et al. (2013), the mean value of the rating scale scores is classified as follows: a score between 3.75 and 5 indicates a high response, while a score between 2.25 and 3.74 is classified as medium, and a score from 1 to 2.4 is considered low for a single rating item. However, the specific values for each factor of the exit exam's relevance vary depending on the number of items included in each factor. Nonetheless, the general approach to establishing threshold values is based on the range of scores obtained from a five-point scale. A higher score suggests that the student perceives the exam as more relevant. A correlation matrix and regression analysis have been employed to explore the relationships between variables, enabling us to understand how changes in one variable relate to others. These analyses facilitate the identification of potential synergies and trade-offs, providing valuable insights into how modifications in one variable can impact related variables.

To ensure that data collection was conducted ethically, we did not pressure participants to participate in this study; rather, we invited everyone to take part voluntarily. We provided them with information about the study's purpose and how their data would be utilised. Additionally, we obtained oral consent from participants before collecting any data, as they were adults and the study posed no risk of harm to them. We assured them that their data would be treated confidentially and anonymously. We adhered to the ethical guidelines and standards for data collection established by our institution and relevant regulatory authorities. Overall, we ensured that the data collection process was conducted fairly and ethically, respecting the rights and autonomy of the participants. They were also given the option to withdraw from the study at any time without facing any consequences.

The present study has some limitations that should be acknowledged. First, the data collection process was constrained by time due to student withdrawals, which restricted the ability to recruit additional participants

and resulted in some incomplete data. This limited sample size and potential selection bias may have impacted the generalizability of the findings. Second, the data collection occurred during a period of intense media coverage and public opinion, which may have led to a distorted or biased perception of the exam. As a result, the perceptions and attitudes of students regarding the exit test may not be entirely objective, but rather influenced by prevailing public sentiment and media narratives

Findings

In this section, we examine the results of the study from students' perspectives regarding the usefulness of exit exams, presented in both numerical and narrative formats. Analysing these findings may enhance our understanding of how students perceive the subject.

Table 1: Descriptive Statistics of Students' Perception of the Pertinence of the Exit Exam

Variables	Frequency	Minimum	Maximum	Mean	Standard deviation	Response category
Relevance	93	6	30	21.06	6.09	Moderate
Validity	98	5	25	14.76	4.95	Moderate
Motivation	90	5	25	18.78	4.98	High
Self-awareness	101	4	20	15.37	4.01	High
Stress	96	5	23	15.40	3.92	Moderate

A descriptive statistical analysis of the study is presented in Table 1. The data illustrate how students perceive the usefulness of the exit exam across four factors as well as its stress-related issues. The frequency column indicates the number of students who responded to each scale item. The minimum and maximum columns display the lowest and highest scores recorded. The mean column represents the average score of students for items measuring each factor. The standard deviation column indicates the extent to which the scores deviate from the mean. The response category column classifies the mean score for each variable into three levels.

When considering students' perceptions of the relevance of the exit exam, the mean score for relevance is (M = 21.06), with a standard deviation is (S.d. = 6.09). This indicates that the majority of students (68%) view the exit exam as moderately relevant to the curriculum. However, the standard deviation of 6.09 suggests a diversity of opinions on this matter. Some

students may have found the exam to be highly relevant, while others may have deemed it to be of little relevance.

Regarding the validity of the exam, the mean score is 14.76, with a standard deviation is 4.95. This suggests that most students (60%) perceived the exit exam as moderately valid in measuring student learning. However, the high standard deviation indicates a wide range of perceptions, with some students considering the test very valid while others viewed it as less valid. Although there were no complaints from students regarding the exam's relevance, significant concerns were raised about its validity. For instance, a participant from the Industrial Engineering programme reported that part of their exam was copied directly from the internet and did not align with the exam blueprint. In the words of the participant:

> To prepare for the exit exam, I practiced with questions available online. Fortunately, the same questions appeared on the exit exam, making it relatively easy for me. Almost everyone who did not practice with the online questions failed the exit exam. Therefore, I suggest that the exam be genuinely curriculum-based and capable of assessing students' professional competence.

Similarly, a participant from the Department of Educational Planning and Management provided the following response:

> I have successfully passed the exit exam. I attribute my success to the fact that I did not limit my preparation to just the blueprint. Had I concentrated solely on the blueprint, like some of my peers, I doubt I would have passed the exam. Instead, I embraced a comprehensive approach, diligently studying all the courses without any restrictions. This commitment to my studies is why I achieved success. Many students who focused exclusively on the blueprint did not pass.

Regarding the motivating effect of the exit exam, the mean score is 18.78, indicating that a majority of students (78%) felt motivated by the exam. This suggests that students generally perceive the exit exam as a strong incentive to work diligently to pass. This is a positive finding, as it implies that students are largely in favor of exit exams. However, there was a range of opinions on this matter, with a standard deviation of 4.98, indicating that some students were not motivated to take the exam.

The data related to self-awareness indicates that the mean score is 15.37, demonstrating that the majority of students (76%) felt the exit exam provided

them with a better understanding of their strengths and weaknesses as learners. This is a positive finding, as it suggests that students believe exit exams can be beneficial for promoting self-sufficiency. However, the standard deviation of 4.01 indicates that some students may not have felt that the exam accurately assessed their academic capabilities.

The mean stress score is 15.4, indicating that the majority of students (72%) found the exam to be moderately stressful. The standard deviation of 3.92 suggests a wide range of perspectives on this issue. This implies that while some students may experience significant stress regarding the exam, others may feel little to no stress at all. Factors contributing to this stress may include students' anxiety about the exam, their perception of its importance, and their confidence in their abilities. Overall, a descriptive statistical analysis of the data reveals that students generally view the exit exam positively, although it is also associated with stress.

Table 2: Sex Differences in the Students' Perceptions of the Exit Exam

Variables	Male		Female		Df	T-value	P-value	Cohen d-test
	FQ	Mean	FQ	Mean				
Relevance	49	22.04	34	19.47	81	1.92	0.58	0.43
Validity	59	17.29	39	15.95	96	1.32	0.19	0.27
Motivation	53	18.77	37	17.41	88	1.29	0.20	0.28
Self-awareness	61	15.18	40	13.13	99	2.59	0.01	0.53
Stress	50	14.12	36	16.36	84	-1.32	0.04	0.32

The results of an independent t-test examining gender differences in student perceptions of the usefulness of the exit exam are presented in Table 2. The findings indicate a significant difference only in the factors of self-awareness and stress. With a 95-percent confidence interval, the values are likely to encompass the true difference in mean scores between the two groups. This suggests that the true mean difference in self-reported self-awareness lies between 13.13 and 15.18 points, while the difference in stress levels ranges from 14.12 to 16.36 points.

In other words, the t-test results indicate statistically significant gender differences in student perceptions of the exit exam regarding two variables: self-awareness and stress. Males had a higher mean score than females in self-awareness, while females had a higher mean score than males in stress. This suggests that the exam made males more aware of their strengths and weaknesses compared to females and that they experienced greater stress than their male counterparts. These differences can be attributed to various factors, including a sense of competence, social expectations, gender stereotypes, and the unique educational challenges that women face.

To supplement these findings, data collected through interviews further supports the results. For instance, one female participant from the Department of Accounting and Finance stated:

> Our families eagerly anticipate our graduation and securing employment. If we fail this exam, our families' hopes will be in vain. Once again, we risk becoming a financial burden to them. Therefore, we have a significant amount of work ahead of us. Some of my friends are feeling extremely stressed and anxious about this exit exam.

A participant from the Pharmacy Department also stated that the exit exam was not beneficial to her and that she did not perceive any added value in the exam. She said:"We have a comprehensive exam to take. Consequently, I believe that preparing for this exam is a waste of time and effort. It neither enhances my knowledge and skills nor benefits my profession; instead, it only adds to my stress."

Table 3: Correlations Among Students' Perceptions of Exit Exam Outcomes

	Relevance	Validity	Motivation	Self-awareness	Stress
Relevance	1				
Validity	0.592**	1			
Motivation	0.705**	0.670**	1		
Self-awareness	0.657**	0.711**	0.750**	1	
Stress	0.298*	0.243*	0.389**	0.249*	1

Correlation is significant at the 0.01 level (2-tailed).
Correlation is significant at the 0.05 level (2-tailed).

The correlation coefficients between students' perspectives on relevance, validity, motivation, self-awareness, and the stress induced by the exit exam are presented in Table 3. The objective of this analysis is to understand the strength of the relationships among the factors of the study. The findings indicate that all correlation coefficients are positive, although not all are strong. The strongest correlations are observed between relevance and validity (r = 0.592), motivation and relevance (r = 0.705), self-awareness and relevance (r = 0.657), motivation and validity (r = 0.670), validity and

self-awareness (r = 0.711), and motivation and self-awareness (r = 0.750). These strong correlation coefficients suggest significant relationships among the factors under investigation.

The relevance of the exit exam is positively associated with its validity and students' self- awareness. This suggests that when the exit exam is perceived as relevant, it is also viewed as more valid, leading to a greater understanding of oneself. Furthermore, the correlations indicate a strong positive relationship between motivation, relevance, and self-awareness, suggesting that students who are highly motivated by the exit exam are more likely to perceive it as relevant and to have a better understanding of themselves.

Table 4: Predicting Stress by Exit Exam fromExit Exam Outcomes

	Coefficient	Beta	SE	p-value	R^2-value
Predictors	9.988		1.755	.000	0.151
Relevance	.054	.084	.105	.613	
Validity	.029	.006	.138	.998	
Motivation	.326	.416	.147	.030	
Self-awareness	-.126	-.134	.196	.522	

Dependent Variable: stress
Predictors: self-awareness, relevance, validity, motivation

The data presented in Table 4 illustrate the results of multiple regression analysis, indicating that students' perceptions of the utility of exit exams—specifically relevance, validity, motivation, and self-awareness —predict their stress levels. The table includes the coefficient, beta value, standard error (SE), p-value, and R^2 value for each predictor. The constant is 9.988, which suggests that if the exit exam were not perceived as relevant, valid, motivating, or insightful, the average stress level would be 9.988 according to the following regression model: $y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + e$. This model can be expressed as stress = 9.988 + relevance (0.054) + validity (0.029) + motivation (0.326) + self-awareness (0.126) + 1.755.

The multiple regression coefficient for the relevance variable is 0.054, indicating that for every one-unit increase in the relevance of the exit exam, the stress level is expected to decrease by 0.054 units. However, the p-value for this coefficient is 0.613, which exceeds the threshold of 0.05, suggesting that the coefficient is not statistically significant. The coefficient

for the validity variable is 0.029, with a p-value of 0.998, also greater than 0.05. This indicates that the validity of the exit exam does not significantly predict stress levels. In contrast, the coefficient for the motivation variable is 0.326, suggesting that the stress level is expected to decrease by 0.326 units. The p-value for this coefficient is 0.030, which is less than 0.05, indicating that it is statistically significant in predicting stress levels. Lastly, the coefficient for the self-awareness variable is -0.126, implying that the stress level is expected to increase by 0.126 units. However, the p-value for this coefficient is 0.522, which is greater than 0.05, indicating a lack of statistical significance.

Among the factors of perceived usefulness, motivation derived from the exit exam has emerged as the sole predictor of student stress. The beta value represents the standardized coefficient, indicating the relative contribution of each predictor to the dependent variable, while the standard error (SE) measures the variability of the coefficient estimate. The R^2 value reflects the proportion of variance in the dependent variable explained by the predictors. The R^2 value for the entire model is 0.151, which indicates that 15.1% of the variance in students' stress levels during exit exams can be attributed to relevance, validity, motivation, and self-awareness. This suggests that, when holding other factors constant, students' perceptions of these variables can account for 15.1% of their performance on the exit test.

Discussion

College exit exams have become a crucial component of the education system, designed to assess students' knowledge and skills before they enter the workforce. However, students' perceptions of these exams are significant. The purpose of this article is to explore students' perceptions of the usefulness of exit exams, which can be analysed through five outcomes. Regarding students' views on the usefulness of exit exams, they generally perceive them positively, with ratings ranging from moderate to high (Mandernach, 2015). This aligns with previous research that underscores the importance of assessment in higher education. A positive perception of these exams can play a vital role in enhancing student performance, supporting Tamrat's (2023) argument that the introduction of such tests has increased the likelihood of improving performance at the national, institutional, and individual levels.

This positive perception can be attributed to students' understanding that the purpose of the exit exam is to assess their knowledge and skills for career success. While this positive attitude enhances student performance,

evidence indicates that those who excel before leaving school are more likely to succeed in the real world (Riley et al., 2023). Furthermore, the exam's relevance is often bolstered by the inclusion of practical exercises and case studies, which reflect real-world challenges and future industries (Schilling, 2007). In support of this argument, students' recognition of the exam underscores its indispensability in improving their knowledge and skills, thereby preparing them for future careers.

Although both male and female students are highly motivated to take the exit exam, female students are more likely to experience higher levels of stress related to their preparation and performance. This finding aligns with previous research indicating that female students tend to experience greater stress and anxiety in academic settings (e.g., McCurdy et al., 2022; Niederle & Vesterlund, 2010). These studies suggest that a widespread perception of female incompetence, coupled with heightened sensitivity to competitive pressure, may contribute to this outcome. Furthermore, this difference may be attributed to the perceived expectations among male peers, possibly stemming from the belief that society places less pressure on men regarding academic achievement (Khalil et al., 2022; Machin et al., 2020), resulting in reduced pressure on their academic performance.

The study also found that among the factors of usefulness the exit exam—such as relevance, validity, motivation, and self-evaluation—only the motivation associated with the exam predicts students' stress levels during their preparation. This suggests that the more students perceive a test as difficult to pass, the more motivated they become to study and prepare, which significantly determines their stress levels. This finding aligns with the theory of self-determination, which posits that autonomy, competence, and relatedness are essential for motivation and well-being (Ryan and Deci, 2000). The fact that motivation is the sole predictor of stress levels indicates that educators and policymakers should prioritise designing assessments that foster intrinsic motivation and engagement, rather than merely emphasising the relevance or validity of the test. This approach has a profound impact on the emotional and psychological stress experienced by students when confronted with academic pressure.

The results of the study have significant implications for developing strategies to reduce stress levels among students. By emphasising the motivational aspects of the exit exam, educators can help students cultivate a growth mindset, viewing the exam as an opportunity for growth and development rather than a source of stress and anxiety (Valencia, 2010). The findings also underscore the necessity for educators to consider the differing impacts of assessments on male and female students and to create targeted interventions to support those who may experience higher levels of stress. Additionally, the results provide valuable insights into college students' perspectives on exit tests and highlight gender differences. By recognising the potential benefits and drawbacks of exit exams, educators and policymakers can collaborate to design assessments that foster motivation, engagement, and well-being among students. Considering various factors, Tamirat (2024) advocates for a more comprehensive investigation into the nuances of exit exams within the Ethiopian context.

Conclusions

This study was conducted to gain a better understanding of student's perspectives on the relevance, validity, motivational capacity, self-awareness potential, and stress-inducing nature of exit exams. The aim is to provide insights into whether exams fulfill their intended purpose and, if not, how they can be improved. The results of the study indicated that students generally hold a positive perception of the outcomes of the exams. They believe that exams are relevant to their fields of study, valid in assessing their performance, and capable of motivating them to study harder. Additionally, students feel that exams offer valuable self-awareness into their strengths and weaknesses, enabling them to enhance their performance in the future. Despite students' positive perceptions of the exit exam, it is also viewed as stressful, particularly for female students, due to its tendency to motivate them to succeed. Therefore, it is essential to ensure that students maintain positive perceptions regarding the exam's relevance.

However, the study also identified a gender difference in the perception of self-awareness and the stress-inducing nature of exams. Female students appeared to experience more stress than their male counterparts and were less likely to view exams as a means of identifying their strengths and weaknesses. This finding is particularly concerning, as stress can negatively impact students' academic performance and mental health. Therefore, it is essential to address the stressful nature of exams for female students. Strategies could include providing additional support and resources to help them manage stress and anxiety or incorporating more diverse and inclusive exam materials to enhance self-awareness for all students.

The study's findings underscore the importance of considering students' perspectives when designing and administering exams. By understanding their perceptions of the examination process, educators can enhance its value, motivate students, and reduce stress for all students, regardless of gender. Ultimately, this approach will contribute to creating a positive and supportive learning environment that fosters both academic success

and personal growth. Given that issues related to exit exams are relatively new, there are numerous potential research areas to explore concerning exit exams and student achievement. Notably, these include the impact on students and educators, item analysis, demographic considerations, educational equity, and other related issues surrounding exit exams

References

Al Ahmad, M., Al Marzouqi, A. H., & Hussien, M. (2014). Exit exam as academic performance indicator. *The Turkish Online Journal of Educational Technology, 13*(3), 58–67.

Aniley, A. A. (2022). Comprehensive review on exit examination strategies and its role for enhancement of quality assurance and employability opportunity in Engineering and Technology Programs. *IETE Journal of Education, 64*(1), 41–46. https://doi.org/10.1080/09747338.2022.2118874

Ayenew, E., & Gebre Yohannes, A. (2022). Assessing higher education exit exam in Ethiopia: Practices, challenges and prospects. *American Journal of Applied Psychology, 10*(2), 79–86. https://doi.org/10.11648/j.sjedu.20221002.15

Boroumandfar, Z., Khorvash, F., Taeri, K., Salehi, M., & Yadegarfar, G. (2016). Validity and reliability of knowledge, attitude and behavior assessment tool among vulnerable women concerning sexually transmitted diseases. *Journal of Family & Reproductive Health, 10*(1), 9–14.

Brodersen, L., & Lorenz, R. (2020). Perceived stress, physiological stress reactivity, and exit exam performance in a pre-licensure Bachelor of Science nursing program. *International Journal of Nursing Education Scholarship, 17*(1), 1–12. https://doi.org/10.1515/ijnes-2019-0121

Carmen, F. (2011). The role of assessment in the student learning process. *Journal of Veterinary Medical Education, 38*(2), 157–162. https://doi.org/10.3138/jvme.38.2.157

Crave, S. L., & Balestra, M. L. (2018). Using HESI exit exams to predict NCLEX-RN success: A systematic review. *Nurse Education Today, 66*, 57–64. https://doi.org/10.1016/j.nedt.2018.03.007

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative and mixed methods approaches* (5th ed.). Sage Publications, Inc.

Demir, C. G., & Keles, O. P. (2021). The impact of high-stakes testing on the teaching and learning processes of mathematics. *Journal of Pedagogical Research, 5*(2), 119-137. http://doi.org/10.33902/JPR.2021269677

El-Hassan, H., Hamouda, M., El-Maaddawy, T., & Maraqa, M. (2021). Curriculum-based exit exam for assessment of student learning. *European Journal of Engineering Education, 46*(6), 849–873. https://doi.org/10.1080/03043797.2021.1920892

French, S., Dickerson, A. & Mulder, R. A. (2024). A review of the benefits and drawbacks of high-stakes final examinations in higher education. *High Educ,88*, 893–918. https://doi.org/10.1007/s10734-023-01148-z

Greene, J. P., & Forster, G. (2005). Public high school graduation and college readiness rates: 1991-2002. Education Working Paper Archive.

Hagos, B. 2019. University exit examination in Ethiopia: Strategies for institutionalization andimplementation. https://www.researchgate.net/publication/361094060_University_Exit_Examination_in_Ethiopia_Strategies_for_Institutionalization_and_Implementation

Hall, J., Lacombe, D., & Pokharel, S. B. (2020). State exit exams and graduation rates: A hierarchical SLX modelling approach. *Review of Regional Studies, 50*(2), 189–206. https://doi.org/10.52324/001c.12636

Holme, J. J., Richards, M. P., Jimerson, J. B., & Cohen, R. W. (2010). Assessing the effects of high school exit examinations. *Review of Educational Research, 80*(4), 476-526. https://doi.org/10.3102/0034654310383147

Jürges, H., Schneider, K., Senkbeil, M., & Carstensen, C. H. (2012). Assessment drives learning: The effect of central exit exams on curricular knowledge and mathematical literacy. *Economics of Education Review, 31*(1), 56–65. https://doi.org/10.1016/j.econedurev.2011.08.007

Khalil, N., Aljanazrah, A., Hamed, G., & Murtagh, E. (2022). Exploring teacher educators' perspectives of play-based learning: A mixed method approach. *Education Sciences, 12*(2), 1-16. https://doi.org/10.3390/educsci12020095

Kohn, A. (2000). The case against standardized testing. In A. Kohn (Ed.), *The case against standardized testing* (pp. 1-12). Heinemann.

Langford, R., & Young, A. (2013). Predicting NCLEX-RN success with the HESI exit exam: Eighth validity study. *Journal of Professional Nursing, 29*(25), 5–9. https://doi.org/10.1016/j.profnurs.2012.06.007

Maag Merki, K., & Holmeier, M. (2015). Comparability of semester and exit exam grades: Long-term effect of the implementation of state-wide exit exams. *School Effectiveness and School Improvement, 26*(1), 57–74. https://doi.org/10.1080/09243453.2013.861353

Machin, S., Mcnally, S., & Ruiz-valenzuela, J. (2020). Entry through the narrow door: The costs of just failing high stakes exams.

Journal of Public Economics, 190, 1–19. https://doi.org/10.1016/j.jpubeco.2020.104224

Mandernach, B. J. (2015). Assessment of student engagement in higher education: A synthesis of literature and assessment tools. *International Journal of Learning, Teaching and Educational Research, 12*(2). 1-14.

Marsidi, S. R. (2021). Identification of stress, anxiety, and depression levels of students in preparation for the exit exam competency test. *Journal of Vocational Health Studies, 5*(2), 87–93. https://doi.org/10.20473/jvhs.v5.i2.2021.87-93

McCurdy, B. H., Scozzafava, M. D., Bradley, T., Matlow, R., Weems, C. F., & Carrion, V. G. (2022). Impact of anxiety and depression on academic achievement among underserved school children: Evidence of suppressor effects. *Current psychology, 42,* 1-9. https://doi.org/10.1007/s12144-022-03801-9

Moore, L. C., Goldsberry, J., Fowler, C., & Handwerker, S. (2021). Academic and nonacademic predictors of BSN student success on the HESI exit exam. *Computers, Informatics, Nursing, 39*(10), 570–577. https://doi.org/10.1097/cin.0000000000000741

Nichols, S. L., & Berliner, D. C. (2007). *Collateral damage: How high-stakes testing corrupts America's schools*. Harvard Education Press.

Niederle, M., & Vesterlund, L. (2010). Explaining the gender gap in math test scores: The role of competition. *Journal of Economic Perspectives, 24*(2), 129–144. https://doi.org/10.1257/jep.24.2.129

Oldenmenger, W. H., De Raaf, P. J., De Klerk, C., & Van Der Rijt, C. C. D. (2013). Cut points on 0-10 numeric rating scales for symptoms included in the edmonton symptom assessment scale in cancer patients: A systematic review. *Journal of Pain and Symptom Management, 45*(6), 1083–1093. https://doi.org/10.1016/j.jpainsymman.2012.06.007

Palmer, E. J., Duggan, P., Devitt, P. G., & Russell, R. (2010). The modified essay question: Its exit from the exit examination. *Medical Teacher, 32*(7), e300–e307. https://doi.org/10.3109/0142159X.2010.488705

Reardon, S. F., Arshan, N., Atteberry, A., & Kurlaender, M. (2010). Effects of failing a high school exit exam on course taking, achievement, persistence, and graduation. *Educational Evaluation and Policy Analysis, 32*(4), 498–520. https://doi.org/10.3102/0162373710382655

Riley, T. A., Gouveia, C., Baker, R. S., Ruiz, K., & San Pedro, M. O. Z. (2023). Supporting student success on the practical nurse (PN) licensure exam: The health education systems incorporated (HESI) PN exit exam study. *Nurse Education Today, 121*. https://doi.org/10.1016/j.nedt.2022.105669

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist, 55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Schilling, S. G. (2007). The role of psychometric modeling in test validation: An application of multidimensional item response theory. *Measurement: Interdisciplinary Research and Perspectives, 5*(2–3), 93–106. https://doi.org/10.1080/15366360701487021

Schlemer, L., & Waldorf, D. (2010). Testing the test: Validity and reliability of senior exit exam. *ASEE Annual Conference and Exposition, Conference Proceedings*. https://doi.org/10.18260/1-2--16563

Schumacker, R. E., Wind, S. A., & Holmes, L. F. (2021). Resources for identifying measurement instruments for social science research. *Measurement: Interdisciplinary Research and Perspectives, 19*(4), 250–257. https://doi.org/10.1080/15366367.2021.1950486

Tamrat, W. (2023). *With more work, exit exam may become quality building block*. https://www.universityworldnews.com/post.php?story=20230726115440493

Tamrat, W. 2024. *Addressing poor pass rate in HE exit exam remainsurgent*. https://www.universityworldnews.com/post.php?story=20240417140934766

Valencia, R. R. (2010). *Dismantling contemporary deficit thinking: The role of culture, language, and class*. Routledge.

Wiggins, G. (1998). *Educative assessment: Designing assessments to inform and improve student performance*. Jossey-Bass.

Teaching and Learning in Human Movement Science in South Africa: Scoping Review and Community of Practice Insights

Samantha Kahts-Kramer, Jacobus J. Oosthuizen, Alretha M. du Plessis, Cornelia Schreck, Christo A. Bisschoff, and Dane' Coetzee

Abstract
Many Human Movement Science (HMS) lecturers in South Africa seek to implement evidence-based teaching practices to improve student success, yet little research explores whether SoTL literature meets their needs. This study examines how Scholarship of Teaching and Learning (SoTL) literature in Biokinetics, Sport Science, Coaching Science, Recreation Sciences, and Kinderkinetics aligns with the needs of a Community of Practice (CoP) at a South African university. A scoping review of SoTL publications (2013–2024) identified 35 articles categorised into seven themes. Findings were compared with qualitative insights from three Action Learning Set (ALS) meetings conducted using a Participatory Action Learning and Action Research study design. The analysis revealed gaps in understanding HMS students and the mental well-being of both lecturers and students, along with challenges in blended learning. Potential solutions include re-evaluating entry requirements, integrating reflective exercises, fostering professional identity through authentic learning, incorporating psychometric assessments, and deploying early diagnostic tools to identify at-risk students.

ABOUT THE AUTHORS: SAMANTHA KAHTS-KRAMER, email: Sam.kahts@nwu.ac.za, JACOBUS J. OOSTHUIZEN, A. M. DU PLESSIS, C. SCHRECK, C. A. BISSCHOFF, and D. COETZEE, *School of Human Movement Science and the Physical Activity, Sport and Recreation (PhASRec) Research Focus Area, Potchefstroom and Mafikeng Campus, North-West University, South Africa*.

Kahts-Kramer, S., Oosthuizen, J. J., du Plessis, A. M., Schreck, C., Bisschoff, C. A., & Coetzee, D. (2025). Teaching and Learning in Human Movement Science in South Africa: Scoping Review and Community of Practice Insights . *International Journal of African Higher Education, 11*(3), 128-155. https://doi.org/10.6017/ijahe.v11i3.17137

Blended learning strategies like team-based learning may enhance student engagement. Furthermore, collaborative efforts by students, lecturers, and experts may support teaching practices. These findings extend beyond South Africa, offering practical steps for addressing a CoP's needs through literature and ALS meetings. Future research should involve a broader range of higher education settings and integrate diverse perspectives within Communities of Practice to further refine evidence-based teaching strategies.

Keywords: community of practice, human movement sciences, participatory action learning and action research, Scholarship of Teaching and Learning, scoping review, South Africa

Résumé
En Afrique du Sud, de nombreux enseignants en sciences du mouvement humain (SMH) cherchent à mettre en œuvre des pratiques d'enseignement fondées sur des données probantes afin d'améliorer la réussite des étudiants. Toutefois, peu de recherches explorent la question de savoir si la documentation sur la science de l'enseignement et de l'apprentissage répond à leurs besoins. Cette étude menee dans une université sud-africaineexamine comment la littérature sur la science de l'enseignement et de l'apprentissage (SoTL) en biocinétique, sciences du sport, sciences de l'entraînement, sciences des loisirs et kinderkinétique s'aligne sur les besoins d'une communauté de pratique (CoP) dans une sud-africaine. Un examen approfondi des publications sur la science de l'apprentissage (2013-2024) a permis d'identifier 35 articles classés en sept thèmes. Les résultats ont été comparés aux observations qualitatives de trois réunions d'apprentissage par l'action (ALS) menées selon un modèle d'apprentissage par l'action participatif et de recherche par l'action. L'analyse a révélé des lacunes dans la compréhension des étudiants en HMS et du bien-être mental des enseignants et des étudiants, ainsi que des défis liés à l'apprentissage mixte. Les solutions potentielles comprennent la réévaluation des conditions d'entrée, l'intégration d'exercices de réflexion, la promotion de l'identité professionnelle par l'apprentissage authentique, l'intégration d'évaluations psychométriques et le déploiement d'outils de diagnostic précoce pour identifier les étudiants à risque. Les stratégies d'apprentissage mixte, comme l'apprentissage en équipe, peuvent renforcer l'engagement des étudiants. En outre, les efforts de collaboration entre les étudiants, les enseignants et les experts peuvent soutenir les pratiques d'enseignement. Ces résultats dépassent le cadre de l'Afrique du Sud et proposent des mesures pratiques pour répondre aux besoins d'une CdP par le biais de la littérature et des réunions d'ALS. Les recherches futures devraient porter sur un plus grand nombre d'établissements d'enseignement supérieur et

intégrer diverses perspectives au sein des communautés de pratique afin d'affiner les stratégies d'enseignement fondées sur des données probantes.

Mots clés: communauté de pratique, sciences du mouvement humain, apprentissage participatif et recherche-action, Scholarship of Teaching and Learning, étude exploratoire, Afrique du Sud

Introduction

Ernest Boyer's (1991) seminal work on the Scholarship of Teaching and Learning (SoTL) established a foundation for academics in higher education to systematically research their teaching and learning practices. Building on these foundational efforts, SoTL has gained notable attention in South Africa, evidenced by the launch of the *SoTL in the South Journal* and the inaugural SoTL conference in 2017 (Simpson & Looker, 2018). These milestones underscored the importance of educational research to complement traditional discipline-focused studies, emphasising the need to adapt SoTL for the educational contexts of the Global South (Leibowitz & Bozalek, 2018). Furthermore, the South African Council on Higher Education has recognised SoTL as a means of addressing potential systemic problems arising from the misconception that teaching and learning are merely "common sense" (Webbstock & Fisher, 2016, pp.170-171). Rather, SoTL is seen as instrumental in fostering student career-focused skill development, social responsiveness, and the development of graduate attributes, among other benefits.

Building on Boyer's foundational perspective, SoTL research is an evidence-based inquiry into teaching and learning practices, aimed at disseminating findings within the teaching and learning community (Kim et al., 2020; Swart et al., 2017). Fanghanel et al. (2015) state that a definitional framework for SoTL has yet to be established. For this paper, SoTL is defined as research that (a) systematically inquires into teaching and learning; (b) examines strategies or frameworks to enhance educational outcomes; (c) involves student and/or lecturer perspectives; (d) evaluates or proposes pedagogical modifications; (e) incorporates reflective practice; and/or (f) synthesises relevant educational research (Fanghenel et al., 2015; Swart et al., 2017). This evidence-based approach seeks to improve instructional practices, foster professional development, and encourage scholarly publication. Despite its growing prominence, there is limited understanding of how existing South African-based SoTL literature addresses the specific teaching and learning needs of Human Movement Science (HMS) disciplines within South Africa. Similar to other Health Science disciplines, HMS is inherently discipline-specific.

Therefore, integrating SoTL is often regarded as a standalone entity, leaving a largely unexplored and uncharted landscape (De Jongh et al., 2014).

To address the gap in understanding of how well South African-based SoTL aligns with lecturers' needs, this study examines whether the existing HMS-based SoTL literature meets the requirements of a Community of Practice (CoP) at North-West University (NWU). The School of HMS at NWU offers programs in Biokinetics, Kinderkinetics, Coaching Science, and Recreation Science, with plans to add Sports Science as an independent qualification (NWU, 2025). Lecturers from these disciplines formed a CoP comprising six doctoral-qualified staff members (three male, three female) with over 30 years of collective teaching experience. CoP members have received faculty teaching and learning awards and participated in multiple teaching-development initiatives, indicating a commitment to enhancing pedagogical expertise. Operating across NWU's Mafikeng and Potchefstroom campuses, the CoP was established to examine the concept of SoTL, explore its integration into discipline-specific fields such as HMS, and identify relevant research topics.

However, the emergence of this CoP coincided with significant shifts in South African higher education. Since the CoP's inception in 2021, South African higher education has been shaped by several factors: the rapid shift to online learning due to COVID-19 (Leal Filho et al., 2022), student protests over delayed National Student Financial Aid Scheme (NSFAS) payments (Ntombana et al., 2023), prolonged power outages known as loadshedding (Thembane, 2024), and increasing calls for decolonised education that integrates Indigenous Knowledge and multilingual approaches (Du Plessis, 2021). The rise of Artificial Intelligence in Education (AIEd) also presents challenges and opportunities linked to the Fourth Industrial Revolution (Patel & Ragolane, 2024). Across Africa, universities face many of these same issues, along with additional financial barriers, unstable infrastructure, curriculum transformation, and digital inequalities that hinder student success and lecturer capacity (Uleanya, 2024).

Against this backdrop, this study compares a scoping review with qualitative insights from the CoP's Action Learning Set (ALS) meetings (2021–2023) to answer the research question: How does South African SoTL literature in Biokinetics, Sport Science, Coaching Science, Recreation Sciences, and Kinderkinetics align with the needs of a CoP at a South African university? In doing so, the study identifies gaps and offers insights to guide future SoTL initiatives, enhancing teaching and learning in South Africa's HMS sector. By addressing the CoP's needs through a hybrid approach – combining a scoping review of existing literature with collaborative

decision-making during ALS meetings – this study provides a dynamic framework for informed decision-making to strengthen SoTL integration within HMS.

Methods

Following the methodological framework proposed by Arksey and O'Malley (2005), a scoping review was deemed appropriate for this study because it allowed the researchers to map the breadth and depth of literature in an emerging and underexplored area (Peterson et al., 2017). In this study, the approach was essential for examining how South African–based SoTL in HMS disciplines addresses the needs of a CoP. The five-stage process included: (1) identifying the research question, (2) identifying relevant studies, (3) selecting studies, (4) charting the data, and (5) collating, summarising, and reporting the results (Arksey & O'Malley, 2005). To answer this study's research question, a systematic search was conducted in ERIC, Sabinet, and Google Scholar using Boolean operators and key terms. The search terms included (Biokinetics OR "Coaching Science" OR "Sports Science" OR "Recreation Science" OR Kinderkinetics) and ("Scholarship of Teaching and Learning" and "South Africa"), as well as (Biokinetics OR "Coaching Science" OR "Sports Science" OR "Recreation Science" OR Kinderkinetics) and ("Teaching and Learning" OR "Student Experience") and "South Africa". The search focused on publications from 2013 to 2024. The researchers included studies if they demonstrated a systematic inquiry into teaching and learning; examined strategies or frameworks to enhance educational outcomes; involved student or lecturer perspectives; evaluated or proposed pedagogical modifications; incorporated reflective practice; integrated synthesised educational research; addressed the HMS disciplines focused on in this study; and/or fell within the specified time frame. All retrieved articles were catalogued in Excel, with an initial screening of titles followed by abstract reviews and then full-text analysis. Based on the extracted information, articles were placed into themes based on their primary focus. A transparent and systematic process – defined by clear inclusion criteria, rigorous database searches, and an independent article review by two researchers – helped ensure the validity and reliability of the articles retrieved.

To evaluate whether the reviewed literature met the needs of the CoP, three ALS meetings held between 2021 and 2022, with additional reflective meetings in 2023, were transcribed and collaboratively analysed by the CoP members. An ALS is a collaborative group formed to address common problems through inquiry and reflection, fostering shared experiences and learning among members (Wood, 2019). These ALS discussions focused on the implementation of SoTL within HMS and the lecturers' teaching

and learning needs. To generate qualitative data during the ALS meetings, democratic dialogue (Gustavsen, 1996) and participatory activities as described by Brookfield and Preskill (2016) were employed. This approach aligned with the CoP's adoption of the Participatory Action Learning and Action Research (PALAR) study design (Wood, 2019). PALAR integrates action learning and action research principles in a participatory and collaborative manner, allowing members to collectively identify, analyse, and reflect on their teaching and learning needs.

In alignment with PALAR's Figure Eight model of the application (Zuber-Skerritt, 2018, p.18), the CoP prioritised establishing strong relationships before embarking on research initiatives. To implement this model, the CoP adopted a relational ontology and dialectic epistemology (Wood, 2019), highlighting the importance of interconnectedness and continuous dialogue among members. Additionally, the CoP adhered to the 7Cs and 3Rs of PALAR as its guiding axiology. This framework emphasises collaboration, communication, commitment, compromise, a critical attitude, competence, and coaching (7Cs), as well as fostering relationships through engagement with reflection and recognition (3Rs) (Wood, 2019). For a practical example of the CoP's application of PALAR, see Kahts-Kramer et al. (2023).

To facilitate collaborative data analysis, transcripts of the ALS meetings were shared on a common platform for all CoP members to access. Pairs of CoP members independently performed an inductive analysis on separate transcript sets, with each pair analysing one of the three transcripts. This approach allowed themes to emerge organically without preconceived notions (Azungah, 2018). The analysis followed Braun and Clarke's six-phase thematic analysis process (Terry et al., 2017). A consensus meeting involving all ALS members was subsequently conducted to finalise the analysis and ensure coherence across the identified themes. Member checking was therefore used (Birt et al., 2016), with themes and categories presented to the group for input, ensuring alignment with the experiences and perspectives. Through iterative discussions, data saturation was achieved, where no further themes or categories were identified (Saunders et al., 2018).

The ALS successfully met the validity criteria of PALAR by fostering continuous collaboration, employing action-oriented approaches, engaging in reflective learning cycles, and addressing SoTL challenges, thereby ensuring the robustness and reliability of the study's findings (Wood, 2019). The CoP adhered to the validity criteria outlined by Herr and Anderson (2014), including outcome validity, which was verified through

member checking to ensure the accuracy and relevance of the findings. Process validity was ensured through multiple ALS meetings, supported by transparent documentation and critical reflection. Catalytic validity was demonstrated by taking actionable steps towards achieving the CoP's objectives, while democratic validity was achieved by sharing findings with the broader academic community, such as at conferences and workshops, to invite critique and feedback.

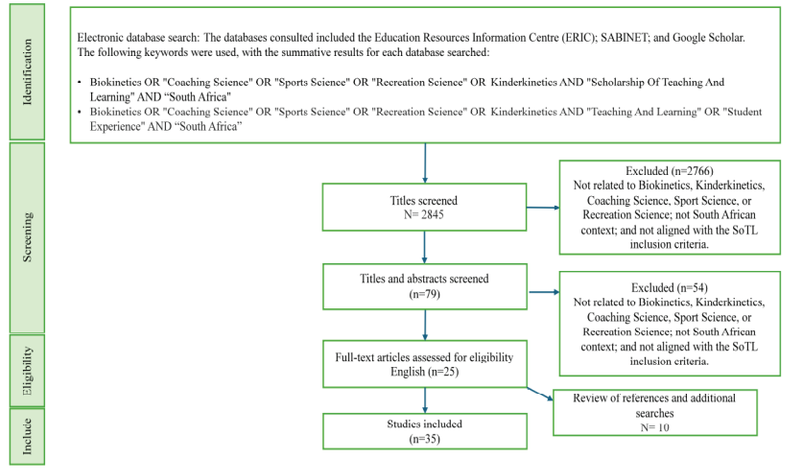
The CoP upheld participatory ethical principles by prioritising inclusivity, collaboration, and shared decision-making in the application of anonymity, justice, beneficence, and non-maleficence (Wood & Kahts-Kramer, 2022). The CoP created a code of conduct and constantly reflected on its implementation to uphold these principles. The CoP also used codes (for example, P1) to represent each member's thoughts. The Health Research Ethics Committee approved this study (NWU-00028-22-A1), attesting to its adherence to ethical principles.

While the study's methodology offers valuable insights, several limitations should be considered when interpreting the results and findings. First, our scoping review was intentionally designed to map existing literature within South Africa and capture emerging evidence within the local context, rather than to incorporate international perspectives or a systematic review. Although this approach facilitated a broad overview without the constraints of a very narrow focus, it may limit the comprehensiveness and breadth of potential solutions considered. Additionally, because the findings reflect the experiences of a single CoP within one institution, they are not intended to be generalisable to all universities. Instead, the study serves as a blueprint for other institutions to establish their own CoPs, explore HMS literature to enhance teaching and learning practices, identify gaps, and inform future directions, with its applicability varying depending on institutional contexts and challenges and CoP member representatives.

Results of the Literature Review

A review of 2854 articles published between 2013 and 2024 identified 35 articles that met inclusion criteria. Figure 1 identifies the flow diagram of included and excluded articles.

Figure 1: Flow Diagram of Included and Excluded Articles



The 35 articles, categorised into themes, are summarised in Table 1. The identified themes include technology-enhanced learning (TEL), authentic learning, equity in education, curriculum design, pedagogical approaches, staff development, and student psychological profiles. Authentic learning – encompassing work-integrated learning (WIL), inter-professional education (IPE), internships, and service-learning – emerged as the most prominent theme, which is not surprising given the practical nature of HMS and its inherent need for interdisciplinary collaboration. TEL ranked as the second most prominent theme, aligning with the advancements of the Fourth Industrial Revolution (Patel & Reguline, 2024).

Authentic Learning

Within the authentic learning opportunities examined, IPE received the most attention (Africa et al., 2024; Botma & Labuschagne, 2019; Butler, 2016; Delawala et al., 2023; Frantz et al., 2016; Moodley & Singh, 2018; Nyasulu et al., 2021; Reitsma et al., 2019; Rhoda et al., 2016; Waggie & Laattoe, 2014). These studies highlight both the potential benefits (e.g., improved teamwork, collaboration, graduate attribute development, enhanced patient care) and challenges (e.g., time constraints, developing multidisciplinary case studies, logistical planning, financial limitations, creating credit-bearing opportunities, and fostering collaborative cultural norms).

Table 1: HMS-based SoTL Research in South Africa

Theme	Authors	Focus	Participants
Technology-enhanced learning	Botha-Ravyse et al. (2018)	Gamification	Sport and Recreation Management and Sport Science students
	Habib et al. (2023)	e-learning and mobile health	Biokinetics and Sport Science students
	Heymans (2021)	TBL in blended learning platform	Biokinetics, Recreation, Sports Science and Coaching Science
	Titus (2016)	Digital gaming for multi-cultural interactions	Sport Science students
	Titus & Ng'Ambi (2023)	Digital gaming	Sport Science students
	Menon & Motala (2022)	COVID-19 effect and emergency remote and online learning	Biokinetics academia
	Noorbhai (2020)	Quality assurance in m-health and e-learning	Biokinetics students
	Noorbhai & Ojo (2023)	m-health and e-learning	Biokinetics staff and students
Authentic learning	Africa et al. (2024)	IPE: perceptions of whether IPE achieves sustainable development goals	Sport, Recreation and Exercise Science students
	Frantz et al. (2016)	IPE: academics' perceptions on interprofessional community-based participatory research	Sport Science academics
	Butler (2016)	IPE: students' perceptions of new IPE module	Biokinetics students
	Botma & Labuschagne (2019)	IPE: students' perceptions of IPE and collaborative practice via drawings	Biokinetics students
	Delawala et al. (2023)	IPE: programme development of IPE via scoping review, review of institutions programmes, international expert reviews, and university context analysis. Hereafter presentation to faculty for review via nominal group technique.	Biokinetics programme

	Goslin et al. (2016)	Adapted service learning: student reflections via reflective journals on collaborative in-depth learning	Recreation science students
	Moodley & Singh (2018)	Community-based clinical training: Academics views on strengths and challenges	Biokinetics and exercise disciplines included
	Nel (2014)	Internships: perceptions of Biokiniticists who had completed their internship before 2014	Biokinetics who had completed their internships
	Nyasulu et al. (2021)	IPE at community site: facilitator and students' reflections on experiences documented	Biokinetics sites included
	Reitsma et al. (2019)	IPE: students' perceptions of IPE experiences via reflective journals	Human Movement Science students
	Waggie & Laattoe (2014)	IPE: researchers' lessons learned from examining IPE exemplars	Sport Science and Recreation students
	Cripps et al. (2023)	Bimodal work-integrated learning: students' experiences of on- and off-campus WIL	Exercise and Sport
	Ismail et al. (2024)	IPE: scoping review highlighting gap in musculoskeletal healthcare professionals	Included studies focused on Biokinetics
	Rhoda et al. (2016)	IPE: students' perceptions of IPE collaborative practice intervention	Biokinetics students
Equity in education	Ntjana et al. (2022)	Academic challenges faced by students and admission requirements	Biokinetics students
	Higgins-Opitz & Tufts (2014)	Identifying struggling students	Sport Science students
	Sikhwari et al. (2019)	Factors influencing academic achievement: student perceptions	Biokinetic students
Curriculum design	Paul-Joseph (2021)	Curriculum design for first years (horizontal and vertical articulation)	Biokinetics students
	Msiza et al. (2020)	Peer assessment in large classes: lecturer perceptions	Sport Science lecturer

Pedagogical approaches	Schreck et al. (2020 a, b; 2022)	Field- and classroom-based experiential learning: student experiences	Recreation students
	Van den Berg (2014)	Coaching philosophies	Sport Science
	Van den Berg et al. (2017)	Amazing race focused on learning content	Sports students
Staff development in SoTL	De Jongh et al. (2014)	SoTL staff development and research with students	Sport, Recreation and Exercise Science lecturers
Student psychological profiles	Pienaar et al. (2022)	Psychosocial profile and academic performance of first-generation students	Sport and recreation
	Fichardt et al. (2023)	Psychological well-being, stressors, coping strategies	Biokinetics and Sport Coaching students

Collectively, these studies challenge entrenched professional stereotypes, promote clearer role understanding, and support efforts to meet South Africa's Sustainable Development Goals related to good health and well-being.

A notable barrier to IPE is the dominance of physiotherapy within rehabilitation services – often at the expense of professions such as Biokinetics, Chiropractic, Podiatry, and Osteopathy – potentially limiting awareness of other professional skill sets (Ismail et al., 2024). Regarding service learning, efforts to enhance it include promoting reflective practice (Goslin et al., 2016), involving community members in decision-making processes (Frantz et al., 2016), and collaborating with the university and Department of Health to develop business plans (Moodley & Singh, 2018). Nyasulu et al. (2021) further recommend site visits and strategic planning to better prepare a student health workforce for effective collaboration. On the contrary, Nel (2014) calls for improved internship experiences, noting issues such as underpayment, excessive workloads, and unmet clinical hour requirements for Biokinetics interns. Cripps et al. (2023) highlight the possibilities of implementing work-integrated learning through bimodal models with both on- and off-campus work-based opportunities.

Technology-Enhanced Learning

The prominence of Technology-Enhanced Learning is reflected in research exploring online and blended learning models, especially in Biokinetics and Sports Science (see Table 1). For instance, Heymans (2021) demonstrated the efficacy of Team-Based Learning (TBL) in large online health education cohorts, while Botha-Ravyse et al. (2018) highlighted the positive impact of well-designed gamification strategies, emphasising their alignment with

course objectives and assessments. Titus (2016) and Titus and Ng'Ambi (2023) suggest that gamification can foster multicultural collaborations among Sport Science students. However, the authors note the complexity of the South African educational landscape due to lingering apartheid-era legacies, with students self-organising along cultural lines, necessitating continuous collaborative efforts by lecturers.

Habib et al. (2023, p.17) advocate for multi-modal platforms integrating "text, audio-visual resources and face-to-face workplace learning activities", highlighting their potential to support students' psychological well-being, especially since online learning can be isolating. Furthermore, Noorbhai (2020) states that online platforms should be collaboratively developed with students and staff as part of quality assurance, especially given their questionable success rates and the availability of diverse alternatives. However, according to Noorbhai and Ojo (2023), there remains a lack of comprehensive training for health science lecturers, indicating an overall unpreparedness to fully leverage emerging technologies. While research on e-learning, m-health, and digital gaming is growing, the integration of Artificial Intelligence, virtual reality, and augmented reality is still limited (Table 1). Moreover, fields such as Recreation Sciences, Coaching Sciences, and Kinderkinetics remain relatively underexplored, presenting opportunities for future innovation and improvement.

Equity in Education

The presence of equity-centred research is not surprising given South Africa's complex historical legacy and the enduring influence of Western epistemologies (Cleophas, 2021). The shift to remote learning during COVID-19 exposed ongoing issues with pedagogical inclusion (Menon & Motala, 2022), while the digital divide – where many students lack access to educational platforms – further complicates TEL implementation (Habib et al., 2023). Though online education offers enhanced opportunities and flexibility, it also raises challenges such as limited student interactivity, isolation and demotivation.

In response to these structural inequalities, scholars have explored ways to balance academic integrity with inclusivity. Ntjana et al. (2022) advocate redefining admissions standards – standardising entry criteria at the mean required level rather than lowering prerequisite scores – to maintain academic integrity while accommodating diverse socio-economic backgrounds. Building on this, early identification of struggling students is important to ensure retention and academic success. Higgins-Opitz et al. (2014), for example, identify the first-class test as a valuable early-warning system, enabling timely interventions for at-risk students. Ntjana et al.

(2022) recommend the use of psychometric tests to identify at-risk students for early intervention, although they do not specify which assessments would be most appropriate. Ntjana et al. (2022) further highlight the underexplored potential of incorporating indigenous languages into curricula to enhance student success; however, how to do so successfully necessitates further exploration.

While much of the discourse on educational equity centres on how institutions can support students, it is equally important to acknowledge the resilience and agency that students bring to their academic journeys. Sikhwari et al. (2019) highlight that, despite economic disadvantage, many students remain highly motivated to succeed academically and improve their families' economic circumstances. This underscores the need for a balanced approach – one that not only enhances institutional support structures but also builds on students' existing strengths and determination.

Pedagogical Approaches and Curriculum Design

Studies in Table 1 demonstrate that peer assessment (Msiza et al., 2020) can enhance students' content knowledge and experiential learning can improve students' graduate attributes, although time management and group work remain challenging (Schreck et al., 2022; Schreck et al., 2020a, 2020b). Additional pedagogical strategies include guiding students to develop coaching philosophies and implement them practically (Van den Berg, 2014), as well as incorporating outdoor activities (e.g., "amazing race" tasks) to facilitate learning (Van den Berg et al., 2017). Paul-Joseph (2021) endeavoured to create a first-year conceptual framework specifically tailored for Biokinetics students, ensuring horizontal and vertical articulation of content.

Although pedagogical approaches and curriculum design for first-year students have gained attention, comprehensive curriculum revisions and alignment of content with industry standards need further exploration. Such alignment is vital, as South African business managers report that graduates often lack critical job skills (Mobarak, 2021). Mobarak (2021) further suggests limiting university subsidies to two years, with businesses taking responsibility for subsequent on-the-job training. The author emphasises the time-intensive nature of upskilling new employees and underscores the role of universities in ensuring that students are adequately prepared to enter the workforce.

Student Psychological Profiles

From a psychological perspective, Pienaar (2022) and Fichardt et al. (2023) offer valuable insights into factors affecting student well-being. Pienaar

et al. (2022) used the Multidimensional Scale of Perceived Social Support (MSPSS), the General Health Questionnaire (GHQ-12), and the General Self-Efficacy Scale (GSE) to explore reasons why some first-generation students fail or are not promoted to their next year of study. Their findings show that inadequate support (from family, friends, or other sources), financial stress, anxiety and depression, social dysfunction (challenges with routine tasks, reduced social engagement, lower productivity), and lower Grade 12 marks significantly increase students' risk of academic failure. In alignment with these observations, Fichardt et al. (2023) found that the students faced a range of COVID-19-related stressors: academic, psychological, financial, interpersonal, physical health, and spiritual. The goal for lecturers and students would be to determine whether students are employing adaptive coping strategies (e.g., direct problem-solving, seeking emotional support) rather than maladaptive strategies (e.g., distraction, denial, substance abuse) to cope with life's challenges. Fichardt et al. (2023) utilised the Brief Coping Orientation to Problems Experienced (COPE) to come to these conclusions. Taken together, these studies emphasise how comprehensive assessments of students' psychological profiles, particularly post-COVID-19, can inform interventions to enhance resilience and academic success.

Building on the scoping review findings, the subsequent thematic analysis will explore the CoP's needs and evaluate whether the reviewed literature in Table 1 adequately addresses these needs.

Findings From the CoP and Their Alignment With the Reviewed Literature

Four themes emerged from the ALS meetings: 1) understanding HMS students' motivations; 2) supporting mental well-being; 3) clarifying online and blended learning; and 4) forming CoPs for SoTL. Verbatim quotes and comparison to literature, assist with answering the research question: *What is the alignment between South African-based SoTL literature in Biokinetics, Sport Science, Coaching Science, Recreation Sciences, and Kinderkinetics, and the needs of a CoP within a South African university?*

Theme 1: Understanding HMS Students' Motivations

The CoP explored various pedagogical strategies to support HMS students, comparing them to existing approaches in Table 1. Comparisons included gamification (Botha-Ravyse et al., 2018; Titus, 2016; Titus & Ng'Ambi, 2023), peer assessments (Msiza et al., 2020), authentic learning experiences (Africa et al., 2024), and experiential learning (Schreck et al., 2020a, 2020b; Schreck et al., 2022). The CoP also discussed the inclusion of indigenous knowledge and language (Du Plessis, 2021). However, a

critical foundational challenge overshadowed the urgency of implementing solutions: the pressing need to gain a more nuanced understanding of HMS students and their motivations, as one member explained:

> We don't know who the people [our students] are at this stage. The first phase [of our SoTL research] is just to see what these students possess, why they are here, and what they are capable of. You know!?... We must first see who are the guys. Are they thriving in the current systems we have? And is it necessary for us to change? (P3)

The CoP further debated whether pedagogical strategies should cater to all students or focus only on motivated individuals, as some students seemed to lack genuine interest in their studies. One member remarked, "We can only take the horse to water, but not make him drink it" (P1). This lack of interest was attributed to some students selecting HMS as a fallback option after failing to gain admission to their preferred fields, resulting in a misalignment between their current studies and true aspirations.

The CoP discussions identified a range of factors that they believed influenced student engagement and success, spanning systemic challenges to individual characteristics. Systemic issues – including poor literacy skills and inadequate preparation in primary and secondary schooling – were viewed as significant barriers. One member remarked, "They [students] cannot read" (P6). Additionally, the CoP believed the lowered entry requirements were not conducive to student success. As Ntjana et al. (2022) argue, lowering entry requirements fails to address equality concerns and may exacerbate disengagement among underprepared students. Pienaar et al. (2022) further support this by showing that higher matriculation marks correlate with improved student success.

On an individual level, the need for self-reflection, self-discipline, and a clear understanding of educational relevance were emphasised. As one participant noted: "They do not do self-reflection and ask, what could I have done differently? [They do not have] ...that self-discipline. They just want to know what the lecturer can give me to make it easier. I am looking for the bare minimum" (P1). Goslin et al. (2016) and Reitsma et al. (2019) provide some guidelines on the types of reflective questions that could be asked to gain an understanding of student experiences and perhaps alter their perspectives towards achieving only the bare minimum, albeit these guidelines were originally intended to explore service learning and IPE experiences. Goslin et al. (2016, p.116) asks: "What went well, and why? What didn't go so well, and why? What could we have done differently, and how?". Reitsma et al. (2019, p.3) add: "What did you learn from the contact session? What theoretical knowledge did you use? What previous

experiences could you link to the session? What do you need to find out or learn for the next session?" And "How did you experience the facilitation and interaction?"

These insights suggest that many students struggle to see the practical relevance of their education and its connection to their future careers, which can deepen their disengagement. One participant noted, "They [students] do not know what they can do with their qualifications" (P4). Without a clear understanding of how their qualifications translate into employment or entrepreneurial opportunities, students may perceive their education as lacking purpose. Integrating or enhancing authentic learning experiences (Table 1) could help bridge this gap by improving students' awareness of potential career pathways and how their unique strengths align with their chosen profession. However, none of the authentic learning studies reviewed offer guidance on enabling students to explore the full spectrum of entrepreneurial and employment opportunities associated with their qualifications, nor do they provide strategies for developing a strong professional identity within their field.

Recognising the complexity of these issues, the CoP concluded that understanding their students – their identities, interests, strengths, weaknesses, and motivations for choosing HMS – is essential. The literature in Table 1 provided some guidance, such as re-evaluating entry requirements, incorporating reflective questions, and linking authentic learning opportunities to career prospects. However, this realisation highlighted the need to identify which authentic learning experiences and reflective questions could deepen the CoP's understanding of students and enhance motivation by emphasising the career opportunities tied to their qualifications and professional identity development.

Theme 2: Supporting Mental Well-Being for Students and Lecturers

The CoP highlighted the significant challenges of maintaining mental well-being in the post-COVID-19 era, particularly due to the shift to online education, which deprived lecturers of meaningful interactions with students. The CoP stressed that this issue is critical for the future of SoTL in HMS, as it directly affects the learning environment and the overall well-being of both lecturers and students in an increasingly digital educational landscape. One CoP member expressed her dissatisfaction with online education and its impact on her happiness and job satisfaction:

> I do not like my work at the moment... I am not happy. For the first time in 15 years, I am not happy. I miss face-to-face [teaching]. I miss giving class. I miss where at the end of a semester... there were four students that stepped in initially and did not have a clue about what direction

> to take in life, and now they do. And now, all of a sudden [with online education], there is nothing. I feel I do this, and I do that... and the students know nothing.... (P5)

The ALS CoP members observed that their own mental health challenges might reflect the struggles students face in the post-COVID-19 era. One member remarked: "Students, they are not coping... They do not know how to cope and change something and make it good. To say to themselves: This is not the end of the world, I have a solution" (P2). The challenges South African students face in navigating post-pandemic education are well-documented (Poalses & Bezuidenhout, 2018).

The CoP noted that while students' psychological profiles are included in Table 1, they are not extensively addressed. However, insights from Fichardt et al. (2023) and Pienaar et al. (2022) provide some guidance. Fichardt et al. (2023) highlighted that students experienced a range of COVID-19-related stressors and emphasised the need for lecturers to collaborate with students in developing mental health training initiatives. These initiatives should foster healthy coping strategies, such as taking direct action to address problems. Additionally, Fichardt et al. (2023) used the COPE scale, which could be a valuable tool for identifying students' coping strategies and enabling targeted, collaborative interventions. Similarly, Pienaar et al. (2022) stressed the importance of targeted support for first-generation students by assessing their levels of social support. Their study found that enhanced social support improves academic performance, whereas social dysfunction – such as challenges in interpersonal relationships and support networks – and family responsibilities (e.g., caregiving and household duties) hinder it. To better understand and address students' mental health and social challenges, Pienaar et al. (2022) used tools such as the MSPSS, GHQ-12, and GSE.

In response to these findings, the ALS CoP agreed that prioritising the mental health of both lecturers and students is essential and should be addressed collaboratively through psychometric assessments. However, they also recognised the need for interdisciplinary collaboration with various university departments, including psychology, theology, business, education, and social work. Engaging these disciplines could foster a holistic approach to student and lecturer wellbeing by integrating expertise in mental health, pedagogy, career readiness, social support, digital accessibility, and spiritual and physical wellbeing.

Theme 3: Clarifying Online and Blended Learning

The CoP faced significant challenges in developing HMS students into competent professionals during the transition to online education. Recognising that the future of education is increasingly tied to online learning, the CoP viewed this shift as a foundational element for advancing SoTL in HMS. However, the literature reviewed (Table 1) revealed gaps in addressing the CoP's practical, day-to-day challenges. While gamification and e-learning approaches were discussed, they often proved unsuitable for the hands-on, practice-oriented nature of HMS.

An additional challenge identified by the CoP was students' difficulty in effectively using online platforms. This struggle was attributed to factors such as limited experience with formal communication norms, language barriers, poor time management, and anxiety about making mistakes: "This is the era we are in with technology. They can't send an e-mail to you and share the correct information. You have to beg them the entire time to tell you what is wrong. So that I can help you..." (P4). Another pressing issue was academic integrity during online assessments and students' lack of intrinsic motivation to engage deeply with learning. As one CoP member observed: "Getting 50% is what students want... they don't have a willingness to learn" (P5). Habib et al. (2023) highlight that students often rely on extrinsic motivation, and that isolated online learning environments can be distressing.

To improve students' online education while considering their technological literacy and lack of motivation, the CoP found Habib et al.'s (2023) emphasis on blended learning models particularly relevant. These models not only integrate online components but also foster student-centred, meaningful engagement with the content through face-to-face interactions and online communities of practice. Within this blended learning framework, the use of TBL was also discussed. As suggested by Heymans et al. (2021), TBL enhances behavioural, cognitive, and emotional engagement, helping to reduce students' reliance on extrinsic motivation and fostering deeper, more meaningful learning experiences. By promoting collaboration and accountability, TBL strengthens students' problem-solving skills and prepares them for teamwork, which is essential in HMS professions. Furthermore, the TBL approach would help address institutional challenges faced by lecturers, including inconsistent guidance on online and blended learning methods, which has led to confusion:

> ...There was never effective communication to us as lecturers about what is the approach we should consider with online teaching. And as

> a lecturer, I do it my way, [he] does it his way... Everyone [should have] just started at the same point. And then, as we evolve... improve, plan our strategy together, and move forward together. (P2).

The CoP recognised that while multiple approaches to online and blended education exist, additional training is needed to keep them up to date with emerging trends, particularly in Virtual Reality and Artificial Intelligence. As Noorbhai (2020) and Noorbhai and Ojo (2023) highlight, collaboration between staff and students can support the selection of the most appropriate online learning platform, particularly because many Health Science staff are not yet fully equipped to meet the demands of the Fourth Industrial Revolution. To address this, interdepartmental collaboration, alongside staff and student involvement, has also been deemed essential, particularly with experts in online and blended learning.

Theme 4: Forming CoPs to Support SoTL Adoption

The CoP emphasised the importance of communities of practice in identifying contextual challenges, addressing practical needs, and supporting staff mental health. This was particularly important for discipline-focused lecturers who are not education specialists. One CoP member expressed her feelings about the difficulty of SoTL research and the lack of time to learn about it, and how the CoP could overcome this barrier:

> I think as we move forward, out of my own experience... because I have read these articles, and it feels like this [SoTL] is very difficult. I mean, I have spent a lot of time learning behaviourism, etc. Everything is new to me and weird. And I feel I do not have time to do this. So, it feels that if I am going to take part in this, and I do want to, then we need to work on each group member's strengths. Those in the group who already understand this must do it for us... (P1)

Another member expressed their uncertainty and perceived difficulties in aligning SoTL with their discipline-specific focus: "How can you align your SoTL project with your discipline-specific focus?... It's impossible... SoTL is different from our research focus areas" (P4). However, the support and expertise provided within the CoP helped some members overcome perceived barriers and instead feel energised to engage in SoTL: "There is an old saying in sports motivation videos that everything you need is already inside of you! Just go out and do it! I think we have... the literature you *[first author]* have been giving us really just gets our juices going!" (P3).

Furthermore, the CoP provided access to various levels of expertise and opportunities to share and learn from each other. One member highlighted this benefit, saying:

> ... there's a lot of issues *[in teaching and learning]* I already managed by, by the years I've been involved in academia... She *[one of the ALS members]* has been here forever, so she's already made a few mistakes. So, now she can tell me: But don't do this, it's not going to work, try this or whatever. So, you don't have to reinvent the wheel... I think that is the novelty *[of being in a CoP]*... The support we're having and the strengths is what is making the group, I think, real. (P2)

Since most HMS lecturers are discipline-specific rather than SoTL experts, a CoP can support them in overcoming perceptual barriers to action, enabling them to initiate their own SoTL research projects and contribute to the advancement of SoTL in HMS. Furthermore, the CoP can source experts from other departments to assist with problem-solving.

Commencing SoTL, as experienced by the CoP in this study, is oftentimes stymied by the steep learning curve, as outlined by McEwan (2022). Yet, the myriad of benefits - from collective wisdom to surmounting teaching and learning obstacles - as argued by Wilson-Mah et al. (2022) make the endeavour worthwhile. Given that HMS lecturers often lack formal training in pedagogy, this CoP offers a structured approach to integrating SoTL into their disciplines. No published literature on CoPs in HMS have been identified using PALAR as a foundational method (as shown in Table 1). To the best of the researchers' knowledge, and within the disciplines investigated in this study, the CoP in this study is the first to provide PALAR-based guidelines (du Plessis et al., 2025).

Conclusion

The South African-based literature-informed strategies provided actionable steps to address the needs of a CoP. However, given the limited availability of SoTL-based HMS literature in South Africa, the CoP acknowledged that expanding the literature search to include international perspectives would offer broader insights. Based on the literature reviewed, four key priorities emerged. First, understanding student motivations and preparedness remains essential. This includes re-evaluating entry requirements, incorporating reflective questions, and linking authentic learning opportunities to career prospects and professional identity development. Further research is needed to determine the most effective approaches for HMS disciplines. Second, promoting mental well-being requires a collaborative approach that supports both students and lecturers. Psychometric assessments such as the COPE scale, MSPSS, GHQ-12,

and GSE can provide valuable insights into student challenges, but their integration into HMS curricula – developed in partnership with students – requires further research. Lecturer well-being must also be prioritised, as their ability to effectively support students depends on institutional structures that foster resilience and mental health. Cross-disciplinary collaboration with mental health professionals could strengthen support systems, but sustainable implementation strategies must be explored. Third, optimising blended learning strategies is critical. While TBL has shown promise, its effectiveness in HMS requires further research, particularly in integrating indigenous knowledge, multilingual resources, and discipline-specific practical experiences. Ongoing lecturer training in emerging technologies, such as AI and virtual reality, could further improve digital teaching practices. Fourth, expanding CoPs focused on HMS across institutions could facilitate continuous pedagogical development and improve SoTL adoption while ensuring teaching and learning strategies remain contextually relevant. However, further work is needed to establish best practices for CoPs that include students and other professionals while maintaining meaningful engagement and ethical conduct.

Future Directions

Despite its limitations, this study integrates literature-driven insights with ALS meetings to offer actionable steps for enhancing teaching and learning. Future research should expand CoPs across multiple institutions and foster cross-disciplinary engagement among students, lecturers, and experts to strengthen support frameworks and problem-solving within ALS. Additionally, exploring innovative pedagogies – such as TBL, multi-modal platforms, artificial intelligence, virtual reality, and augmented reality – could refine blended learning models for HMS, provided these approaches are developed with input from both students and lecturers to address their well-being as well as practical job and entrepreneurial needs. More broadly, given the shared structural and pedagogical challenges across African higher education institutions, the findings of this study suggest promising opportunities to advance SoTL practices within HMS continent-wide.

References

Africa, L., Filies, G. C., & Oghenetega, C. O. N. (2024). The perspectives of first-year students on interprofessional education as a vehicle for achieving Sustainable Development Goal 3. *African Journal of Health Professions Education*, *16*(2), 63–67. https://doi.org/10.7196/ajhpe.2024.v16i2.918

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology: Theory and Practice*, *8*(1), 19–32. https://doi.org/10.1080/1364557032000119616_

Azungah, T. (2018). Qualitative research: Deductive and inductive approaches to data analysis. *Qualitative Research Journal*, *18*(4), 383–400. https://doi.org/10.1108/QRJ-D-18-00035

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research*, *26*(13), 1802–1811. https://doi.org/10.1177/1049732316654870

Botha-Ravyse, C., Lennox, A., & Jordaan, D. (2018). Lessons learned from gamification of a learning experience: A case study. *South African Journal for Research in Sport Physical Education and Recreation*, *2*(40), 23–40. https://www.researchgate.net/publication/327382001

Botma, Y., & Labuschagne, M. (2019). Students' perceptions of interprofessional education and collaborative practice: Analysis of freehand drawings. *Journal of Interprofessional Care*, *33*(3), 321–327. https://doi.org/10.1080/13561820.2019.1605981

Boyer, E. L. (1991). Highlights of the Carnegie report: The Scholarship of Teaching from "Scholarship reconsidered: Priorities of the professoriate." *College Teaching*, *39*(1), 11–13. https://doi.org/https://www.jstor.org/stable/27558441?seq=3

Brookfield, S. D., & Preskill, S. (2016). *The discussion book: 50 great ways to get people talking*. John Wiley & Sons.

Butler, M. (2016). *Students' experiences of interprofessional education in the Faculty of Health Sciences at the University of the Free State*. University of the Free State. https://scholar.ufs.ac.za/items/84a248da-07d4-4a4a-a3e9-0bf255bc38a1

Cleophas, F. J. (2021). Decolonising the South African sport science curriculum. *Sport in Society*, *24*(9), 1539–1553. https://doi.org/10.1080/17430437.2020.1752674

Cripps, A. J., Conlon, J. A., Ardzejewska, K., & Papaluca, C. (2023). Bimodal work-integrated learning experiences: Enhancing graduate attributes in exercise and sport science. *International Journal of Work-Integrated Learning*, *4*(24), 465–475. https://doi.org/https://eric.ed.gov/?id=EJ1409103

De Jongh, J.-C., Frantz, J. M., & Rhoda, A. J. (2014). Integrating research into teaching and learning: Needs assessment for staff development. *African Journal of Health Professions Education*, *6*(2), 124–128. https://doi.org/10.7196/ajhpe.211

Delawala, F., Heymans, Y., & Christmals, C. D. (2023). Developing an interprofessional education programme for a health science faculty in South Africa: A multi-method study. *Journal of Taibah University*

Medical Sciences, *18*(3), 538–547. https://doi.org/10.1016/j.jtumed.2022.11.001

Du Plessis, P. (2021). Decolonisation of education in South Africa: Challenges to decolonise the university curriculum. *South African Journal of Higher Education*, *35*(1), 54–69. https://doi.org/10.20853/35-1-4426

du Plessis, A. M., Schreck, C. M., Bisschoff, C. A., Coetzee, D., Kahts-Kramer, S. A., & Oosthuizen, J. J. (2025). Recommendations for success in forming and maintaining a SoTL Community of Practice. *Teaching and Learning Inquiry*, *13*(2025), 1-17. https://doi.org/10.20343/teachlearninqu.13.9

Fanghanel, J., Pritchard, J., Potter, J., & Wisker, G. (2015). *Defining and supporting the Scholarship of Teaching and Learning (SoTL): A sector-wide study literature review*. https://doi.org/https://eric.ed.gov/?id=ED561359

Fichardt, A. E., Vuuren, C. J. Van, & van der Merwe, L. (2023). Psychological well-being, stressors, coping strategies and support of undergraduate healthcare students amid COVID-19. *Health SA Gesondheid*, *28*(0), 1–8. https://doi.org/10.4102/hsag.v28i0.2340

Frantz, J. M., Filies, G., Jooste, K., Keim, M., Mlenzana, N., Laattoe, N., Waggie, F., & Rhoda, A. (2016). Reflection on an interprofessional community-based research project. *Curationis*, *8*(2), 234–236. https://doi.org/10.4102/curationis.v36i1.69

Goslin, A., van der Klashorst, E., Kluka^, D. A., & van Wyk, J. G. U. (2016). Formative reflections of university recreation science students in South Africa as catalyst for an adapted service-learning program. *Australian Journal of Adult Learning*, *56*(1), 111–130. https://files.eric.ed.gov/fulltext/EJ1097527.pdf

Gustavsen, B. (1996). Action Research, Democratic Dialogue, and the issue of "Critical Mass" in change. *Qualitative Inquiry*, *2*(1), 90–103. https://doi.org/10.1177/107780049600200113

Habib, N., Danica, S., & Nadia, H. (2023). South African health sciences students' perspectives on utilisation, constraints and future possibilities of mHealth and e-Learning. *Discover Education*, *2*(24), 1–21. https://doi.org/10.1007/s44217-023-00045-y

Herr, K., & Anderson, G. L. (2014). *The action research dissertation: A guide for students and faculty*. Sage publications.

Heymans, Y. (2021). *Adopting a medium-impact blended learning design to address teaching-and learning-related challenges in large-group interprofessional teaching*. North-West University. https://repository.nwu.ac.za/handle/10394/37640

Higgins-Opitz, S. B., & Tufts, M. (2014). Performance of first-year health sciences students in a large, diverse, multidisciplinary, first-

semester, physiology service module. *Advances in Physiology Education*, *38*, 161–169. https://doi.org/10.1152/advan.00067.2013

Ismail, F., Myburgh, C., Downing, C., & Makkink, A. (2024). Interprofessional education among musculoskeletal healthcare professions: A scoping review. *Journal of Chiropractic Education*, *39*, 1–10. https://doi.org/10.7899/JCE-24-12

Kahts-Kramer, S., Schreck, C., Coetzee, D., Bisschoff, C., Oosthuizen, C., & du Plessis, A. (2023). *Scholarship of teaching and learning: Forming a community of practice 101 [Conference contribution]*. Figshare. https://doi.org/10.6084/m9.figshare.24631326.v1

Kim, A. S., Popovic, C., Farrugia, L., Saleh, S. A., Maheux-Pelletier, G., & Frake-Mistak, M. (2021). On nurturing the emergent SoTL researcher: Responding to challenges and opportunities. *International Journal for Academic Development*, *26*(2), 163-175. https://doi.org/10.1080/1360144X.2020.1842743

Leal Filho, W., Lange Salvia, A., Abubakar, I. R., Mifsud, M., Azadi, H., Sharifi, A., LeVasseur, T., Luetz, J. M., Velazquez, L., Singh, P., Pretorius, R., Akib, N. A. M., Savelyeva, T., Brandli, L., Muthu, N., & Lombardi, P. (2022). Impacts of the COVID-19 pandemic on routines of higher education institutions: A global perspective. *Sustainability (Switzerland)*, *14*(21), 1–19. https://doi.org/10.3390/su142114105

Leibowitz, B., & Bozalek, V. (2018). Towards a slow scholarship of teaching and learning in the South. *Teaching in Higher Education*, *23*(8), 981–994. https://doi.org/10.1080/13562517.2018.1452730

McEwan, M. P. (2022). The journey to SoTL: Institutionally supporting a transition to Scholars of Teaching and Learning. *International Journal for the Scholarship of Teaching and Learning*, *16*(2), 1–8. https://doi.org/10.20429/ijsotl.2022.160205

Menon, K., & Motala, S. (2022). Pandemic disruptions to access to higher education in South Africa: A dream deferred? *South African Journal of Higher Education*, *36*(4), 47–65. https://doi.org/10.20853/36-4-5188

Mobarak, K. (2021). Exploring the contribution of universities to labour market requirements in South Africa: An employer's perspective. *Industry and Higher Education*, *35*(2), 114–124. https://doi.org/10.1177/0950422220935784

Moodley, I., & Singh, S. (2018). Strengths and challenges of community-based clinical training as viewed by academics at the University of KwaZulu-Natal, Durban, South Africa. *African Journal of Health Professions Education*, *10*(2), 129–135. https://doi.org/10.7196/ajhpe.2018.v10i2.954

Msiza, V., Zondi, T., & Couch, L. (2020). The use of peer assessment at a

time of massification: Lecturers' perceptions in a teacher education institution. *Journal of Education (South Africa)*, *79*, 47–64. https://doi.org/10.17159/2520-9868/i79a04

Nel, C. R. (2014). *An evaluation of Biokinetics internships*. University of Zululand. https://uzspace.unizulu.ac.za/items/20d64593-14b7-4b1e-b632-81adfb471370

Noorbhai, H. (2020). Can student and staff involvement in quality assurance and promotion be achieved in the health sciences through mHealth and e-Learning? A conceptual platform design. *South African Journal of Higher Education*, *34*(5), 73-81.

Noorbhai, H., & Ojo, T. A. (2023). mHealth and e-Learning in health sciences curricula: A South African study of health sciences staff perspectives on utilisation, constraints and future possibilities. *BMC Medical Education*, *23*(1), 1–18. https://doi.org/10.1186/s12909-023-04132-4

North-West University (NWU). (2025). *Human Movement Science*. https://health-sciences.nwu.ac.za/human-movement-sciences

Ntjana, B. M., Paul, Y., Burger, M., & Ellapen, T. J. (2022). *Factors contributing to the academic challenges faced by South African physiotherapy, occupational therapy and biokinetics students* (pp. 1–14). IntechOpen. https://doi.org/10.5772/intechopen.10749 1

Ntombana, L., Sibanda, F., & Gwala, A. (2023). Positioning the #FeesMustFall Movement within the transformative agenda: Reflections on student protests in South Africa. *Education as Change*, *27*, 1–18. https://doi.org/10.25159/1947-9417/10870

Nyasulu, J. C. Y., Dreyer, A. R., Molete, M., & Mothoagae, G. (2021). Interprofessional Learning (IPL) innovation through community site assessments: The faculty of health sciences students' and facilitators' reflections. *Innovations in Education and Teaching International*, *58*(3), 328–339. https://doi.org/10.1080/14703297.2020.1744468

Patel, S., & Ragolane, M. (2024). The implementation of Artificial Intelligence in South African higher education institutions: Opportunities and challenges. *Technium Education and Humanities*, *9*, 51–65. https://orcid.org/0000-0002-1889-7616

Paul-Joseph, Y. (2021). *A conceptual developmental framework for the first year Biokinetics Practical Programme Specialisation Degree Programme in Education Management*. Tshwane University of Technology (TUT). https://urn.fi/URN:NBN:fi:amk-202106011329 6

Peterson, J., Pearce, P. F., Ferguson, L. A., & Langford, C. A. (2017). Understanding scoping reviews: Definition, purpose, and process. *Journal of the American Association of Nurse Practitioners*, *29*(1), 12–16. https://doi.org/10.1002/2327-6924.12380

Pienaar, M. (2022). *Establishing a psychosocial and needs profile of first-generation undergraduate students at an identified historically disadvantaged institution*. University of the Western Cape. https://etd.uwc.ac.za/

Poalses, J., & Bezuidenhout, A. (2018). Mental health in higher education: A comparative stress risk assessment at an open distance learning university in South Africa. *International Review of Research in Open and Distributed Learning*, *19*(2), 170–190. https://doi.org/10.19173/irrodl.v19i2.3391

Reitsma, G., Scrooby, B., Rabie, T., Viljoen, M., Smit, K., Du Preez, A., Pretorius, R., Van Oort, A., Swanepoel, M., Naudé, A., & Dolman, R. (2019). Health students' experiences of the process of interprofessional education: A pilot project. *Journal of Interprofessional Care*, *33*(3), 298–307. https://doi.org/10.1080/13561820.2019.1572600

Rhoda, A., Laattoe, N., Smithdorf, G., Roman, N., & Frantz, J. M. (2016). Facilitating community-based interprofessional education and collaborative practice in a health sciences faculty: Student perceptions and experiences. *African Journal of Health Professions Education*, *8*(2), 225–228. https://doi.org/10.7196/ajhpe.2016.v8i2.846

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality and Quantity*, *52*(4), 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

Schreck, C. M., Weilbach, J. T., & Reitsma, G. (2020a). Preparing recreation professionals: Graduate attributes expected of entry-level recreation professionals in a South African context. *World Leisure Journal*, *62*(1), 52–66. https://doi.org/10.1080/16078055.2019.1615542

Schreck, C. M., Weilbach, J. T., & Reitsma, G. M. (2020b). Improving graduate attributes by implementing an experiential learning teaching approach: A case study in recreation education. *Journal of Hospitality, Leisure, Sport and Tourism Education*, *26*, 1–11. https://doi.org/10.1016/j.jhlste.2019.100214

Schreck, C. M., Weilbach, T., & Reitsma, G. M. (2022). An experiential learning-teaching model in recreation studies: Reflections on implementation. *South African Journal for Research in Sport, Physical Education and Recreation*, *44*(1), 41–57. https://doi.org/10.36386/sajrsper.v44i1.213

Sikhwari, T. D., Ravhuhali, F., Lavhelani, N. P., & Pataka, F. H. (2019). Students' perceptions of some factors influencing academic achievement at a rural South African university. *South African*

Journal of Higher Education, 33(4), 291–306. https://doi.org/10.20853/33-4-2937

Simpson, Z., & Looker, P. (2018). Introduction to the special issue. *SOTL in the South, 2*(1), 1-3. https://doi.org/10.36615/sotls.v2i1

Swart, A. J., Luwes, N., Olwagen, L., Greyling, C., & Korff, C. (2017). Scholarship of teaching and learning: 'What the hell' are we getting ourselves into? *European Journal of Engineering Education, 42*(6), 653–667. https://doi.org/10.1080/03043797.2016.1214689

Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. In *The SAGE handbook of qualitative research in psychology*. SAGE Publications.

Thembane, N. (2024). Navigating the power outages: Impact and coping strategies of students in a South African university during loadshedding. *Journal of Student Affairs in Africa, 12*(2), 131-142. https://doi.org/10.24085/jsaa.v12i2.4643

Titus, S. (2016). *Towards a social constructivist game-based learning model: A case of using digital games in sport studies in South Africa*. University of Cape Town. http://hdl.handle.net/11427/23457

Titus, S., & Ng'Ambi, D. (2023). Digital gaming for cross-cultural learning: development of a social constructivist game-based learning model at a South African university. *International Journal of Game-Based Learning, 13*(1), 1–20. https://doi.org/10.4018/IJGBL.331995

Uleanya, C. (2024). Leadership crisis in African higher education in the 4IR: Lesson(s) for the future. *Cogent Education, 11*(1), 1-12. https://doi.org/10.1080/2331186X.2024.2429870

Van den Berg, L. (2014). Primary factors identified in sport science students' coaching philosophies. *African Journal for Physical, 2*(2), 433–447. https://www.researchgate.net/publication/284168248_Primary_factors_identified_in_sport_science_students'_coaching_philosophies

Van den Berg, L., Roos, S. J., Els, B., & Lennox, A. (2017). Sport students' perception of their learning experience: Amazing Race as an innovative outdoor teaching and learning strategy. *African Journal for Physical Activity and Health Sciences, 23*(1:1), 77–89. https://www.ajol.info/index.php/ajpherd/article/view/154824

Waggie, F., & Laattoe, N. (2014). Interprofessional exemplars for health professional programmes at a South African university. *Journal of Interprofessional Care, 28*(4), 368–370. https://doi.org/10.3109/13561820.2014.891572

Webbstock, D., & Fisher, G. (2016). *"South African higher education reviewed: Two decades of democracy"* (including chapter on *Governance*). Council on Higher Education. www.che.ac.za

Wilson-Mah, R., Axe, J., Childs, E., Hamilton, D., & Palahicky, S. (2022).

A collaborative self-study: Reflections on convening a SoTL Community of Practice. *International Journal for the Scholarship of Teaching and Learning, 16*(2), 1–10. https://doi.org/10.20429/ijsotl.2022.160204

Wood, L. (2019). PALAR: Participatory action learning and action research for community engagement. In *Action learning and action research: Genres and approaches* (pp. 193–206). Emerald Publishing Limited.

Wood, L., & Kahts-Kramer, S. (2022). But how will you ensure the objectivity of the researcher? Guidelines to address possible misconceptions about the ethical imperatives of community-based research. *Research Ethics, 19*(1), 1–17. https://doi.org/10.1177/17470161221135882

Zuber-Skerritt, O. (2018). An educational framework for participatory action learning and action research (PALAR). *Educational Action Research, 26*(4), 513–532. https://doi.org/10.1080/09650792.2018.1464939